# A CROSS-CULTURAL ANALYSIS OF THE SPATIAL DISTRIBUTION OF INTERNATIONAL TOURISTS IN CHINA

A dissertation submitted to Nottingham Business School
the Nottingham Trent University
in partial fulfilment of the requirements for the degree of
(Volume I: Chapter 1 to 8)

DOCTOR OF PHILOSOPHY

By
Jiaolan Bowden
焦蘭 波頓

February 2003 • Nottingham, UK

# ABSTRACT

This research focuses on the cross-cultural study of the spatial distribution of tourists (SDT) or international tourists (SDIT) within China. It encompasses two broad areas of knowledge base – cross-cultural and SDT. Many of the issues in these wide ranging, but overlapping, domains have developed separately and have as yet to be conceptualised and researched in a holistic and rigorous manner. This makes the holistic and behavioural perspective, as well as the scientific approach of this study, all the more novel. The societal context of this study – tourism in China, adds more practical and theoretical interest to this research. Its diversified tourism resources provide one of the best places to carry out a cross-cultural spatial research.

The conceptual framework has strengthened and reinforced the literature in two respects. First, the notion of SDT has been clarified, and it is suggested that it consists of three features of tourist movement - pattern, direction and intensity. Secondly, a factual 'cultural distance' variable, formed from cultural constructs, has been used to underpin the cross-cultural comparative framework in addition to commonly applied cultural proxies such as nationality. The whole research methodology was developed based upon these two notions, and was greatly enhanced by the use of the discrete choice approach (logistic regression models) by which the operational challenges faced when incorporating the behavioural elements into cross-cultural and spatial research were successfully resolved.

The research findings do not entirely support the empirical evidence quoted in the cross-cultural SDT literature. The key findings of this research are that tourists prefer linear instead of circular travel within China; their movements are either vertical and/or horizontal; international gateway positions of Beijing and Shanghai have been confirmed, but that of Guangzhou is questioned. All the cultural related variables are significant in the SDIT, but cultural distance is more sensitive at expressing the differences in the SDIT than cultural proxies. There is no evidence suggesting that geographical distance is a primary factor in the SDIT. Some trip attributes, such as travel groups, as well as social economic variables, such as income levels, are confirmed as significant, but demographic characteristics such as age and gender show no significance in the cross-cultural SDIT within a destination country.

# ACKNOWLEDGEMENTS

If there is any better way for me to express than my gratitude to the people who have helped and supported me in this doctoral research I will do it. However, I can do nothing except say 'thanks' to them here because, for these people, except for giving me help and support, they want nothing. Without these people, I could not even imagine this work.

So many people offered unforgettable help. My gratitude is to Alan Bowden for his painstaking proofreading; Dr. Jane Binner for her constructive criticism; and Dr. Sophie Torley for her professional support, and to many more for giving me so much.

I have so many things to say to my parents. What I most want to thank for them for are their sufferings for me, for the sleepless nights they spent without knowing where I was in a foreign land, for the tormenting day they went through worrying for me and for each stretched moment they endured waiting to see me. Nevertheless, they have never complained because they cherish me as a part of their souls.
我有很多要向我的父母說，但是太多显得多余。我最想感谢的是他们为我所受的苦。感谢那些無眠之夜他们不知道我到底在他鄉何處，感谢那些折磨的白天他們爲我而担心，感谢每一个漫长的等待见到我的时刻，感謝每一個月圓之夜沒有我與他們分享晚餐。但是他们永遠不会報怨，因为他们珍爱我为他们心灵的一部份。

One of the outstanding people, to whom I own countless debts, is Stephen Bowden – my best friend and husband. How could a person be so encouraging, sacrificial, comforting, loving, and helpful by proofreading in happiness as well as in those stressful long years with enormous patience, forbearance and kindness? If there is unconditional love in human beings he is one of its embodiments.

My supervisor, professor Myra Shackley, has been the best mentor and guide one could ever hope for, from whose unyielding academic integrity and personality I have benefited significantly. She was also brought wealth experience, knowledge and patience to my scrappy manuscripts and step by step, she has helped me to climb the ladder of the ivory tower.

This Person to whom I owe most of all comes last - my Lord, Jesus Christ. Without His love, I could not even manage to exist.

# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

# ABBREVIATIONS

AIDS – the Almost Ideal Demand System
ANOVA – Analysis of Variance
AUS – Australia
CAAC – Civil Aviation Association of China
CAN – Canada
CIS – Commonwealth of Independent States (former Soviet Union)
CITS – China International Travel Service
CNSB – China National Statistics Bureau
CNTA – China National Tourism Association
CTS – China Travel Service
CYTS – China Youth Travel Service
EAP – East Asia and Oceanisia/Pacific
For/Over – Foreigner and overseas Chinese
FRA – France
GCRs – Greater China Regions
GER – Germany
GDP – Gross Domestic Product
GNP – Gross National Product
GSR – Greater Shanghai Region
HK/MC – Hong Kong and Macau Special Administrative Regions
IIA – Independence from Irrelevant Alternatives
IID – Independently and identically distributed
JP – Japan
-2LL – Minus two odd-likelihood ratio
LR – Likelihood ratio
MAL – Malaysia
MNL – Multinomial logistic regression
PHI – the Philippines
RMB – Renminbi (Chinese currency)
RUS – Russia
SAR – Spatial Administrative Region
SDIT– Spatial distribution of international tourists
SDT – Spatial distribution of tourists
SING – Singapore
SK – South Korea
THAI – Thailand
TW – Taiwan
UNESCO – United Nation Educational, Scientific and Cultural Organisation
VFR – Visiting family and relatives
VIF – Variance inflation factors
WTO – World Tourism Organisation

# 1 INTRODUCTION

## 1.1 INTRODUCTION

Although tourism study as an independent discipline has been established for only a few decades, geographers were first interested in this topic fifty years ago. However, it was not until the early 1960s in Europe and later in North America and elsewhere that geographical studies of tourism start to appear frequently in the literature (Pearce 1979). Analysis of tourist spatial behaviour is an integral part of tourism geography. There are wide varieties of factors that influence and represent the spatial behaviour of tourists, such as the distance travelled, the destination choices, the movement patterns that tourists undertake, the origin-destination configurations, and so forth. An understanding of these factors and their impacts on tourist behaviours is essential for expanding our understanding horizon of the tourism phenomenon.

Despite the importance of tourism geography in tourism studies, many gaps still exit. Some are very basic; such as the confusion of the concepts of the spatial distribution of tourists (SDT) or spatial distribution of international tourists (SDIT) and tourist flows. The significance of the tourism phenomenon requires that the academic realm keeps abreast of its fast development, and therefore more research is needed to bring knowledge to fill the gaps present in tourism literatures.

## 1.2 RESEARCH RATIONALE

The study of the SDT has been a traditional topic for tourism geography since its beginning, but the theoretical development of this topic has not been very satisfactory. The literature shows that the concept of cross-cultural SDT, which comprises two broad knowledge bases – cross-cultural differences and the SDT, is uncertain. None of these two concepts has settled notions, especially the SDT which have been used interchangeably, ambiguously, and carelessly by many tourism researchers (Oppermann 1992a, 1992b; Pearce 1987a, 1984).

In terms of theoretical development, the study of cross-cultural SDT suffers from inconsistencies and deficiencies. There are not many comprehensive studies, which depict the general characteristics of SDT within a destination country. Much of the theoretical research so far has been undertaken in a confined locations and limited to specific problems, and consequently need to be carefully weighted in different geographical and social contexts. The research into the SDT tends to be less extensive, holistic and noticeably focused upon the macro (i.e. international tourism), and the micro levels (domestic tourism) but not on the meso level (intra-national tourism). Although there are a few studies on the meso level, they are mostly descriptive and non-confirmatory (such as Christaller 1963; Fennell 1996; Murphy and Keller 1990; Oppermann 1992a, 1995, 1992b; Pearce 1987b, 1990; Pedrini 1984; Uysal and O'leary 1996).

In the meantime, while there have been numerous enquires into cross-cultural differences in tourist behaviour including the tourist spatial behaviour, there have been relatively few studies into the SDT that are strictly cross-cultural in nature. Most of them use cultural proxies, such as nationalities, languages, race and geographical origins. Although these attributes can reflect the cultural differences of tourists to various extents, research using direct cultural constructs, which can reveal *bona fide* value systems of people held from different societal groups, is almost non-existent in tourism studies; though this approach has been applied in other social science domains for decades (such as Applbaum and Jordt 1996; Berry 1991, 1975, 1976, 1980; Hofstede 1980a, 1983; Triandis 1977, 1995, 1984).

The inherent intricacy of these two concepts – cross-culture and the SDT themselves, which encompass a wide span of socio-cultural and geographical realms, has been an obstacle in the development of cross-cultural SDT studies. Social differences among different geographical areas are another reason to prevent deeper generalisation of the theories or empirical research. Although many theories and concepts can be and have been drawn from the discipline of geography, economics and psychology, etc., the interfaces between these disciplines with the tourism subject are still problematic. Tourism researchers need to realise that although tourism is a relatively new discipline, which has inherent links with many other disciplines, its development has not benefited from these related disciplines as much as it should have done.

A unique opportunity has been presented to the world of tourism study. The unprecedented tourism growth in China is destined to attract attentions across the world, and its newly opened tourism industry has many phenomena that are unexploited to tourism academies. Furthermore its tourism potential has been estimated to be the world number one, in terms of tourist generating and receiving, in twenty years time (International Herald Tribune 1999; WTO 1998). The tourism industry not only attracts tourists from across the world, but also tourism researchers. Especially being a spacious country rich in tourism resources and diversified geographical landscapes, which are lacking in many other countries, China tends to appeal tourists of diversified interests, heterogeneous tastes and varied behaviours and preferences. This is most valuable in comparative studies. On the other hand, despite the rapid tourism development in China, scholarly examination of the tourism phenomenon is quite limited, which can be an encumbrance in sustaining a rigorous growth of the tourism industry in China.

All these factors mean that China is one of the best places to test out many of the conceptual notions held in tourism geography, and provide comprehensive factual information to support practical development and academic research. As this research is focused on China and aims to solve the problems with regards to cross-cultural SDT, it has also benefited from these advantages.

In summary, there is a general lack of a conceptual consensus and empirical research pertaining to the cross-cultural SDT, and very little regional research about China. Given these facts, this study of the cross-cultural SDT from four origins – America, the UK, Japan and the Greater China Regions (referring to Hong Kong and Macau Special Administration Regions (SARs), Taiwan, and many Southeast Asian countries in which ethnic Chinese have a large proportion or even the majority of the population) offers rare glimpse of an important tourism phenomenon. In focusing on explaining the nature and characteristics of tourists' movement within a destination country, this research embraces geographic, behavioural and cross-cultural perspectives.

## 1.3 AIM OF THE RESEARCH

In general, the purposes of this research are twofold and comprise academic goals and practical objectives. Firstly, to contribute to the literature of cross-cultural and SDT studies, it targets in a cause-effect investigation of the characteristics of the cross-cultural SDIT in China and links with some key socio-demographic and geographical attributes. In particular the research tries to answer the questions such as: "What are the spatial configurations, such as the travel patterns, routes, intensity and directions, of international tourists from different origins travelling within China's tourism regions?" "Are the spatial configuration of the international tourists differentiated by their places of origin or distance they travelled?" "How and what other external attributes apart from cultural differences and geographical distance contribute to the spatial variations of international tourists in China and what is their relative importance?" Answers to these questions are relevant for tourism geographers and tourism practitioners in China as well as for a wide variety of social scientists concerned with the multiple facets of tourism.

This leads to the second purposes of this research. Despite the theoretical intention, this research will have practical merit. Through the spatial analysis of the international tourists, the functional forms of the tourism destinations in China can be derived. This will provide the tourism industry in China with valuable up-to-date information that can be used for their marketing purposes and destination planning. Other destination countries can also use the information or replicate the research methodology to develop their marketing strategies in their search for a differential advantage, competitive positioning and growth in a global market.

In summary, from a scientific point of view the research aims are shaped by the availability and the content of current relevant literatures, as well as the interest of the researcher. The whole research aims to address three broader objectives, namely:

(1) to contribute to the body of knowledge on the concepts, importance and empirical literatures about the study of the SDT within a destination country;

(2) to contribute to the body of knowledge on the concept, importance and empirical literatures about the cross-cultural research into tourist behaviour;

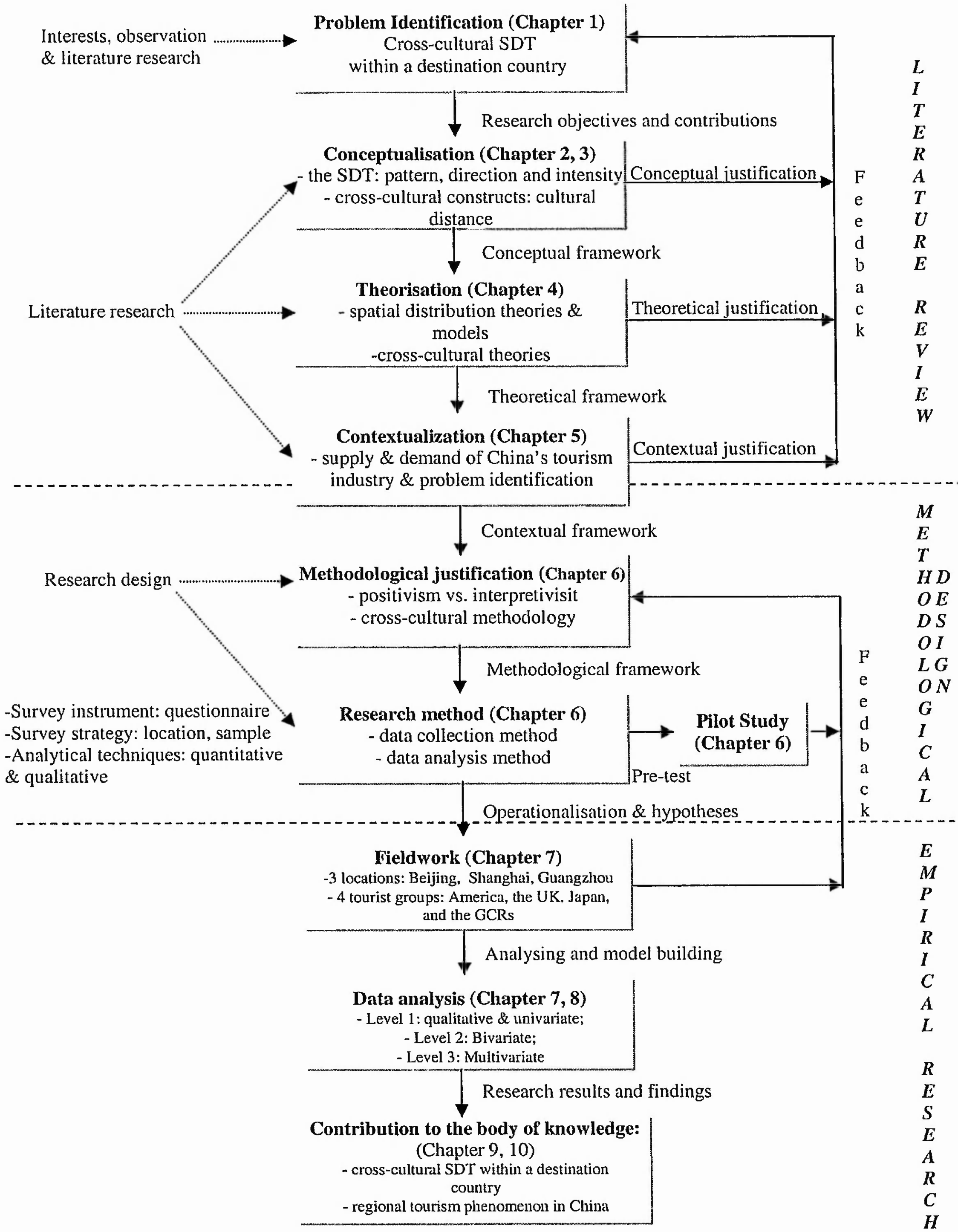
(3) to contribute to the methodological development of the cross-cultural SDT research;

(4) to contribute to the body of knowledge about regional tourism phenomenon in China.

## 1.4 THE RESEARCH PROCESS

A qualified research process should be a continuum from the identification of a social and theoretical problem to the resolution of the problem. However, most of the time researchers do not really find an exact solution for a problem but make contributions toward the resolution of the problem. This is the ultimate aim of this research; to identify social and theoretical problems and contribute to their resolution. Following a rigorous scientific path, Figure 1-1 shows the flow chart of the research process.

**Figure 1 - 1 A framework of the research development**



It is not possible to discuss the effects of the cross-cultural SDT if we do not have a clear idea of what the term means. After identifying the main objectives of the research and the contribution it will make, this thesis begins to develop its conceptual framework. The confusion of some key concepts in tourism studies has been an impediment to tourism research. Even if it is not easy to establish a standardised understanding of these concepts, it is still necessary to establish consistent working definitions in every research context. The concepts relevant to this research, which need to be clarified, include specific concepts such as tourism geography, the SDT and cross-cultural differences as well as broader concepts such as tourism and culture.

Chapter 2 discusses the SDT issues and Chapter 3 examines cross-cultural issues. Deficiencies and knowledge frameworks in these two knowledge areas are identified. Some important relevant concepts are reformulated in the light of these research needs. Based upon these, one of the aims of this study is justified, that it is to add new knowledge to the existing conceptual base of cross-cultural SDT studies. The SDT is conceptualised as having three key features. The main focus of this research is the aggregate movement of tourists emphasising these three features – the patterns, directions and intensities, and how cultural elements relate to the movement. The three-feature notion of the SDT is central because it suggests a holistic perspective for analysing the SDT. Cross-cultural differences (operationalised as 'cultural distance') is conceptualised using Hofstede's cultural dimension approach, which is adapted into tourism study. Confucian Dynamism is incorporated into the dimensions because of its suitability in depicting Chinese cultural values (Hofstede 1991, 1980a, 1983; Hofstede and Bond 1988; The Chinese Culture Connection 1987). This makes a cross-cultural analysis truly cross-cultural but not cross generalised cultural proxies.

Theoretical understanding is another important step in a scientific research because a new theory development or scientific advancement is seldom an incremental addition to what is already known, but an intrinsically revolutionary process, which requires the re-evaluation of prior theories. Theorising is a process of finding the 'best' explanation to the information extracted from a phenomenon and involves building up links between established theories and new knowledge development. Chapter 4 critically evaluates the existing research results of the cross-cultural SDT and establishes a theoretical framework for this research. This involves an assessment of existing theory, whereby strengths and weaknesses are exposed. Different theoretical frameworks have been developed in both cross-cultural and the SDT research. There is also plentiful empirical research discussing the SDT under different contexts. Given the wide range of different scales of tourist travel, it is clearly quite a challenge to develop a spatial theory applicable to all the situations. The common applicability is that different situations adapt suitable theories. The use of the discrete choice model is justified as an appropriate research model in this spatial behaviour analysis and is underpinned by strong theoretical grounds.

The aim of Chapter 5 is to introduce the background issues of tourism in China. A provisional spatial analysis of the SDIT within China by means of secondary data was conducted in order to familiarise readers with the research settings. The cross-national difference of the SDIT within China is clearly identified, as is the effects of the geographical distance variable. However, this examination is exploratory in nature, and the data are second hand, the analysis in this chapter helps to reinforce the research questions rather than explain them. Further research is required to confirm 'if the observation obtained in this chapter can be empirically proved' which is to be answered in Chapter 7 and 8.

Underpinned by the conceptual and theoretical establishment, Chapter 6 discusses the philosophical and paradigmatic stances of this research. This is to justify the research design and ensure that the research methods used are logical, and the research outcomes scientific and constructive. The concepts and theories identified need to be operationalised so that the research objectives can be transferred into describable, measurable and testable constructs. These involve the justification of the research design, the selection of the data collection method and the assessment of the data analysis techniques. Based upon all these steps, the research can embark on the final step of data analysis.

Chapter 7 and 8 are dedicated to the data analysis. The distinctive differences between the data analysis work and the work beforehand rest on the degree of empiricism and the research approaches. The later work relies more on critical and deductive analysing and synthesizing of the data collected; but this is dependent on the exploratory and inductive reasoning of the issues carried out beforehand. With different foci and methods but corresponding objectives, these two parts of work jointly contribute to the body of knowledge. The data analysis is separated into three levels progressing from the descriptive and exploratory analysis of the data profile and general patterns and directions of the SDIT (Chapter 7), to the confirmatory analysis of the intensity and propensity of the SDIT (Chapter 8).

Three overall hypotheses are postulated in Chapter 8. The 1$^{st}$ hypothesis is that there is a strong relationship between the choice of the main destinations in China and the cultural distance exhibited by the four types of international tourists; the 2$^{nd}$ hypothesis proposes that there is a strong relationship between the choice of the main destinations in China and the two cultural proxies – places of origin and ethnicities exhibited by these tourists; and the 3$^{rd}$ hypothesis postulates that there is a relationship between the choice of the main destinations in China and the perceived geographical distance of tourists between China and the origin of the tourists, but the link is relatively weak. These hypotheses are tested by a logistic regression technique.

In Chapter 9, the research findings derived from the data analysis in Chapter 7 and 8 are summarised and discussed in conjunction with the literature review, as well as the regional spatial analysis made in Chapter 5. The research findings confirmed the 1$^{st}$ and 2$^{nd}$ hypotheses, but the 3$^{rd}$ hypothesis could not be empirically proved. Moreover many other characteristics of the SDIT showed variance with the literature, Chapter 9 deplores a rigorous discussion.

Chapter 10 is the final chapter comprising three major parts – the research contributions, limitations and points of improvement and further research directions. The contributions of this research are sustained in three aspects - conceptual and theoretical additions to the body of knowledge of cross-cultural SDT studies; methodological innovations in assisting knowledge development and similar research; and practical implications to tourism practioners, especially those in China's tourism industry. There are also inevitable limitations and points of improvement. The research has developed with an acknowledgement of these points and made an effort to reduce their effects.

# 2 CONCEPTUAL ISSUES IN THE STUDY OF THE SPATIAL DISTRIBUTION OF TOURISTS

## 2.1 INTRODUCTION

What is the spatial distribution of tourists (SDT) or international tourists (SDIT)? What are some of the basic concepts that tourism researchers employ in looking at the world of tourism from their particular angle? How do these concerns relate to this research? These kinds of questions are usually addressed initially when tourism researchers start a new project. However, even a cursory examination of the literature on tourism studies reveals differences and inconsistencies in terms and definitions. As a starting point it is necessary to ground the examination of the SDT in a sound understanding of just what it is the SDT; how it is defined and labelled. Therefore the main aim of this chapter is to build a conceptual framework for this research to enable it to be recognised as a feasible area of investigation and to underpin the whole research process.

To understand the relevant conceptual issues of this research is to look at what kinds of knowledge are involved in it. The research is mainly a study of cross-cultural differences in the SDT that incorporates various sorts of knowledge. The internal representation of cross-cultural SDT can be conveniently thought of as involving at least two distinct fields of existing tourism research: knowledge about the movement behaviour of tourists, which covers the objective attributes of the SDT, and knowledge about cross-cultural differences of tourists. In this chapter, the major concern is the first field of knowledge – the SDT. The key tasks are to explain the nature of the concepts of the SDT; to find out what the other basic concepts relating to it are and how they underpin the research questions and to explore some broader ranges of issues relating to the methods of conceptualisation in tourism research. Chapter 3 will focus upon the concept of cross-cultural differences in tourist behaviours.

Towards these ends, this chapter is divided into four main parts. The first part addresses some basic issues relating to tourism conceptualisation. The major concerns are the problems and challenges associated with the task of defining tourism concepts. In order to overcome these challenges, four relevant approaches appropriate for defining these concepts are proposed. The second part looks at the foci of tourism using the proposed approaches. The third part of the chapter attempts, by describing the relationship between tourism and tourism geography, to identify the concept and scope of tourism geography. It examines the disciplinary relationship between tourism and geography thereby leading to the clarification of some relevant spatial concepts for this study. Finally, the chapter will look at the question of how these concepts relate to this research topic – the SDT as well as the issues of cross-cultural differences in the SDT.

## 2.2 THE CHALLENGES IN DEFINING TOURISM CONCEPTS

Tourism concepts and principles are developed to facilitate explanations and justify the ways in which a particular set of tourism facts is organised. They demarcate the scope of the facts and act as the basis of the postulates of theories. Defining questions partly predetermines the explanatory form to be used in providing answers.

### *2.2.1 Four dilemmas associated with tourism conceptualisation*

Defining is a part of the research process, but it has also been a major cause of controversy. One of the main problems in tourism studies lies in the lack of a solid and comprehensive conceptual and theoretical framework. This is largely related to the way that tourism research has evolved as a sub-discipline of a variety of other disciplines, such as economics, sociology and geography (Mansfeld 1995; Page 1995). Many different aspects are reflected in tourism studies, the phenomenon therefore has to be dealt with on an interdisciplinary basis. However this interdisciplinary characteristic makes tourism studies miss the conceptual and theoretical cohesiveness. For example, the definition of 'tourist' has been given by various sources. Although they all recognise that tourists are travellers, industrial or official definitions emphasise the purposes of people travelling and the distance they travelled whereas psychologists or geographers place emphasis on the recreational motivations of tourist travel. These differences impose a dilemma, that although tourism studies requires an inter-disciplinary perspective, they also have to overcome tensions and differences resulting from this inter-disciplinary perspective.

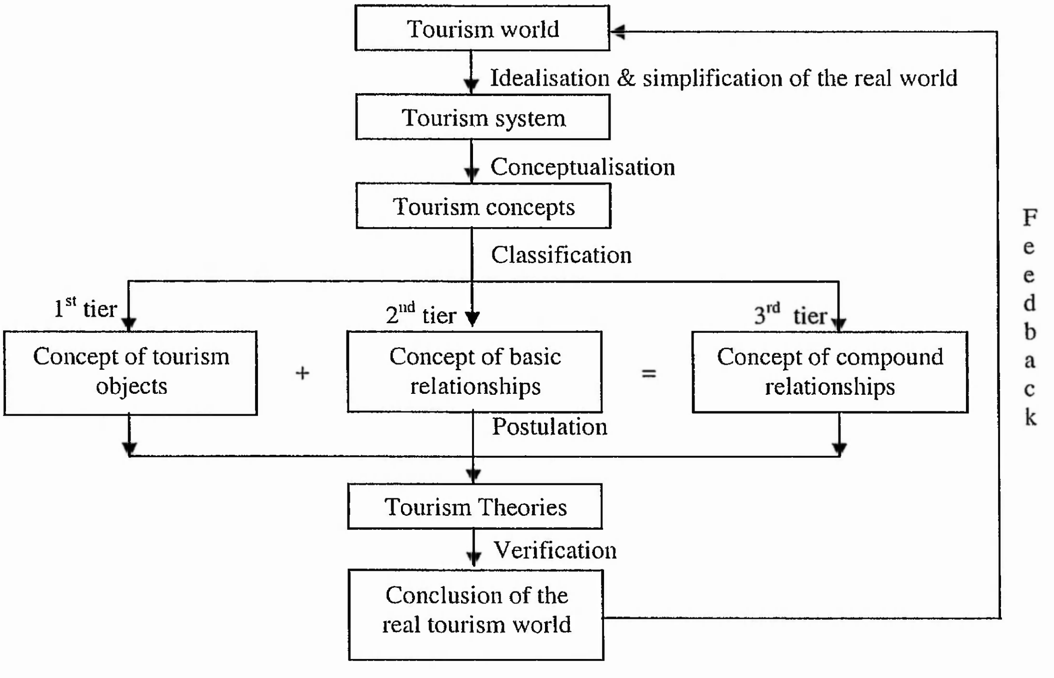
This disciplinary confusion gives rise to another dilemma in defining tourism concepts – the holistic dilemma. The problem comes from the notion that there is no unique method for assigning meaning to a term. Dann and Cohen (1991) suggested that

> *"there exists no all-embracing theory [and/or concept] of tourism, since tourism, like any other field of human endeavour, is a target field, comprising many domains and focuses, to which various theoretical [and or conceptual] approaches can be appropriately applied" (p.167).*

It is a scientific norm for researchers to employ different angles to define concepts, each with their own research purpose and emphasis. However, this situation can lead to fragmentary views of the relationships between all the elements involved in tourism studies. For example, Williams (1998) states that "the definitional problems arise partly because the word 'tourism' is typically used as a single term to designate a variety of concepts" (p.2). It is impossible to encapsulate the whole range of concepts involved in the tourism world in one single word. Therefore the second dilemma occurs – the holistic dilemma.

The understanding of the real tourism world is achieved through concepts and theories. By idealizing and simplifying the real world into analysable units, the tourism phenomenon becomes a concrete entity described by tourism concepts and theories. Tourism concepts can be divided into three types according to the functions and interrelationships between the entities concerned. These three types of concepts are in hierarchical order and they act as the basis for postulating theories and intermediaries between the real world and the world of knowledge (see Figure 2-1).

**Figure 2 - 1 Typology of tourism concepts and related functions**




The first tier of concepts in the hierarchy is used to explain and describe the objects of the tourism phenomenon. These are basic concepts, such as 'tourist' and 'destination'. The second tier of concepts is used to explain the nature of objects, such as the 'movement of tourists', 'destination choice' and 'destination image' etc. They are objects of the phenomena and conveyers of basic relationships. The highest tier of concepts is used to explain and describe intricate relationships and can be composed of concepts from the first and second tiers as well as the third tier. These concepts include 'the SDT', 'the spatial behaviour of tourists', and 'cross-cultural differences in the SDT'.

'Tourism' is a special concept in the final tier. This explains why this concept is difficult to define. It is an aggregated term that involves an understanding of many basic concepts and the complex relationships between them. On the other hand, 'tourism' is the root of tourism studies; it defines the scope and nature of all the concepts involved in this subject matter. In this sense the definition of 'tourism' falls into a self-defining dilemma.

The final dilemma of tourism conceptualisation comes from the way that tourism theories developed. Tourism concepts can be confused with tourism theories. For example, Plog's (1974) psychocentric-ecocentric model of tourists and tourist place segmentation has been interpreted by many authors as a theory. However strictly speaking, it is only a conceptual proposal, which is lacking in consistent empirical verification (Smith 1990). Concepts no matter how complex are not theories. They are 'axiomatic statements' (Harvey 1969) and can only act as the elements of theories and in the initial stage of a theory proving. Theories, on the other hand, are empirically proven relationships of concepts, and are confirmed with some certainty. Through the verification of these theories, the verity of the real world becomes accumulated knowledge.

In this verification process concepts require modification and operationalisation to fit the requirement of rigorous theories. This gives rise to the problem of operationalising tourism concepts; different adaptations and applications of concepts have been produced subjectively by researchers to suit specific research situations or approaches. Many tourism researchers employ similar terms and concepts but use different methods that may assign more than one meanings to them. The result is that one single concept can have either double or triple roles, or may be very subjective to suit different theorising. In this sense, tourism concepts can be inconsistent due to the various ways of tourism theorising. Such problem seems semantic or functional, but can be quite damaging to tourism research. In order to overcome these shortcomings, four related and complementary approaches are proposed to define the concepts of this research from a basic level to the compounded level.

### *2.2.2 Approaches used to conceptualise tourism research*

Approaches in tourism conceptualisation are varied. This diversity can be a source of confusion; it is also a strength because a single unifying theory or definition is a rarely held proposition in science, especially in social science. No phenomenon in the real world can exist completely isolated from all others. Therefore, when considering the tourism phenomenon, an understanding of the way we view it is as important as understanding how it really is. Smith (1989) states that tourism "does not have a real, objective, precise, and independent existence," but is "to a significant degree, whatever we decide it will be" (p. 31). As long as the differences in these perspectives are clear, and we are aware of the strengths and weaknesses of each approach, this diversity can lead to a comprehensive understanding of the tourism phenomenon that a single perspective cannot encapsulate. Four approaches that have been used by tourism researchers in different situations are summarised here and are used as the guiding principle on which to define the tourism concepts applied in this research. They are the systematic, disciplinary, theoretic and thematic approaches.

The first important approach is a systematic approach. The emphasis on systems for analysis may be seen as an emphasis on situations in which interactions between a very large numbers of variables are important, instead of studies in which a variable's individual functions are important. A system is a collection of components and processes, which, when coupled together, displays a behaviour as a whole. An understanding of the system can be established based on a hierarchical order. Higher understandings are derived from the solid clarification of basic principles.

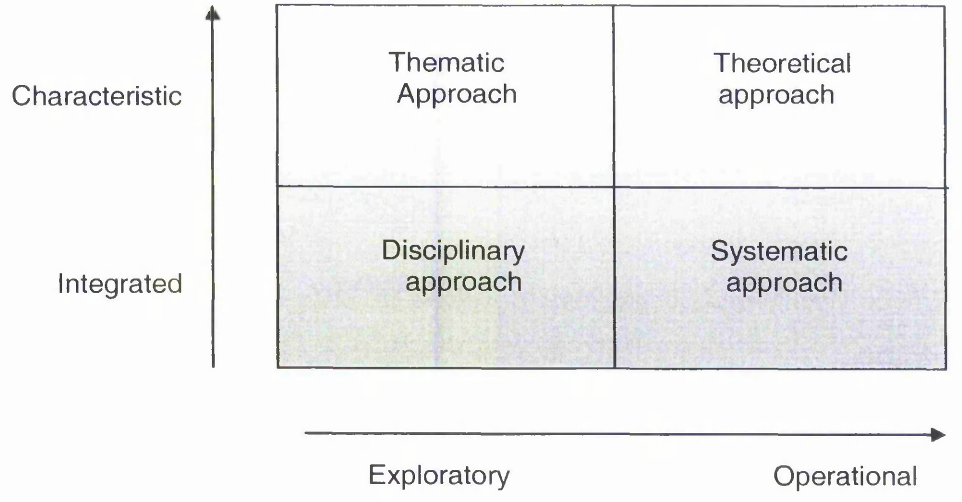
The use of a systematic approach in tourism studies has a number of advantages. It can yield insights into the structural characteristics and the complex relationships that connect the components and the processes of the system, and permits us to look at the tourism world in a holistic and dynamic perspective. It also allows us to accentuate the functioning aspects of tourism problem solving, thereby providing an appropriate operational framework within which processes can be evaluated and examined.

Moreover, the use of a systematic approach can help to clarify the communication across different disciplines, through clarifying the domains of each of its components.

The second approach is a disciplinary approach from which the state of tourism can be seen from a broader context. As discussed above, the disciplinary stance of tourism has been one source of controversy. Therefore an analysis on an interdisciplinary basis is the initial step toward conceptual clarification. The third approach is the theoretical approach, which examines some main advocates of tourism conceptualisation. Each theoretical concept represents a unique feature of the tourism world. Finally, the thematic approach indicates the major research topics and study areas of tourism.

All these four approaches are not isolated but closely related to each other and are certainly not exclusive. The clarification of their relationships also reveals their strengths and weakness in defining tourism concepts. The relationships between the four approaches can be characterised into two dimensions (see Figure 2-2). One is the integrated-characteristic dimension. The other is the exploratory-operational dimension. Disciplinary and systematic approaches are more integrated than theoretical and thematic approaches because they see tourism from a structural perspective. These two perspectives are advantageous in defining tourism concepts in a holistic way that overcomes two of the dilemmas identified above. On the other hand, theoretical and thematic approaches are characterised by the insights they provide on individual topics in tourism studies. On the other dimension, theoretical and systematic approaches are more operational because they can direct the ways of verifying the real tourism world, and therefore supporting practical research. Disciplinary and thematic approaches offer angles of perceiving the tourism world rather than concrete ways to solve tourism problems. So they are more exploratory. The framework of conceptualising tourism, especially the notion of a systematic approach, will weave through the explanation presented in the whole chapter.

**Figure 2 - 2 The relationships between different approaches in tourism conceptualisation**




## 2.3 WHAT IS TOURISM?

The term 'tourism' has been a point and a cause of debate since its advent. A coherent definition and understanding of 'tourism' is an important initial step to any further enquiries into tourism research.

According to Oxford English Dictionary (2003), tourism is

> *"The theory and practice of touring; travelling for pleasure. (Orig. usually deprecatory.) Also, the business of attracting tourists and providing for their accommodation and entertainment; the business of operating tours."*

From this simple definition, we can recognise that tourism is a complex combination with three distinctive facets. It is a movement for leisure and recreational purposes; it is a knowledge regarding this movement; and it is also an industry that is organised around this movement.

Not all the movement of people constitutes tourism; tourism must have a recreational purpose. Therefore, as Matley (1976) discussed, the characteristics of tourists' movements are purposeful and dynamic. The dynamic-static features of tourism have been discussed by many tourism researchers. It is argued that tourism in all cases involves two elements, a dynamic one - the journey - and a static one - the stay (Burkart and Medlik 1974; Matley 1976). The removal of a person away from his/her habitual place of residence to the destination is the dynamic aspect of tourism; his/her stay in another location and active or passive recreational experience enjoyed at the location is the static aspect. The purposeful feature of tourism reflects in that the removal and stay are temporary and are motivated by a search for personal satisfaction in the shape of rest, relaxation and self-improvement (Ginier 1974).

Further breaking down the concept of tourism, Clawson and Knetsch (1966) provide a tourism stage model to describe the total tourism experience in dynamic and static terms. The five stages of tourist experience are planning and preparation, travel to, the recreation experience, travel back, recall and recounting. This definition is functional, geographical and procedural. Tourism is defined as (Chadwick 1994):

> *"the field of research on human and business activities associated with one or more aspects of the temporary movement of persons away from their immediate home communities and daily work environment for business, pleasure and personal reasons" (p.65).*

Looking further at these definitions basic common elements of tourism activities with different levels of incorporation are the method, time-space and purpose of people's movement:

1) Method: usually refers to movement of people from their residence to the outside of their normal residence;
2) Time-space: temporary or short term, sometimes stipulated with maximum and minimum limits;
3) Purpose: includes leisure, recreational, business and many personal reasons;
4) People: who conduct the activity of movement;

5) Movement: a dynamic process changing location from one place to another.

Despite the practical aspect of tourism, it is also a subject matter formed by the knowledge of the tourism practice with scientific implications. For example, Faulkner and Goeldner (1998) stress this aspect of tourism:

> *"as far as the subject matter is concerned, the lowest common denominator in defining tourism research as a field of study is its preoccupation with non-permanent movements of people beyond the area that encompasses their routine activities" (p.78).*

Moreover, tourism is also an industry that is carried out on the basis of the needs of the demand and supply of tourism activities. Jafari (1977) divides the industrial features of tourism into tourists and host, the tourism business and environmental factors. Tourism is defined as:

> *"study of man away from his usual habitat, of the industry which responds to his needs, and of the impacts that both he and the industry have on the host socio-cultural, economic and physical environments" (p.8).*

These definitions are clear and indispensable. However they are 'functional' and reflect the subjective situations and purposes of the people who define them. The adoption of any formal or technical definitions of tourism is far from enough to allow an understanding of the nature of tourism. Specifically, these definitions do not explicitly explain the concept of the SDT which is relevant to this research. In order to view the issue of tourism more rigorously, it is also necessary to interpret it from those angles from which tourism features itself. The following discussion views tourism from the four approaches defined in Section 2.2.2.

### *2.3.1 Systematic approach to tourism studies*

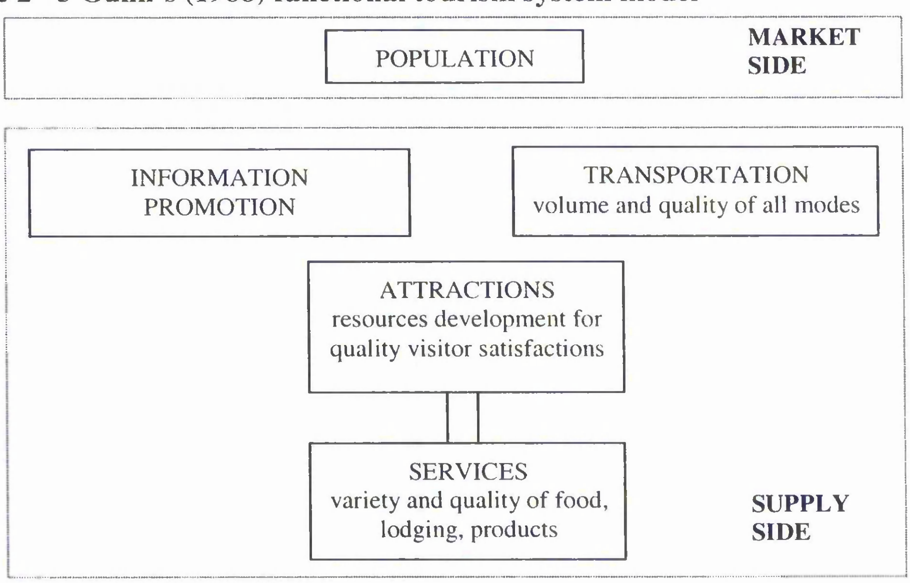
A systems approach has been put forward explicitly and implicitly by many authors in tourism studies. With the rapid development of tourism as a whole, basic and elementary methods for understanding the tourism phenomenon have became more and more inappropriate. Many authors advocate the use of system models to help with tourism conceptualisation (Jafari 1989; Leiper 1990; Liu 1999; Mill and Morrison 1985; Moore *et al.* 1995; Simmons and Leiper 1993).

A tourism system is essentially composed of tourism components that reflect basic objects of the tourism system, and links between these components such as tourists, tourists' activities and the SDT. The definitions of these components are dependent on the scales at which we conceive tourism problems. For example, tourism contains tourism geography, and tourism geography is thought to contain the SDT. Further dividing, the SDT contains some basic elements such as tourists, space and movement. SDIT is a special form of the SDT. The links between the tourism components can themselves be seen as another type of unit of the tourism system, which is higher than the basic presentation of tourism objects. These links are essential because they are the roots of structuring the tourism system and grounding the interrelationships involved. Moreover, no system can be exempted from environmental constraints. They can be viewed as a higher-order system, which enclose the tourism system, or as an external force of the internal interactions of the system. They may also be regarded as components of the tourism system itself.

Using different contextual perspectives, such as a disciplinary or theoretical one, people view the tourism system in their own ways. One type of the tourism system is proposed on the basis of a geographic depiction of tourism. It emphasises the whole travelling process involving the five basic elements of tourism – method, time-space, purpose, people and movement. A tourism system is also envisaged as containing supply and demand sides, a vision which mainly stems from economic perspective. The demand side of tourism refers to the volume and characteristics of tourists. It also introduces the perceptions, motivations, preferences, decision-making processes, and behaviour of tourists. The supply side of tourism is the institutional aspect of tourism that encompasses the tourism industry (including transport, accommodation, co-ordinators, intermediation, and government units) and the destination characteristics. In addition an environmental aspect that consists of the political, social, and economic factors, is usually put forward as a part of the tourism system or an external changing force acting on the system.

One of the main advocates of this kind of tourism system is Gunn (1988). He suggested a functional tourism system that emphases the practical utility, or industrial orientation of the system. This functional model categorises all the tourism elements into five interrelated components and two broader groups: the supply and market side of tourism. The market side of tourism concerns population and the supply side of tourism concerns transportation, attractions, services and information/promotion. Gunn (1988) uses the following figure to illustrate the functional tourism system (see Figure 2-3).

**Figure 2 - 3 Gunn's (1988) functional tourism system model**




Source: Gunn (1988: 15)

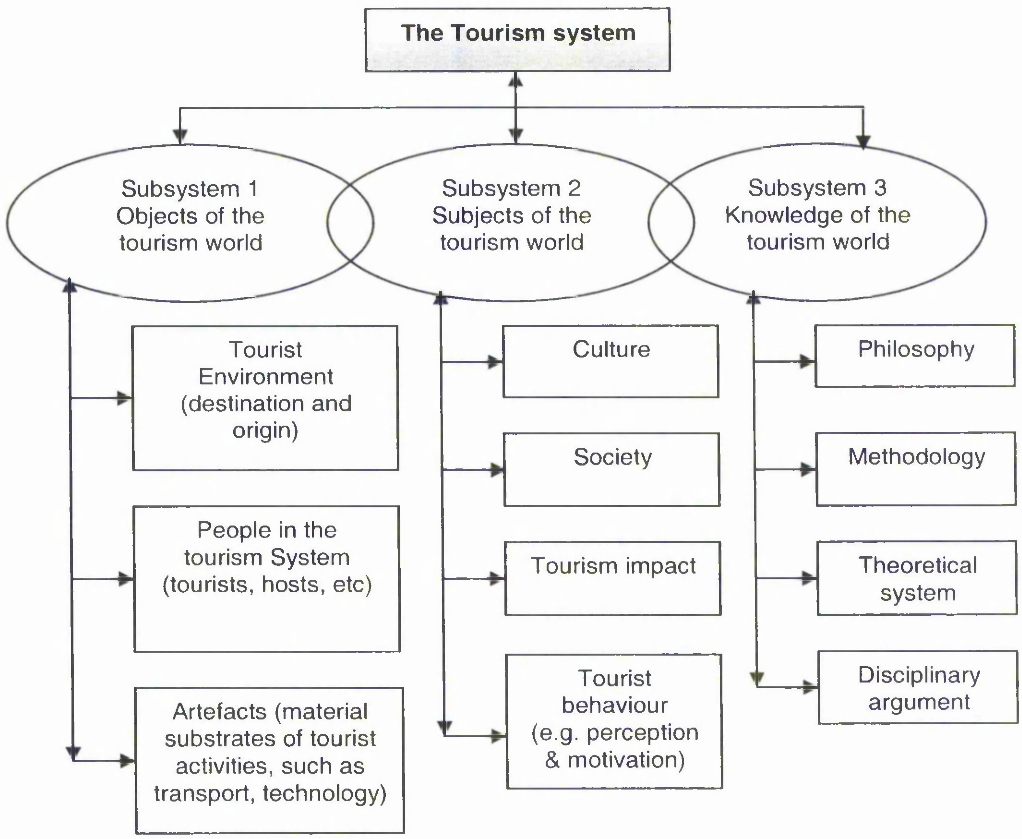
One obvious limitation of this tourism system is that it does not depict the nature of tourism from the perspective of a field of knowledge. At heart, system thinking is much more a perception of the real world rather than the 'real world' itself. In this sense, the tourism system also needs to be viewed as an area of interest.

Popper and Eccles (1977) divide the world into three parts: objective reality, subjective appraisal and objective knowledge. The criterion of the division is the type of knowledge we learn from the world. Using the criterion of knowledge, Grano (1981) and Hall and Page (1999) have categorised tourism studies into three parts; knowledge study, action study and culture study. Developing these views into a tourism system, it can be seen that a tourism system has three sub-subsystems based upon the dimensions of knowledge and study objects (see Figure 2-4). Subsystem one comprises the objects of the tourism system including all the objects of the tourism world, such as tourists and tourism related populations. It also contains the tourist environment and tourist related materials.

Subsystem two encompasses the subjective aspect of the tourism system that coexists with the objective tourism world, but is above system one. Because this system contains the element of human thought and human entities such as culture, society and tourist behaviours. Above this is subsystem three that comprises the knowledge extracted from the tourism world; it is the contribution of the tourism system to the world of knowledge. It includes philosophy, methodology and the theoretical frameworks in tourism studies.

In establishing a tourism system, we are guided to approach tourism with a point of view in which the nature of tourism can be characterised from an integral perspective. The tourism system is also an open and dynamic system. Through feedbacks, the three subsystems link together. In subsystem three, knowledge is accumulated on the basis of the changing regularities of subsystem one and two. Conversely, it can offer directions for further understanding and guide changes in the other two subsystems. The three-system concept also has functional implications; it provides a conceptual and methodological framework, and guides the empirical investigation in tourism studies.

**Figure 2 - 4 The tourism system and its subsystem**




Source: Based on Popper and Eccles (1977).

## *2.3.2 Interdisciplinary approach to tourism studies*

It is clear that there is a considerable variation in the explanation of tourism concepts that derives from a variety of inputs from different more established disciplines and specialisms. Over the years, the subject matter of tourism has evolved through time as more and more areas are abstracted into the paradigm of tourism. Consequently the tourism phenomenon is now recognised as a highly interdisciplinary field (Lundgren 1984). These related disciplines are the paradigm in tourism studies and they act as a strong pull in tourism studies as an independent subject. Tourism analysis can be directed either towards any of the integral elements of the social phenomenon or towards any combination thereof.

An academic discipline is a structure of knowledge specific to a subject matter with a group of social organisations contributing to this knowledge in various ways. It encompasses a range of elements: a community, a network of communities, a tradition, a particular set of values and beliefs, a domain, a mode of enquiry and a conceptual structure (King and Brownell 1966). An interdisciplinary approach is a way to view the subject matter from a highly integrated perspective. It is a synthesis created between different disciplines so that a more holistic understanding and way of investigation can be achieved. The intrinsic quality of the tourism phenomenon only allows for an interdisciplinary approach so that it can draw on other disciplines in order to develop theoretical and empirical roots (Faulkner and Goeldner 1998; Graburn and Jafari 1991; Gunn 1994).

However, it is also important to bear in mind that research using an interdisciplinary approach can bring potential challenges in defining tourism. These mainly stems from the different bodies of thinking across the disciplines, which in turn leads to diversified understandings, definitions, concepts and descriptions of tourism. It can be dangerous to borrow concepts and theories across disciplines if inference across disciplinary boundaries is not carefully grounded (Court 1991; Roper and Brookes 1999). Some fundamental disciplines to tourism include economics, sociology, anthropology, geography, psychology, and business studies.

An economist's view of tourism emphasises the industrial character of the tourism phenomenon, mainly the demand and supply side of the tourism industry. The sociology of tourism mainly explains the social cultural changes, tourism impacts, and meanings of the tourist experience (such as Cohen 1972, 1979a, 1984; Dann 1991; Urry 1991; Pearce 1982). Anthropological studies of tourism explain the broad-scale impact of the cultural interchange on tourism development, such as the impact of tourism on the host community (such as Campbell 1967; McKean 1978; Nash 1978; Pearce 1982; Pi-Sunyer

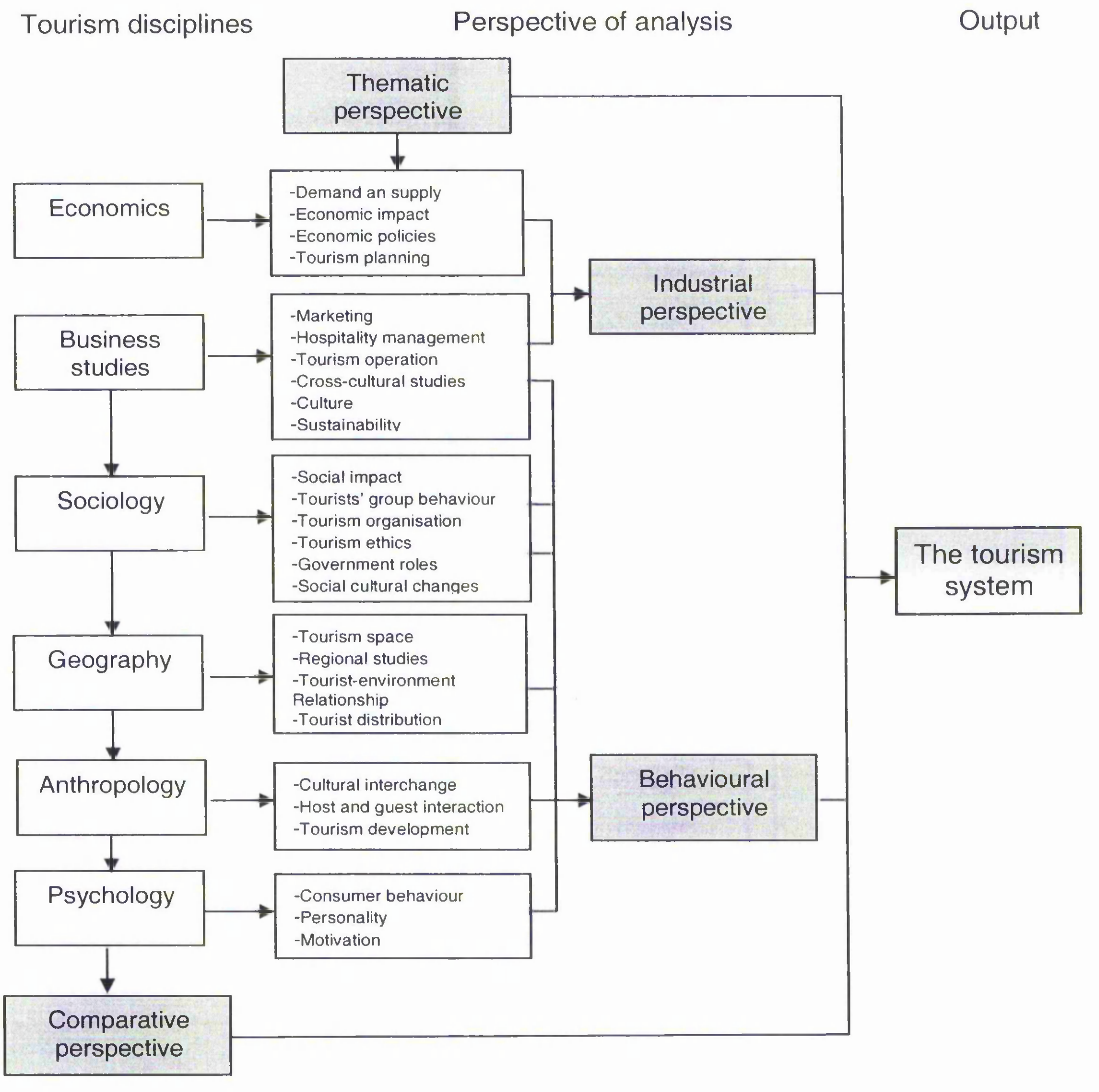
1977; Shackley 1996; Turner and Ash 1975). Business studies of tourism are closely tied in with the concept that tourism is an industry. They include marketing strategies, tourism management, consumer behaviour, etc. Behavioural concepts lie at the heart of marketing theory which concerns how tourists make their decisions and the subsequent outcomes of these decisions on the marketing process. Psychology considers the social and cultural aspects of tourists; the specific consumption pattern of tourists in their travel, tourists' behaviours and the determinants of their behaviours in the context of socio-cultural environment.

The range of disciplinary perspectives used to conceptualise tourism is broad. However one distinct feature of tourism is its geographical characteristics. The start of tourism geography studies dates back to about 70 years. It was not until the early 1960s that geographical studies of tourism started to appear frequently in the literature (Pearce 1979). In the recent decades the rapid development of tourism as a phenomenon and its increasing socio-economic consequences have brought more attention to the discipline. Warszyñska and Jackowski (1986) state that tourism geography is a geographic sub-discipline. The research purpose of tourism geographers is to create theoretical foundations for tourist movement, without neglecting social, environmental or economic factors (p.656). In Section 2.4, the special contribution of tourism geography in understanding tourism and its relevance to this research will be further elaborated upon.

### *2.3.3 Theoretical perspectives on tourism studies*

Three theoretical perspectives can be summarised and they have been frequently discussed in tourism literature. The significance of these three angles is that any one single perspective cannot fully reveal what real tourism is, but putting them together, these collective abilities to present a whole picture of tourism is superior to that offered by any one perspective on its own. They are the behavioural, industrial and comparative perspectives. The relationship between different disciplines and perspectives in understanding tourism is illustrated in Figure 2-5.

**Figure 2 - 5 Different ways of understanding tourism**




### 2.3.3.1 Behavioural perspective

A behavioural emphasis in tourism studies is not a new conception; and has benefited from related parent disciplines, such as psychology and geography. For psychologists, this approach is underpinned by the notion that the mind is seen as a crucial variable in the explanation of behaviour. For geographers, a behavioural approach is the geographical expression of behaviourism, which aims to replace the simple, mechanistic conceptions that previously characterised people-environment relationship with new versions that explicitly recognise the intricate influence of human behaviour and knowledge on their spatial phenomena. To many behavioural approach constitutes a point of view rather than a rigorous paradigm (Walmsley and Lewis 1993: 3-7). From this perspective, the behavioural angle of viewing the tourism phenomenon is a key to understanding the concept of tourism, which is full of human involvement. The lack of a behavioural view has produced an obstacle in understanding tourism and its sub-concepts. Mansfeld (1990) maintains that one of the problems encountered in the study of the SDT is that the behavioural response resulting from the decision-making process of each tourist is not accounted for. Therefore, in order to reach higher levels of understanding of the SDT an investigation must be conduced into the process that generates them, i.e. the behavioural root of the tourism phenomenon. Gradually, tourism researchers have adapted this view and incorporated it into their perceptions of tourism. For example, Leiper (1990) defines tourism as

> *"the set of ideas, the theories or ideologies, for being a tourist, and it is the behaviour of people in touristic role when the ideas are put into practice (p17)".*

Simmons and Leiper (1993) simply state that tourism is the behaviour of tourists. Moore *et al.* (1995) have employed a behavioural approach to examine the concept of tourism in comparison to the concept of leisure. They conclude that a large amount of tourism studies can be understood based upon the ground of the tourists' individual behaviour. The behavioural emphasis in tourism studies is basically a philosophical shift in nature. It stresses that human beings' minds are either deterministic or mediating in their relationship with their environment. This has introduced far-reaching changes to the methodological concerns involved in modelling mind, perceptions and overt behaviour of people involved in the tourism phenomenon.

### 2.3.3.2 Industrial perspective

Another important theoretical perspective in understanding tourism is the "industrial" perspective on tourism. Some definitions of tourism directly indicate the industrial nature of tourism. One definition from the *Report of the Tourism Sector Consultative Task Force* (Powell 1978) states that tourism is both an industry and a response to a social need: society's adoption of travel as part of a lifestyle. Tourism products include all the elements that combine to form the tourism consumers' experience and exist to serve their needs and expectations.

Likewise, in his analysis of policy and planning means of tourism, Smith (1988) describes tourism as "the aggregate of all businesses that directly provides goods or services to facilitate business, pleasure and leisure activities away from the home environment" (p. 181). This statement concerns the pragmatic features of tourism, and tourism is clearly viewed as an industry in its own right or simply as the result of the overlap of various other industries rather than a discipline.

However some people propose that the inherent industrial nature of tourism is problematic. The tourism industry itself is broader and unique in comparison to other industries. Also, the tourism industry does not have a discrete image like many other industries, partly because of its heterogeneity and many of its components are largely composed of small businesses. The industrial view of tourism might be a problem if it is viewed with an intention to delineate tourism, because tourism is too complex to delineate. From this point, combining the behavioural nature of tourists, Williams (1998) states that:

> *"... tourism in practice is a nebulous area and the notion that it may be conceived as a distinctive industry with a definable product and measurable flows of associated goods, labour and capital has in itself been a problem... Tourism is not, therefore, an industry in any conventional sense. It is really a collection of industries which experience varying levels of dependence upon visitors, a dependence that alters through both space and time"(p.6).*

Tourism should be considered as a whole scope of social, behavioural and economic phenomena including activities, experiences, processes and institutions related to people who travel through time and space. Industrial form is its one practical character with definable products and distinctive position relating to tourism as a whole.

#### 2.3.3.3 Comparative perspective

Tourism, recreation and leisure are closely associated. The primary principle of the three phenomena is that they are interrelated concepts, largely overlapping in theories, methodologies, and conceptual frameworks. However the terms of tourism, recreation and leisure are fraught with semantic confusions; sometimes it is difficult to distinguish one from the other. Crompton and Richardson (1986: 38) discuss the differences between tourism and recreation considering that tourism and recreation have public-private division. Tourism is treated as a commercial economic phenomenon rooted in the private domain, recreation is viewed as a social and resource concern, rooted in the public domain.

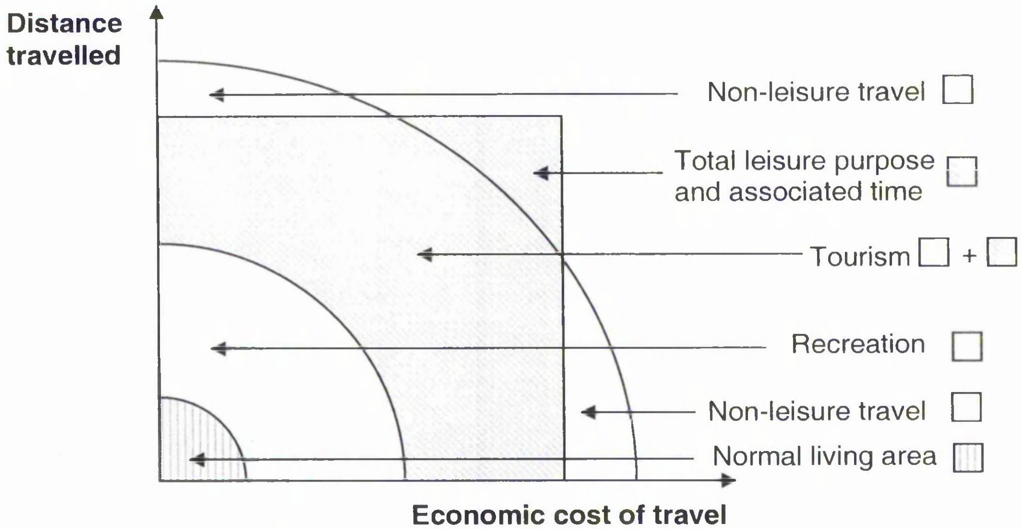
On the basis of the different views of tourism research, some key features of tourism, recreation and leisure can be identified. The first feature is the purpose of these three activities. Mitchell and Smith (1989) state that the differences between them are more by degree than by kind. All the above activities are for leisure purposes but to varying degrees, and all contain a process to fulfil these desires. The term 'leisure' encompasses activities in which individuals may indulge in of their own free will, either to rest, amuse themselves, to add to their knowledge and improve their skills or increase their voluntary participation in the life of the community after discharging their professional, family, and social duties (Appleton 1974: 63). Recreation is defined as an activity that has no obligation attached to it; it is a part of leisure-time activities. Tourism activities are usually accompanied by a recreation and leisure purpose but involve more motives than recreation and leisure would, such as business and education purposes.

The second feature is the temporal element of the three activities. All of them relate to the use of spare time, i.e. the discretionary time people have except from their work. Both recreation and tourism use leisure time, but recreation and leisure do not necessarily imply travel. If people's activities can be divided into spare-time activities and the opposite – non-spare time activities, then the difference between recreation, tourism and leisure is a difference in typology under the same category of spare-time activity. Most of the three activities happen in leisure time. However tourism can generate activities that do not take place in leisure time, such as business travel; these activities can be categorised as non-leisure travel.

The third key feature is the geographic distance implied in the three terms. The differences between the three activities are presented in their zone of activity. Recreation and leisure tend to take place after work or school, during the week or weekends, and often occur in close proximity to one's primary residence. Tourism, on the other hand, happens much less frequently, usually during holiday or vacation periods, and involves travel of some considerable distance with more temporal and economic involvement (Clawson and Knetsch 1966).

From these differences, we obtain the final distinguishable factor, the economic cost of travel. Due to the difference between distance and spare-time spending, the costs is occurred from these three activities are apparently varied. Leisure and recreation usually involve less economic commitment than tourism. Thus they are easier to decide on and incur less preparation, and accordingly, travel behaviours are different as well. Figure 2-6 illustrates the relationships between leisure, recreation and tourism with respect to their objective, temporal, geographical, and economic differences.

**Figure 2 - 6 Differences between tourism, leisure and recreation**




Note: This figure represents the relationships and major differences between tourism, recreation and leisure mainly in the three dimensions: distance travelled, economic costs of travel and the purpose and amount of leisure time used. The third dimension is also incorporated in the first two dimensions. Because the time used to travel for recreation is shorter, so the distance and cost spend on recreation tend to be lower than those of tourism. Tourism and recreation all happen within the leisure time, however they are overlapping rather then completely exclusive. For example, tourism includes recreation activities, tourism also includes activities which is not using leisure time, such as business and educational travel.

### *2.3.4 Thematic perspectives on tourism studies*

Tourism studies has been progressing rapidly and there are some major trends that highlight the key directions in tourism studies. One of these themes is economic psychology that is the study of consumer behaviour in their economic activities, such as their consumption of products and services. This theme acts as the cornerstone in tourism studies. Its applications in the field of tourism studies include the studies of consumer travel behaviour, choice model, decision-making process, perception and motivation of tourists, and so on.

The second important theme is origin and destination linkage studies. One of the most important and challenging issues affecting travel and tourism marketing is to understand where the tourists come from and what tourists' travel patterns are. Travel patterns are broad areas for travel research ranging from outbound/inbound travel to the issues of travel expenditures, uses of travel information, choices of destinations and demand forecasting. This is a theme that is closely related to the discipline of geography which studies tourist behaviour in a context of a tourist and space relationship.

Strategic marketing is another important theme. Tourism is not only an academic undertaking, it also has important practical implication in guiding the development of the tourism industry. Strategic marketing is the study of the tourism industry and its relationship to developing tourism as a whole. It aims to understand the supply side of the tourism market and how to organise this aspect of tourism production. This theme involves topics about tourism organisations, travel packaging, destination planning and marketing, national tourism development, etc.

Impact analysis is a traditional topic in tourism studies, such as economic and social impacts, but they are now adding new substance, such as the study of environmental impacts of tourism on both tourist generating and hosting countries. In the theme of generic tourism studies, recent major concerns relate to newly emerged types of travel, such as business and educational travel, event tourism, cultural tourism and sustainable tourism. Although relatively new, these tourism types have an increasing significance. Especially sustainable tourism, which is with the rising awareness of environmental impacts on tourism development, has become a topic in its own right.

As with other social sciences, the impact of technological advances on tourism is one of the most pertinent issues in tourism studies. In tourism, technology pushes and enhances the development of tourism research and the tourism industry. This has generated many new topics including information disseminating, tourism networking, hotel booking, tourism training and education, tourism Internet marketing, and so on (Hu 1996).

## 2.4 GEOGRAPHICAL VIEW OF TOURISM STUDIES

Tourism with its focus on people travelling through time and space is essentially a geographical phenomenon, and this entails geography that has a key role to play in tourism studies. In this section and the following section, the meaning of tourism geography and the SDT will be examined. Down the conceptual ladder, the concept of tourism geography and the SDT can be viewed as concepts of basic relationships. This has links to another category of concepts – the concepts of objects, such as tourist destination and tourist space. From these explanations, their role in constructing more complicated concepts and directing this research can be exposed.

### *2.4.1 Definitions of tourism geography*

The birth of tourism geography as a legitimate sub-discipline can be dated back to the 1920s in the United States (Brown 1935; Mitchell and Murphy 1991). Despite some limitations of the geographical study of tourism, with respect to its subject matter, conceptual and theoretical bases, tourism studies in the field of geography has been growing rapidly and attracting more and more attention from broader range of disciplines. The linkages between tourism research and its parent disciplines are varied, but as a more mature and longer-established discipline, the contribution of geography to tourism studies has been unparalleled. Tourism research includes aspects of nearly every major division of systematic geography (Murphy 1963). The difference between geography and other disciplines in studying the tourism phenomenon is its bias in space and place. This is also the essential tie between these two fields of studies. They fundamentally answer the question of 'where'.

The affinity between geography and tourism studies goes beyond their common interest in spatial phenomena (Faulkner and Goeldner 1998). There are two major dimensions in which geography has exerted a great influence on tourism studies – conceptual and theoretical, and methodological. The conceptual and theoretical contributions of geography have been in its assistance and inspiration for tourism to develop its own domain, scope of study and system of questioning method. The second dimension is the methodological contributions that ranges from quantitative and qualitative methods to the philosophical underpinnings of these approaches. Tourism studies has adapted numerous research results and research methods into its own body of knowledge, such as the transference of the gravity model (Bell 1977; Malamud 1973). Table 2-1 summarises the approaches in geography and its relationship with tourism.

Bird (1989: 218) has suggested some important criteria to explain geography. Relating these criteria to tourism studies, four main perspectives can be used to understand tourism geography. The first perspective is the relevance to subject matter. Berry (1964) states that the "geographical point of view is spatial... the integrating concepts and processes to the geographer relate to spatial arrangements and distributions, to spatial integration, to spatial interactions and organisation, and to spatial processes" (p.3). Because tourism involves travel across space, this spatial implication intimately links tourism with geography. In specific, for tourism geographers, the environment of the tourism activity, the social modification of the natural resources and the man-environmental interactions are their major concerns (Warszyñska and Jackowski 1986).

The second perspective is the scale of investigation. In geography, processes, patterns, and positions of the physical and cultural environments are examined within two wide-ranging aspects, either regional or systematic. Regional geographers attempt to discover the nature and characteristics of a particular region or to differentiate between regions. On the other hand, systematic geographers concern themselves with the orderly examination of individual systems or topics (e.g. tourism and recreations) (Mitchell and Murphy 1991: 58). Tourism geography can be seen as a system with a regional perspective. Tourism objects are organised in geographical orders; therefore the scales of investigation are essential in explaining different activities in tourism geography.

The third perspective is open-endedness. Open-endedness relates to both environment influence and continuous evolution. In this notion, evolutionary and time perspectives are important considerations in geography, and the same applied to tourism studies. It takes a synthesising perspective of geography to study tourism in a broader time-space context. Models developed include tourism destination life-cycle concepts, the evolution of tourism types such as mass tourism, demand changes in tourist products and social trends of tourism development.

## Table 2 - 1 Approaches to geography in tourism and leisure studies

| Approach | Key Concepts | Exemplar studies |
|---|---|---|
| Spatial analysis | Positivism, locational analysis, maps, systems, networks, morphology | • Spatial structure: Fesenmaier and Lieper 1987<br>• Spatial analysis: Smith 1983; Wall *et al.*. 1985; Hinch 1990<br>• Tourist flows and travel patterns: Williams and Zelinsky 1970; Corsi and Harvey 1979; Forer and Pearce 1984; Pearce 1987a, 1990, 1993, 1995; Murphy and Keller 1990; Oppermann 1992a<br>• The gravity models: Malamud 1973; Bell 1977<br>• Morphology: Pigram 1977<br>• Regional analysis: Smith 1987 |
| Behavioural geography | Behaviourism, behaviourism, environmental perception, diffusion, mental maps, decision-making, action spaces, spatial preference | • Mental maps: Walmesley and Jenkins 1992b; Jenkins and Walmsley 1993<br>• Environmental cognition: Aldskogius 1977<br>• Tourist spatial behaviour: Carlson 1978; Cooper 1981; Debbage 1991 tourist behaviour: Murphy and Rosenblood 1974; Pearce 1988a<br>• Environmental perception: Wolfe 1970 |
| Humanistic geography | Human agency, subjectivity of analysis, hermeneutics, places, landscape, existentialism, phenomenology, ethnography, lifeworld | • Placelessness of tourism: Relph 1976<br>• Historical geography: Wall and Marsh 1982; Marsh 1985; Towner 1996 |
| Applied geography | Planning, remote sensing, Geographic Information Systems (GIS), public policy, cartography, regional development | • Planning: Murphy 1985; Getz 1986; Dowling 1993, 1997; Hall *et al.* 1997; Hall 1999<br>• Regional development: Coppock 1977a, b; Pearce 1988b, 1990, 1992a<br>• Tourism development: Pearce 1981, 1989; Cooke 1982; Lew 1985; Murphy 1985<br>• Indigenous peoples: Mercer 1994; Butler and Hinch 1996; Lew and van Otten 1997<br>• Rural tourism and recreation: Coppock and Duffield 1975; Getz 1981; Glyptis 1991; Getz and Page 1997; Butler, Hall and Jenkins 1998<br>• Urban tourism and recreation: Ashworth 1989, 1992; Law 1992, 1993, 1996; page 1995; Hinch 1996; Murphy 1997<br>• Health: Clift and Page 1996<br>• Destination marketing: Dilley 1986; Heath and Wall 1992<br>• Place marketing: Ashworth and Voogd 1988; Madsden 1992; Fretter 1993<br>• Public policy and administration: Cooper 1987; Pearce 1992b; Jenkins 1993; Hall 1994; Hall & Jenkins 1995<br>• Tourism impacts: Pigram 1980; Mathieson and Wall 1982<br>• Destination life cycle: Butler 1980; Cooper and Jackson 1989; Debbage 1990<br>• Attractions: Lew 1987<br>• GIS: Kliskey and Kearsley 1993<br>• National parks: Nelson 1973; Olwig and Olwig 1979; Marsh 1983; Calais and Kirkpatrick 1986; Cole *et al.*. 1987; Davies 1987; Hall 1992; McKercher 1993c<br>• Heritage management: Gale and Jacobs 1987; Lew 1989; Ashworth and Tunbridge 1990; Hall and McArthur 1996<br>• Sustainable development: Butler 1990, 1991, 1992, 1998; Pigram 1990; Ashworth 1992; Cater 1993; Dearden 1993; McKercher 1993a, 1993b; Cater and Lowman 1994; Ding and Pigram 1995; Murphy 1994; Mowforth and Munt 1997; Hall and Lew 1998 |
| Radical approaches | Neo-Marxist analysis, role of the state, gender, globalisation, localisation, identity, post-colonialism, postmodernism role of space | • Political economy: Britton 1982; Ley and Olds 1988<br>• Social theory: Britton 1991; Shaw and Williams 1994<br>• Semiotic analysis: Waitt 1997<br>• Place promotion and commodification: Ashworth and Voogd 1990a, 1990b, 1994; Kearns and Philo 1993; Waitt and McGuirk 1997; Chang *et al.* 1996; Tunbridge and Ashworth 1996<br>• Cultural identity: Squire 1994<br>• Gender: Kinnaird and Hall 1994 |

Source: Hall and Page (1999: 12)

The next perspective is approaches in exploring tourism geography. Three major approaches are widely applied. They are the functional, the formal approach and the historical-genetic approaches that operate at different analytical levels (Bird 1989). At the lowest level is the formal approach that is a group of methods for describing the locational phenomena of tourism, such as physical landscape and visible anthropogenic forms that together constitute the formal structure of tourist travel (Warszyñska and Jackowski 1986).

At the higher level, the functional approach encompasses methods for defining the subject and interrelationships between the object of travel (such as tourists) and its subject (such as tourist space). Methods include the hypothetic-deductive and the behavioural method. The hypothetic-deductive method refers to the scientific way of understanding the tourism phenomenon. Behavioural geography is regarded as a perspective that emphasises the importance of human involvement and uncertain factors in affecting their spatial choices (Bird 1989; Golledge and Stimson 1987).

The emergence of behavioural geography has largely shaped modern geographical studies and influenced tourism studies in the aspects that, not only provide a framework for tourism to develop its own research platform, but also affects tourism research in its philosophical direction. Quite clearly then, tourism geography is essentially a behavioural subject concerned with the spatial dimensions of the tourism systems. Tourism researchers are not satisfied to analyse spatial patterns isolated from the behavioural components; they are more concerned with identifying the processes that produces such patterns.

The third approach in tourism studies is the historical-genetic approach. Using this approach, tourism studies examines the divergences of the encounter between formal structures and functional structures, and the obstacles and adjustment of these divergences (Warszyñska and Jackowski 1986). Although tourism and geography are closely linked together, tourism has gradually established its own system and framework for formulating its problems. Departing from the four perspectives, in the simplest terms tourism geography can be understood as a study of spatial relationships between motivated human beings and physical phenomena on the surface of the earth.

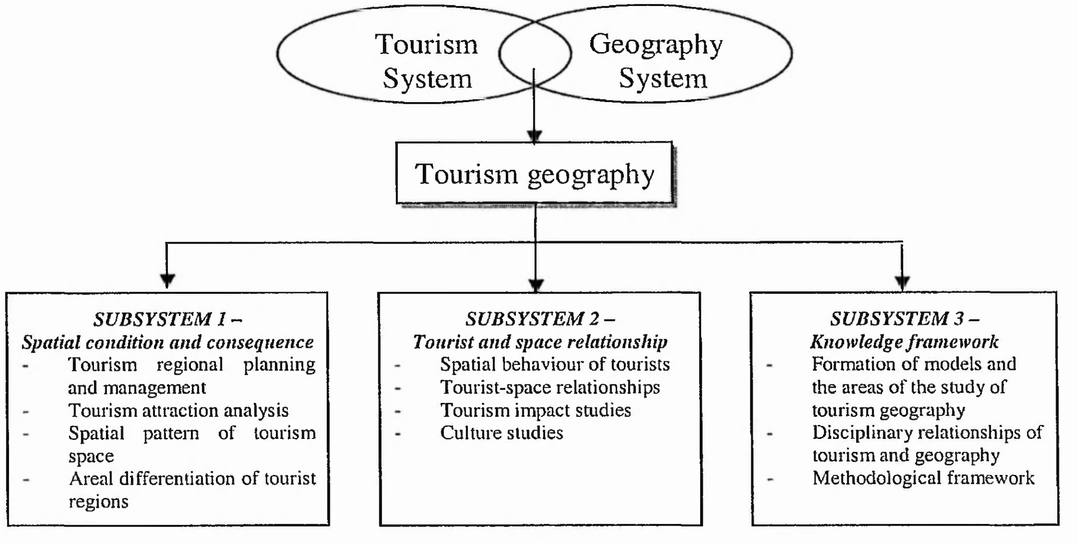
### *2.4.2 Systematic approach to tourism geography*

The use of a systematic approach has been expanding geography and many other parent subjects on tourism studies. Leiper (1979) maintains that from a geographical point of view, tourism consists of three major components: the countries of origin of the tourists or generating areas; the tourist destinations themselves; and finally the routes travelled between these two sets of locations. Others have suggested similar sort of systems for their specific research purposes. Summarised by Mitchell (1994), there are two types of systems that are commonly used in studies of tourism geography. One is the system of demand-supply-linkages (Ullman 1956; Mitchell 1994). Tourism demand is defined as "an expressed but unattained desire to travel to some other place and to participate in some leisure or recreation activity or activities" (Mitchell 1994: 199). Tourism supply has two types. One is the commercial sector for supplying tourism goods and services. The other is the public sector, which supplies tourism goods and services, but is not benefit-oriented. Linkages refer to the connection between the space of supply and the space of demand.

The second system is to view the tourism landscape as consisting of three entities: purpose, structure and distribution. The three entities are inextricably interlocked and interrelated (Mitchell 1994: 199). This system assumes that there is a fundamental reason for tourists to travel that is determined by many social and behavioural factors. This purpose affects both the structure and the distribution of tourism landscape. The structure of the tourism system is concerned with the organisation of individuals and/or groups of tourists on the basis of some touristic and environmental criteria in order to match their characteristics with the most appropriate tourism products (normally tourism destinations), facilities or activities. The distribution of tourism sites and facilities is another important entity of this system.

These systematic views of tourism geography provide frameworks in which the studies of the spatial relationships between tourists and spaces and the special features of tourism geography can be described and operationalised. The systematic view helps to solve tourism problems that cannot be understood with a narrow perspective of either tourists or location, but only when they are integrated together. This view is on a par with the systematic view of the concept of 'tourism' (refer to Section 2.3.1), where it is viewed as consisting of three worlds. Tourism geography can be seen as a subsystem of the third world, which is not only a functional component of the whole system, but also has its own disciplinary identity (see Figure 2-7).

**Figure 2 - 7 Tourism geography system and its relationship with the tourism system**




One important subsystem is the spatial condition and spatial consequence system. This system is equivalent to the objective world of the tourism system. The spatial conditions for tourism geography are the evaluation of the natural and cultural environment for tourism. To tourism geographers, the physical environment is the totality of tourism activities, and they are concerned with objects such as tourism-specific social and technical infrastructure, and the accessibility of the tourism areas. The spatial consequences of tourism are the consequence of individual choices of location and area; the relations between the areas where the requirement arises and those where it is met; the relations within spatial recreation systems; and the development of various types of tourism locations (Benthien 1984). As mentioned in Section 2.4.1, the emphasis of behavioural geography is on human factors in affecting spatial patterns and relationships. The study of these factors belongs to the third component of the tourism geography system that is reflected in the subjective world of the tourism system.

## 2.5 WHAT DOES THE SDT MEAN?

The study of the SDT is one of the major foci of tourism geography. However the meaning of the SDT remains indistinct. This problem is similar to the problem adhered to the conceptualisation of tourism, and is actually more unsettled than the concept of tourism. Many researchers have investigated the SDT; however they seem to treat SDT concepts at their face value without bothering to define them, and most of them simply investigate the issue without addressing the concepts. Also, the term 'tourist distribution' has also been used interchangeably with some similar concepts, such as 'tourist flow', 'travel pattern', 'travel itinerary' and/or 'destination choice'. For example Oppermann (1995: 57) has used trip itineraries to describe the travel patterns and tourist flows which are associated with multi-destination travel. Pearce (1987a: 1-20) describes the distribution analysis as an origin-linkage-destination framework. He describes two main areas of study within the field of intra-national travel flows. One is port of entry/port of departure, and places visited and routes followed. Oppermann (1992a) has suggested two main components of intra-national travel flows. They are the movements of the tourists between different locations and their stays at these locations, or the dynamic and the static elements of intra-national tourist flows.

Both of the two researchers used 'tourist flows', but what are 'tourist flows'? Did they actually study the same topic? What are the relationships between the SDT and tourist flows? In their articles, the depictions of international tourist flows are not strict conceptualisation, they are only suggestions of the study areas in the destination-tourist-origin relationships. They add more confusion to the group of interchangeable concepts of the study of the SDT. Unless these terms are broken down into more meaningful concepts, the analysis of the SDT will inevitably lack penetration.

The systematic approach, which has been used to define the other key concepts, can be used here to tackle this issue. The SDT basically deals with the spatial movement of tourists that normally involves four essential elements – tourists, origins, destination and ties. These studies fundamentally answer the question of where tourists choose to spend their holiday; and furthermore explain how many, why and in what way they make these choices. In answering these questions the framework of the study of the SDT suggests an effort to integrate some basic compounded theories and concepts. The following part proposes a framework for the study of the SDT based upon the two broader concepts - tourism and tourism geography.

### *2.5.1 The tourist space*

Tourist travel is intimately connected with space. The ideology of locality and space are central to tourism studies because they are the physical determinant and influence on behaviour. The relationship between space and place is subtle. Tuan (1977) has given a vivid explanation of the differences and linkages between them. Space is a special kind of object with a physical value. It assumes a frame specified by the ability to move. Movements are often directed toward, or repulsed by, objects and places that define space and give it a geometric personality. Genereux *et al.* (1983) also summarise that the internal representation of the meaning of a space can be thought of as involving at least three distinct sorts of knowledge: knowledge about its objective attributes, knowledge about the behaviours that occur there and knowledge about its effective quality. Hence space can be variously experienced as the relative location of objects or places, as the distances and expanses that separate or link places, and as the area defined by a network of places (p.12-17).

In tourism studies, the analysis of tourism space has been affected by the disciplinary trends in geography. In brief, tourism researchers think that tourism space is not only an independent geographic object for tourism activities to happen in; it is also a part of a spatially grounded physical, social and behavioural entity. It exists as the context for intentionally defined objects or events (Aldskogius 1974, 1977; Mansfeld 1990; Relph 1976) and is shaped by social and cultural features. These explanations of tourism space imply that certain behaviour occurs only in certain places.

Aldskogius's (1977, 1974) explanation of tourism space emphasises its subjectivity. By this criterion, tourism space is divided into 'action space' and 'activity space'. Action space refers to the aggregate knowledge that an individual has about a place. It is a subjective evaluation by individuals of the utility of the tourism space. Activity space refers to the aggregate spatial pattern of spaces and areas tourists have visited. Although they embody the physical existence of the tourist environment, they are treated as the result of tourist travel.

The constraint of this classification lacks considerations of the objectivity of space that exists beyond behavioural influence of people. Adding this point, Mansfeld (1990) divides tourism space into three types – actual space, functional space and perceived space. Actual space is the tourist area that accommodates tourism activities within clear geographical boundaries. It is characterised by its location or region and physical endowment. Functional space separates the actual space into generating and attracting areas i.e. tourism origin and tourism destination, and a transport medium linking them together. This division is also socially, culturally and economically constructed because the social, cultural and economic factors shape and are shaped by the physical landscape. Mansfeld (1990) states that functional space has dominated the studies of tourist flows because it accommodates all the characteristics of both the generating and attracting areas of tourism space which take part equally in shaping the emerging patterns in tourist flows.

The last explanation of space is perceived space, which emphasises the behavioural aspect of space. It means, despite its physical and functional character space is also a result of tourists' mental process. The meaning of tourism space is subjectively defined by tourists, and therefore its value and nature are largely dependent on its viewers. This tourist space reflects tourists' perception and image of that space of which the level and quality are determined very much by the socio-economic and cultural statutes and personal values of tourists (Mansfeld 1990; Miossec 1976; Murphy 1985). Hudson (1998) has stated,

> *"[localities] are places that have come to have socially endowed and shared meanings for people that touch on all aspects of their lives and that help shape who they are by virtue of where they are"(pp. 493-494).*

This space is mostly associated with the studies of tourist image and perception in which the behavioural constraints of tourists are the major considerations. Tourism destinations are the condition of tourism activities. A tourist travelling to a specific place is largely dependent on their desire to seek the meaning from that place. A tourism destination is therefore represented by its natural touristic values, the perception of the tourists occurred in that destination and tourist behaviour that can in turn, strongly influence the choices made by tourists at that place. At the heart of a tourist destination is the behavioural aspect of the attractiveness of the place. It is tourists that endow value and meaning to a place based upon many internal and external constraints.

### *2.5.2 The meaning of movement*

Movement within space can be described by travel patterns, distance or mode of travel, and so on. Cox (1972) suggests that movement has two major areas of understanding – the patterns and the base of movement. According to him, the pattern of movement links one location with another and creates regularities deserving explanation (p.18). Movement is instigated by people who make decisions that are conditioned by a range of internal and external constraints. The regularities of the movement are the manifestation of the behaviours of the people who carry on the movement. The integration of an individual's choice of movement and the constraints influencing these choices, constitute the second feature of movement – the base of movement. Base of movement is simply the carrier of the movement. Its main concerns are the factors influencing an individual's movement choices. In tourism studies, movement is the dynamic element of the tourism system linking tourists and tourist space (Pearce 1984: 254).

Apart from the patterns and base of movement, there is also a third variable for understanding movement that is the intensity of movement. Intensity of movement can be seen as a very direct measurement of the character of movement which is signified by means of the volume of tourist traffic between an origin-destination pair. Researchers seek to explain the cause and reason of the intensity by identifying various social and economic attributes such as income levels and cultural backgrounds of tourists.

Cox (1972) further suggested that movement has three distinctive characteristics – distance-biased, direction-biased and connection-biased. Distance-biased movement refers to the linkage between the intensity of movement and the distance of the movement. Direction-biased movement indicates that the pattern and intensity of movement is related to the direction of the movement. The direction of movement may be random or regular and it is the link between origin and destination of movements. Connection-biased movement emphasises the importance of the connectivity of the channels in affecting the movement from one location to another.

Summarizing these views, the structure of movement can be seen as comprising three distinctive elements – pattern, direction and intensity. In breaking down the structure of movement, movement becomes measurable and operational. In studying these three features, we are approaching the fundamental reason for tourist spatial behaviour.

### *2.5.3 The meaning of tourist spatial behaviour*

As argued above, neither tourist space nor tourist movement is solely a phenomenon or a physical existence. They all contain one common element – the involvement of tourist mind. The linkage between this element and the physical outcomes of tourist space and movement features gives rise to a more complicated concept – the concept of tourist spatial behaviour which involves compound relationships between tourist movement and tourist space (refer to Section 2.2.1 and Figure 2-1). Psychologists define behaviour as any observable action (response) of a person or thing (Morgan and King 1965). Spatial behaviour can be simply understood as human actions with geographical implications.

Using a systematic approach, Downs (1970) proposed a spatial behaviour system that is then enriched by Bird (1989). The system is formed from several constituents in a sequential order originating from the real world, and the spatial perceptions of the real world. A spatial behaviour decision is an outcome of the behaviour system. According to Downs (1970) and Bird (1989), the sequence of these constituents is:

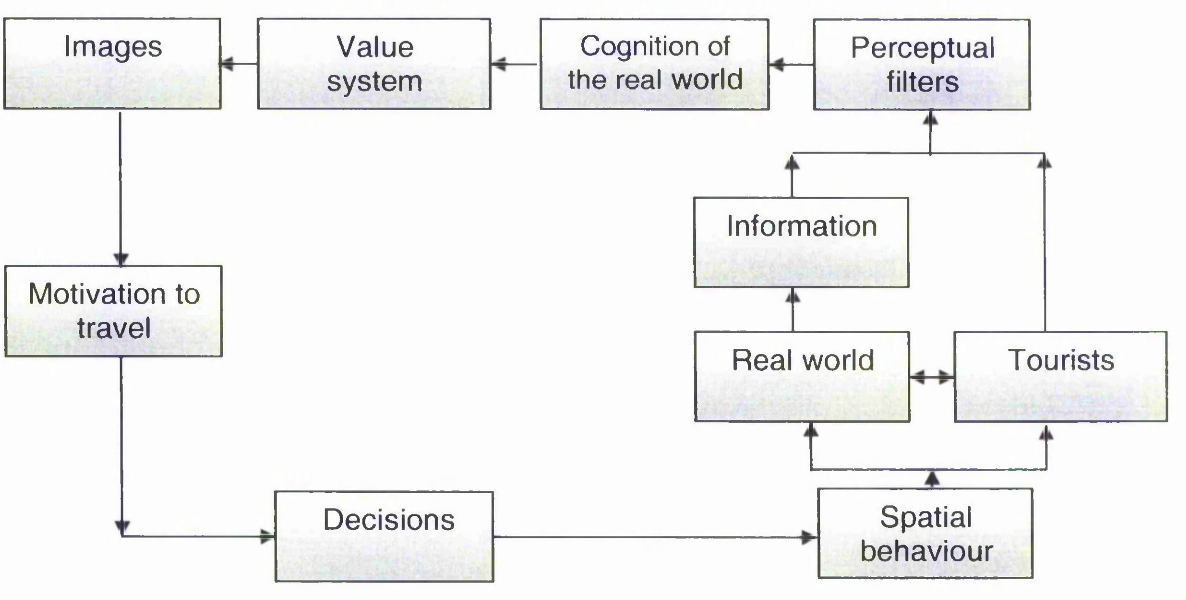
1) Real world refers to the external environment surrounding us. This real world is equivalent to the actual space in Mansfeld's (1990) (refer to Section 2.5.1) tourism space typology;
2) Perceptual receptors specified by Bird (1989: 135) as a human recognition of the real world, which is intervened by their mental processing;
3) Value system is derived from implicit or explicit religions, beliefs, social norms and cultural factors;
4) Image is embedded in cognition and is often the source of behaviour;
5) Decision is based upon the mental processing of the real world, i.e. the image of the real world;
6) Spatial behaviour is "actions that actually take place and which, as far as geography is concerned, have some form of spatial expression in movement and/or pattern" (Bird 1989: 135).

In summary, tourist spatial behaviour refers to the spatial actions of tourists and is typified by the patterns, directions and intensity of their movements on the surface of tourist areas. On the other hand, spatial behaviour can affect the utilities of tourist areas. This behavioural system proposes a dynamic cycle of spatial behaviour, and reveals the cause, pattern and related elements of spatial behaviour. However as human behaviour is normally goal-directed; a person's response is instrumental in obtaining these goal objects in order to gain satisfaction (Bruner 1957). For this reason it can be seen that Down's behavioural system lacks a major consideration - the function of motivation.

In tourism studies, numerous approaches have been proposed in an attempt to capture the factors motivating people to travel. One well-recognised theory is the 'push-pull' model (Dann 1977). Motivations to travel comprise 'push' factors which are the external features and attributes of destination, such as weather and natural scenery; 'pull' factors are the intrinsic attributes of tourists themselves, such as the desire to escape from daily life and self-fulfilment. Adding this element to Downs' (1970: 85) system and some other adaptations, the system of tourist spatial behaviour is illustrated in Figure 2-8.

As the system revealed, tourist spatial behaviour is a synthesising concept that contains both the concepts of tourism objects such as real world, and the concepts of basic relationships such as behavioural attributes including motivation, cognition and image. Tourist spatial behaviour is a result of tourist decision-making, and is established on the basis of the external influences and internal attributes. The ultimate outcome of the spatial behaviour process is expressed by the three features of the spatial movement of tourists – the pattern, direction and intensity of tourist travel.

**Figure 2 - 8 The system of tourist spatial behaviour**




Source: After Downs (1970: 85).

### *2.5.4 Tourism spatial constraints*

As stated above space has characteristics, movement has features, and tourist spatial behaviour is determined by external and internal constraints. Therefore the analysis of tourist spatial behaviour can be directed at the examination of attributes influencing tourist spatial behaviour. As stated in the spatial behaviour system, these factors can come from either the real world, or internal attributes. They can be conveniently characterised into four distinct dimensions, these are psychological, social, economic and environmental constraints. The four constraints interact with each other, and are the sources and causes of the differences in tourist spatial behaviour across a variety of segments. Extensive research has been conducted on exploring their relationships with tourist spatial behaviour.

Psychological constraints are the attributes that influence the course of actions of individual tourists, which stem from the personal character of the tourists themselves. This approach is based on the assumption that people have different travel personalities and travel motivations that through different decision-making processes lead to diverse patterns of spatial behaviour (Mansfeld 1990). A commonly used term in this dimension is 'psychographics' which can be interpreted as the measurement of tourist activities, interests and opinions (Mansfeld 1990). Variables include personal value systems, travel preferences, travel needs and travel motivations (Crask 1981; Plog 1974; Mansfeld 1990).

Social behaviour dimension reflects the course of actions an individual assumes due to their social characteristics and distinguishing attributes of social status such as education, occupation, cultural background or nationality. Socio-demographic variables refer to tourists' social life-cycle status such as age, gender and marriage status. Researches have recognised that these factors play a key role in explaining the spatial behaviours of tourists (Mazanec 1984; Mansfeld 1990; Pearce 1987a).

The economic dimension of tourist behaviour results from the constraints that directly relate to the scarcity of resources available to tourists, and/or to the environment relating to tourists' travel actions such as income. They can be encapsulated as individual traveller's travel time and travel expense. Tourists attempt to maximise their utility of travel by allocating their available economic resources in such a way that their top priority of travel and activity choices can be satisfied (Stoner and Milione 1978: 132).

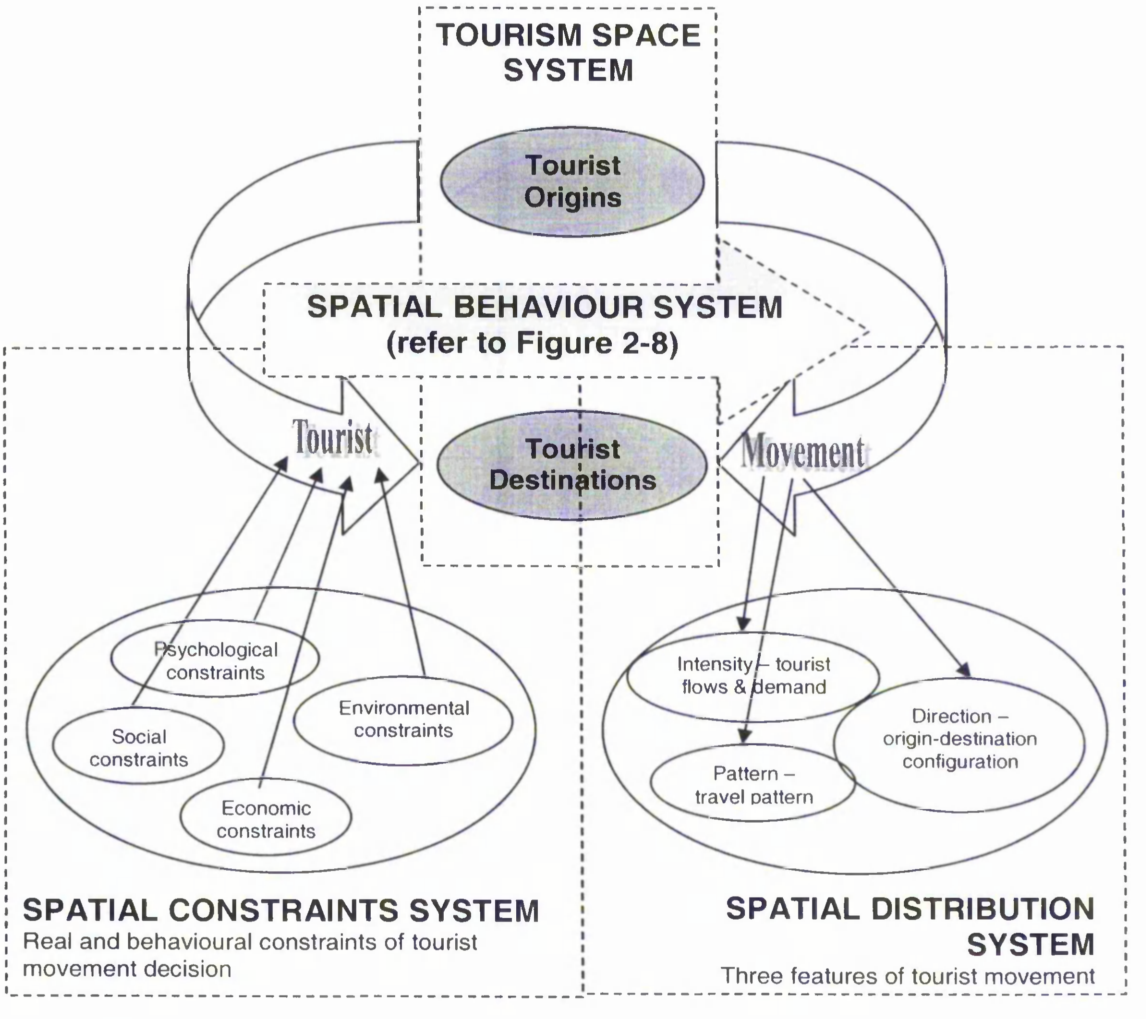
Finally the environmental dimension is the course of actions undertaken by tourists due to the external circumstance bringing about tourists' travel between origins and destinations. Geographical distance and attractiveness of destinations are key elements in this dimension.

### *2.5.5 A systematic view of the SDT*

Based upon the analyses of tourist space, the feature of tourist movement, tourist spatial behaviour and the characters of spatial constraints, the concept of the SDT begins to come into sight. However if we simply say that the SDT is the study of the movement of tourists, the idea of movement is arguable because it is too vague to be of use to tell us something. Through the clarification of the concept of movement, we now can capture the key features of movement. In analysing this, we face the spatial behaviour of tourists, because it is the cause of tourist movement. In understanding the nature of tourist spatial behaviour, the concept of the spatial constraint is elicited; that it is the combination of external and internal influences on tourist spatial behaviour. The differences in spatial constraints result in varied spatial behaviours, and are then expressed in a variety of features of tourist movement in tourist space. From this, the study of the SDT can be seen as a synthesising of the nature of tourist movement with regard to different tourist spatial behaviours. The features of the movement involve direction, pattern and intensity of tourists at different tourist locations. Therefore the SDT can be seen as a system containing the following major sub-systems – the movement of tourists, tourism space and location, tourist spatial behaviour and spatial constraints.

The system of the SDT is illustrated in Figure 2-9. Each area within the dashed line represents a subsystem. They together constitute a functional form of the SDT and linkages. These subsystems are tourism space, spatial behaviour, spatial constraints and spatial distribution. Tourist space is an origin and destination system. The linkage between origin and destination is instigated by tourists, and expressed by their movements. The movement of tourists is stimulated by spatial constraints through the processes of the tourist spatial behaviour system. Tourist movement is then differentiated by these constraints. This differentiation is reflected in the three features of tourist movement – the patterns, directions and intensity.

**Figure 2 - 9 The functional system of the SDT and its linkages**




Although, the SDT is a subsystem juxtaposed with the other sub-systems, it cannot be viewed in isolation from the others. In summary the SDT refers to the relationship between tourist and the features of tourist movement that is influenced by internal and external elements, such as environment, society and tourists' own psychological characteristics. The forms of the SDT that are expressed by pattern, direction and intensity of tourist movement, are the manifestations of the decision-makings of tourists.

In summary, the three-feature notion of the SDT clears the conceptual confusions in the study of the SDT. Each of the interchangeable concepts, such as tourist flows and travel patterns, of the SDT represents actually one or more than one aspects of the study of the SDT. The study of the SDT therefore can be set as having three main aspects. The first study is the 'travel patterns' of the SDT and focuses on the methods of tourist travel and the routes they follow. The second study is about 'origin-destination configuration' or 'destination choice' and concerns the directionality of the SDT. It provides the deterministic model of the direction of tourist movement. The third study is about 'tourist flow' or 'tourist demand' between origins and destinations and concerns the intensity of the SDT. Such studies reveal factors and reasons for the intensity of the movement of tourists and forecast demand on the basis of this understanding. The concept of the SDT integrates all these three aspects signified by the three features of tourist movement - the pattern, direction and intensity. The following sections will expend on these three features of tourist travelling at different geographical scales.

#### 2.5.5.1 Patterns of tourist travel

The first feature of the SDT is the linking method or route of tourist travel from an origin to a destination. This dimension of the study of the SDT has been described as 'travel pattern' studies or 'travel route' and 'travel itinerary' studies (Oppermann 1995, 1999; Louviere 1988; Jeng and Fesenmaier 1998; Mings and McHugh 1992). It basically addresses the question of "how the tourists from an origin travel to the destination and why?" Research suggests that patterns of the SDT are not random, but normally have regularities. Also, most of the tourist trips are not composed by the simple origin-destination-origin route, i.e. single-destination trips, but a multiple destination route. In multiple destination travel, when tourists embark on a trip, they tend to travel different routes or itineraries in terms of the number and location of passing-by areas and the final destinations they choose, as well as the route of the returning journey they take. The different forms of movement between the origin and destination pairs are exhibited in tourists' spatial characteristics. To understand how tourists travel from an origin to a destination is to understand their choice behaviours.

### 2.5.5.2 Directions of tourist travel

The second aspect of the study of the SDT is the directions or origin-destination configuration of tourist travel. Because all movement has an origin and a destination, and all destination-oriented movement is a directional movement. In essence, studies in this aspect answer the question of "where tourists come from, where they travel to and why?" A geographical origin in the SDT is the source of a specific tourism traffic flow, usually the starting point of tourists' journey; and they will also return to it. The operational meaning of tourist geographic origins is described as the nations or regions where tourists are permanently living, and they leave to visit other areas temporally (Flognfeldt 1999).

Opposite to geographical origins, tourist geographic destinations refer to the geographical areas where tourists arrive in and stay to fulfil their travel purposes. A destination is the major motive for tourists to travel. The destination may not necessarily be a single stop and may include several stops on a circuit. The combinations of origin-destination pairs reflect decision-makings of tourists. Therefore the study of origin-destination pairs is often associated with the study of tourist destination choice behaviour. Methods of movement may be random or direction-biased (Cox 1972: 20), and no matter of what type, the origin-destination pair determines the direction as well as the distance of tourist movement.

### 2.5.5.3 Intensities of tourist travel

The third aspect of the study of the SDT is the intensity of tourist movement. In effect, this topic is mostly addressed by the studies of tourist demand or tourist flows which are likely to be confused with the study of the SDT. The studies of tourism demand or tourist flows answer the question of 'how many tourists from an origin visit a destination and why?" As clarified in Section 2.5.3, the SDT is a sub-system that involves a variety of spatial concepts, and it is rich in differentiating groups of spatial features in the phenomena of tourist locational occurrences. When the term tourist demand or intensity of tourist movement is discussed, the predictability of the occurrence of tourists' visitation across a set of destinations is at the centre of the concept.

The concept is based on a form of spatial interaction between tourist generating areas and tourist destination areas, and the frequency with which tourists travelling activities happen between origins and destinations. The study of the intensity of tourist travel aims to discover why particular proportions of tourists from an origin visit different destinations (Ewing 1983). Individual choice and economic reasons are all probabilistic determinants of the choice. A study of tourist demand examines only one of the three features of the SDT. Although it is centred on the intensity of tourist traffic, in considering this, the starting and ending areas of tourist travel are necessarily incorporated into the consideration, which is linked to the study of the origin-destination configuration of the SDT.

## 2.6 SUMMARY AND CONCLUSIONS

The major thrust of this chapter has been concerned with adequate definitions of the concepts involved in this research. It also draws attention to the way the research questions are addressed, and how these questions link with the conceptualisation of this research. By doing this, it aims at justifying this research into a valid and scientific conceptual framework and forming a good foundation on which to ground this research.

There are two distinctive knowledge areas relating to this research. An obvious one is the SDT. Another important field is cross-national differences in tourists that is devoted to address the issues of the importance of culture and nationality in the SDT. The conceptualisation of the second area of knowledge is left to the next chapter. This chapter focused on the classification of the SDT.

The review of the concepts in this chapter has shown that although tourism studies has progressed rapidly, there are a number of gaps and limitations that remain unsettled. The literature reviewed proves that sound conceptualisation has been lacking in the tourism research and in the study of the SDT. This can be especially damaging in the research methodology development and theorising paradigms if it cannot be clarified at the onset of a research. As stated in the opening part of this chapter, the dilemmas associated with the task of defining tourism concepts are disciplinary, operational, self-defining and fragmentary. It is recognised that any single approach is incapable of revealing a comprehensive theoretical and conceptual framework for the complexity of tourism studies and the operating mechanism of the SDT. It is those explanations working together, as a whole that push forward the margin of knowledge we are looking for.

Therefore the chapter adopted a combination of four approaches, which are interrelated to each other and this interrelation is regarded as a means to overcome the difficulties in defining the tourism concepts. They are the disciplinary, systematic, theoretical and thematic approaches. They are certainly not exclusive in depicting tourism concepts, rather supplementary to each other.

In the explanation of the different concepts, the emphasis that was placed on the application of the four approaches varied, however one central theme of the chapter is the systematic thinking. The systematic approach acts as the thread interweaving throughout this whole chapter. The advantage of this is that the conceptualisation can present the structure and the contextual background of the SDT, which are integral parts of the explanation of this concept. The SDT is conceptualised having three features – pattern, direction and intensity.

The need of integrating tourism research into a broader scope of disciplinary paradigm is immediate. Addressing this point, this chapter has integrated geographic, psychological and economic paradigms. This integration enables a holistic understanding of the tourism phenomenon that is as an interrelated system, not integrated components. Another evident advantage derives from this integrated method is the systematic hierarchy of this conceptualisation. Compound concepts are developed based upon the understandings of simple concepts which have their disciplinary origins and are dependent on the situational context. Therefore the definition of any concept is not necessarily confined within that single concept. This approach enables the generalisation of tourism research and the concept of tourist distribution progress logically.

The necessities of conceptualising the SDT will be more evident to readers reading through the whole research thesis, which may assure that the concepts clarified here form an essential and the structural component of the research. In addition, readers can gain new insights into the nature of tourism concepts, the meaning of the SDT, and the approaches used in defining them – something that is fundamental to making scientific enquiries.

# 3 CONCEPTUAL ISSUES IN THE STUDY OF CROSS-CULTURAL DIFFERENCES IN TOURIST BEHAVIOUR

## 3.1 INTRODUCTION

In the previous chapter, the concept of the SDT was clarified in the context of the disciplinary and subject matters of tourism. This chapter will explore another aspect of the conceptual issues related to this research – cross-cultural differences in the SDT. The meaning and effect of culture have become increasingly important in all kinds of social science investigations because the study of different human behaviours in the context of culture is necessary in understanding intrinsic behaviours and extrinsic forces. Culture is recognised as a difficult concept to define. Some researchers even suggest that it is impossible to identify a consistent meaning for culture. However, in studying the impact of culture and cross-cultural differences in tourist behaviour, it is essential to make clear what are the terms of culture and the characteristics of different cultures. This identifies the main task of this chapter.

This chapter will start by discussing the concept of 'culture' and its major elements and theories. Tourism is very much a cultural product. The cultural diversity of the world is the key reason why people travel to different places, and the force to shape their different travel behaviours which vary in many aspects, such as the motivation of travel and spatial behaviours. By exploring the theoretical and conceptual frameworks of culture, the explanation moves onwards to examining the concept of 'cultural difference' and in what ways cultural differences relate to various behaviours.

The concept of 'cultural difference' is actually a "disintegrated" concept of culture. It provides an insight of the underlying structure of culture, and allows the abstract culture to become manageable in cross-cultural studies. To expand the conceptual explanations, some specific cultural elements and their roles in this research will also be discussed. These elements are nationality, value system, language and ethnicity that are normally regarded as the constructs and/or proxies of culture. The research aims to capture the cultural differences of the international tourists via these constructs/proxies. The Chinese value system, Confucian Dynamism is discussed specifically in order to specify its application in the cultural comparison between Chinese culture and culture of tourists from different places of origin. The chapter will conclude with an examination of some cross-cultural research results in tourism studies including a summary of the cultural backgrounds and the travelling behaviours of the four types of international tourists chosen for this research.

## 3.2 WHAT IS CULTURE?

Despite the importance of culture in the whole gamut of social science research, the definitional problem of this concept has been a major challenge to the advancement of cultural and cross-cultural studies. After vigorous debates and bitter effort in seeking a precise meaning of culture, researchers have gradually reached an agreement, that there are no single or few words able to express the meaning of culture exactly or universally accepted. It is preferable to appreciate a wide variety of definitions, and acknowledge that all these explanations share certain central ideas and suit varied research purposes and areas of investigations. In this understanding, the following part will attempt to explain culture by assessing some acclaimed culture definitions, and summarise some of the major characteristics of culture.

### *3.2.1 Definitions of culture*

Culture is an all-embracing word that could encompass everything that is human originated. It has been generally conceptualised as a complex combination of knowledge, beliefs, art, moral law and custom (Sturdivant 1985: 29); or the distinctive way of life of a group of people and their complete design for living (Kluckhorn 1951). Culture is something added to all other forces producing behaviour at the human level. One limitation of these views is that they are too broad and general. It needs to be "unpacked" to be more scientifically useful (Leung and Bond 1989; Rohner 1984; Whiting 1976).

Culture is not only the product of human behaviour, it is also the shaper of human behaviour (Segall 1979). Therefore, Segall (1979) states that culture is a human product in conjunction with the progress of human beings. He indicates that culture is simply the totality of whatever all persons learn from all other persons. It contains values that are expressed and a language with which to express them. It embodies a way of life that is followed by most individuals. So anything, material or symbolic, which is human in origin, could be learnt from one person by another, such as language, music, art forms, preferences, attitudes, norms and rules, are all elements of culture. Though these views list many features of culture, they lack appreciation on the momentums of the progress of culture. Reflecting on this deficiency, Manrai and Manrai's (1996) definition focuses on culture as a dynamic force resulting from the interaction of humans with their environment such that both humans and their environment influence each other, and identifies the importance of the social and physical aspects of culture.

Culture also has different ranks. In their study of culture and tourist behaviour, Master and Prideaux (2000) have stated that culture can be viewed from two main perspectives. One perspective is to view culture solely as an ideological entity encompassing values, norms, conventions and practices (Rokeach 1979). The other perspective is to view culture as a combination of ideological and material elements, such as cuisine, shopping habits, language and accommodation preference, etc. (Assael 1992; Master and Prideaux 2000; Mowen 1993). This two-perspective point of view has been echoed by many authors with varied categorisations or terminologies. Triandis (1977) states that culture has two types. One is subjective culture, which refers to the invisible, less tangible aspects of a group of people, such as attitude or values. The other is objective culture, which refers to the visible, tangible aspects of culture, such as food or clothes. These views divide culture into a hierarchical order.

Trompenaars' (1993) three-layer approach can be seen as indicating the three levels of culture. At the lowest level, the outside layer, is the 'explicit culture' (the 'observable reality' of language, food, buildings, etc); higher than this, the middle layer culture consists of norms and values; the highest level of culture is the core layer including assumptions which represent the most basic ways in which cultural groups characterise themselves to deal with their environments, such as social or natural problems.

Summarizing all these views, there are three main agreed characteristics about culture. First, culture is shared and learnt. According to Hofstede and Bond (1988), culture is the collective programming of the mind that distinguishes the members of one category of people from those of another. Linton (1945) also points out that "a culture is the configuration of learned behaviour and results of behaviour whose component elements are shared and transmitted by the members of a particular society" (p.21). Because culture is learnt and shared by a group of people, it is transmitted and reinforced from generation to generation by a group of people. People born into this cultural group will learn from each other and the culture becomes a common and fixed pattern of activities in the group of people. Therefore culture is a "collective creation" (Cushner and Brislin 1996: 6) of people.

Nevertheless, a learnt and shared nature of culture is not enough to distinguish culture. Animals have shared behaviours as well. The second feature of culture is that it is human in origin and is interactive with the environment. It is all about the way of human life. It expresses the notion of varied identity of people in a social unit, reflects their feelings and emotions, accomplishes communications among each other, and establishes the human-image which is different from anything else existing in the world. Within this, culture and its social and physical environment interact and act as catalysts for progress.

Finally, culture has two basic forms and hence, a hierarchical order. At lower level, material culture usually includes tangible things, such as food or costume. However, these forms are not only physical existences but also important for the conveyance of specific social meanings. At a higher level, ideological culture usually includes non-tangible things, such as language, a way of living, a value system and religion which are symbolic representations of a way of life to guide people's behaviours in different cultural groups.

### *3.2.2 Disciplinary understanding of culture*

Besides the use of definitions, three theoretical approaches have been used to reveal the nature of culture. They are anthropological, psychological and sociological approaches (Malhotra *et al.* 1996).

The concept of culture has been developed firstly in the subject of anthropology, and gradually become the central theme in related social science disciplines (Downs and Bleibtreu 1975). The anthropological approach attempts to make a direct assessment of cultural processes and behaviour. In this view, culture is conceptualised as a concrete reality of its own; it is associated with but independent of people and predetermining people's behaviours. The people are viewed as catalysts to a cultural reality. Bird (1989) defines culture as "an entity above man, not reducible to the actions of individuals, mysteriously responding to laws of its own" (p.181). Culture is an example of a concept existing in the world of objective knowledge outside individual's consciousness, but being able to interfere with them.

However, this anthropological view of culture has been challenged by intercultural and individual differences observed in motivation, cognition, and behaviours (Goodenough 1981). Though it is not totally opposite to the anthropological approach, but rather a supplement to it. In psychologists' viewpoints, culture broadly refers to those aspects of human activities that are symbolic and meaningful (such as Geertz 1973; Rohner 1984; Shweder 1991). Culture is viewed as a system of meaning represented in cognitive processes and expressed by behaviour, and thus, culture can be inferred or measured only indirectly from behaviour and psychological functioning (Triandis 1984; Wertsch 1991). Culturally meaningful practices are appropriated by individuals, and become the basis for higher order mental activities such as problem solving and planning (Vygotsky 1978).

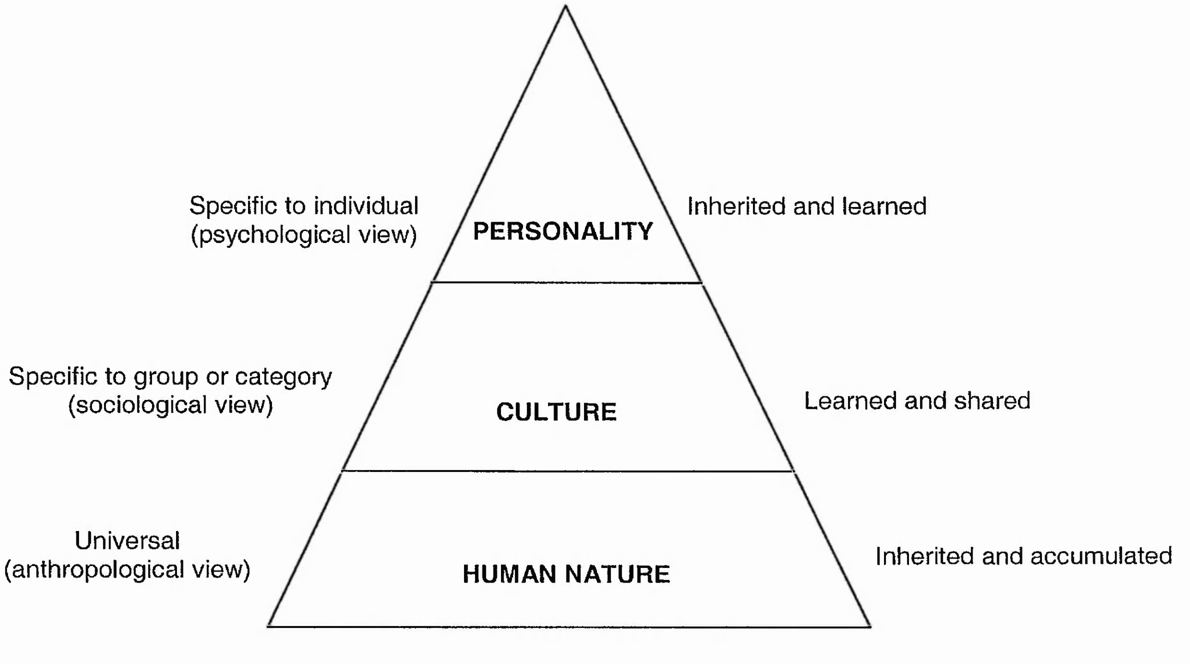
This perspective emphasises the subjective nature of culture, and views it as a cultural group's characteristic way of perceiving the man-made part of its environment. Culture in this form includes attitudes, concepts, beliefs, opinions, memories, expectations, perceptions, and values (Triandis 1972).

Because culture is learnt and shared, in emphasising this point the sociological approach focuses on the effects of social forces on behaviour. This model of thoughts stresses the critical role of social collectivity in determining the characteristics and behaviour of individuals (Cole and Scribner 1974). In their opinion (e.g. Kroeber and Parsons 1958), a social system is another approach to understand cultural differences among groups. Culture is therefore defined as a complex web of norms, values, assumptions, attitudes that are characteristic of a particular group and that are reinforced and perpetuated through socialisation, training, rewards, and sanctions (Kuchinke 1999). They maintain that culture is a 'collective creation' (Cushner and Brislin 1996: 6) which guides the thought and 'mental programming' (Hofstede and Bond 1988) of the members in that cultural group.

Cole and Scriber (1974) have explained some relationships between these approaches of understanding culture. They suggest that the socio-cultural system of culture is a 'higher' level of culture form; the individual psychological level of culture is a 'lower' level of culture (p.6). The 'higher' level (for instance, the societal or macro-level) is used to explain phenomena at a 'lower' level. It is assumed that the 'higher' level factors are the reasons for 'lower' level individual differences. Lower levels can be understood as being part of the higher level that is the lower level phenomena are 'context bound' (Berting 1987). However, these two levels are indistinguishable to a large extent because no individual is culture-free, no social phenomenon exists without a cultural factor. To single out culture from these individuals and phenomena to study cultural effect is impossible.

The Hofstede (1991) and Hofstede and Bond (1984) three-level approach takes account of all the anthropological, sociological and psychological views in understanding. They propose that culture has three levels - the universal, the collective and the individual level culture (see Figure 3-1). At the highest universal level, culture is fundamental to human society and so shared by all mankind. This category corresponds to the anthropologist view of culture. At the collective level, culture is shared with a group of people, which makes them distinguishable from other groups (Hofstede 1991; Hofstede and Bond 1984). "Culture" such as language, expressions, deference, and daily human activities are mainly within this level. This level can be equated with the sociological view of culture. The lowest levels are the individual levels of culture, which are specific to individuals rather than to a group of people. They are not shared by anyone else, but could be affected by the broader culture of which the individuals belong to, i.e. the universal and/or the collective culture. Psychological approach is primarily applied at the individual level of culture. However, the distinction between them is not clear-cut.

**Figure 3 - 1 Hofstede's three levels of uniqueness in human mental programming**




Source: After Hofstede (1991)

## 3.3 CROSS-CULTURAL DIFFERENCES

One major purpose of defining the concept of culture is emphasised by how people are culturally characterised; and how the cultural differences affect their behaviours. This has imposed another big challenge on culture and cross-cultural studies. That is to 'operationalise' the abstract of 'culture' so that specific human behaviours could be explained through the exploration of their differences. In defining what kind of features of culture we can be aware that what culture looks like, and how different they are to each other, such as Western culture with Chinese culture. For instance, a similar language or a common value system could make us think that people with these same features belong to the same culture. To grasp these cultural features, we first need to understand what cultural difference is.

### *3.3.1 The concept of cross-cultural differences*

Similar to the concept of culture, the discussion of definitions and arguments about conflicting theories for understanding cultural differences (and similarities) among groups of people have been continuing for a long time (Wines and Napier 1992) and the understanding of cultural differences is still not settled. Hofstede (1991) tries to define cross-cultural differences as differences between the typical members of cultures. However, this statement defines little of what cultural difference actually is; nor is the term 'typical members' a clear, indisputable notion. By comparison, Jameson (1993) has described the concept with more clarity. According to him, culture

> *"is not a "substance" or a phenomenon in its own right, it is an objective mirage that arises out of the relationship between at least two groups.... [N]o group "has" a culture all by itself: Culture is the nimbus perceived by one group when it comes into contact with and observes another one" (p. 33).*

This statement gives an idea that culture is a comparative concept; the understanding of a culture must be inferred from other, namely, an explanation of one culture is based on the comparative understanding from other cultures. Cultural difference is then the diversities of the behaviour and activities between groups of people who do things differently and perceive the world differently (Potter 1989). It is the comparison and contrast of two or more cultures.

However, what kind of features or characteristics can be exactly compared cross-culturally? Based on the understanding of culture and cultural difference, the features or characteristics should be, firstly, the types of collective behaviours of the people in a cultural group, such as the way to travel, the spending and saving behaviour of a nation or a special way of decision-making and the common language they speak. Secondly, all of these could tell us something about the nature of the culture itself. Thirdly, some of these features must be 'quantifiable' so that the extent of cultural differences can be evaluated.

These features or types of behaviours have been termed as 'cultural elements', or 'cultural materials' (Bartlett 1923), 'cultural variables', or 'cultural dimensions' (Hofstede 1983; Hofstede and Bond 1984; Usunier 1996, 2000; Kolter 1994b; the Chinese Culture Connection 1987; Bond 1988) to which 'significance' and 'interpretation' may be attached (Bartlett 1923: 218-221). These cultural features are influenced by the cultural settings, however, they are phenomena, which have significance in their own right. In so doing, culture can be measured and compared through inferring cultural differences in these features. Therefore, the task of explaining culture or cultural difference can be considered an effort in discovering representative or universal elements or structures of culture. The fundamental structures or frameworks in which relationships yielded by them can be explored and propositionalised as a set of principles and the nature of human society can be understood (Berry 1971, 1975, 1976; Hofstede 1980a, 1983; Hofstede and Bond 1988; Malinowski 1944; the Chinese Culture Connection 1987; Triandis 1988, 1995; Udy 1975).

Although the causal mechanisms behind the variations of people from different cultural backgrounds are still elusive (Parker and Tavassoli 2000), many researchers have attempted to explain the differences of human beings through the discovery of cultural dimensions and elements. However, this chapter focuses on three models with two different emphases. These models are developed differently, but mainly on the basis of the dimensional approach, which is able to categorise culture, compare culture and therefore, explain and predict systematic similarities and differences of behaviours across cultural groups. Berry (1971, 1975, 1976) and Usunier (1996) have used the approach to identify cultural elements at social, universal and individual level. Their models focus on the causal relationship of these elements in shaping culture but they could not explain clearly how cultures are different. Hofstede (1980a, 1983), Hofstede and Bond (1988) and the Chinese Culture Connection (1987) have also used this approach and identified five dimensions of cultural variability mainly at collective or individual levels. Their models focus on discovering the underlying structure of culture itself but lack the ability to distinguish the causal relationship of the dimensions of culture. However, a combination of these three models can show a substantial picture of the major cultural elements.

### *3.3.2 Some models to explain cultural differences*

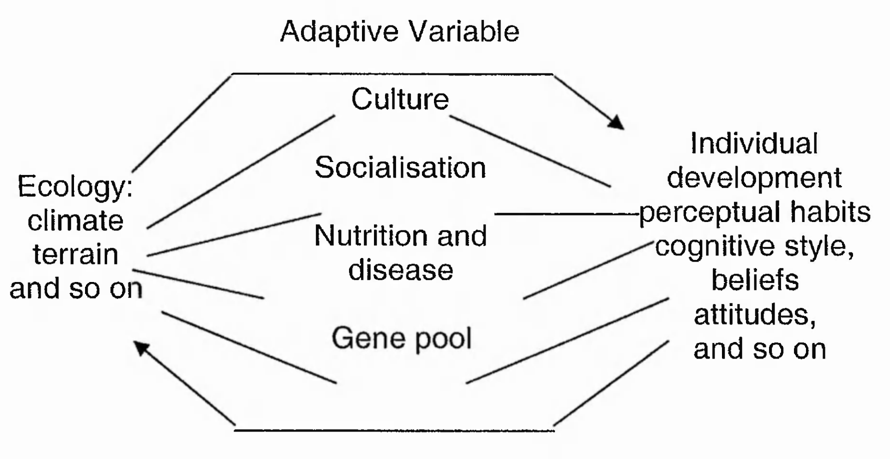
Berry (1971, 1975, 1976) proposed an ecological model to explain cross-cultural differences in human behaviour. His basic premise is that the three classes of interrelated variables affect cross-cultural differences: ecological, adaptive and behavioural variables. As he sees it, ecological variables, such as climatic and other natural forces, are the main constraints to nurture cultural forms. Adaptive variables are socio-cultural and organismic characteristics to shape cultural phenomena. The third class of variables is behavioural variables, or psychological variables. They are all measurable aspects of individual behaviour that link to ecological or adaptive variables or both.

Anthropologist Malinowski (1944) emphasised the relationship between biological needs of people and the formation of culture. He says, "...we have to base our theory of culture on the fact that human beings belong to an animal specie." All the human biological forms, such as raw materials, and preparation of food, the habitual routine establishing the time and type of appetite, hygienic, social taboos on quality and the magical religious could be exemplified from our civilisation, from the rules and principles of every primitive culture (Malinowski 1944: 86-87).

According to these two proposals, some basic causal elements of culture can be identified (see Figure 3-2). They are language, social institutions, nationalities, biological and ecological characteristics, and so on. Because of the differences in the three classes of variables, every society has its own type of culture, and an individual's behaviour is shaped by these patterns in which they become a part of the formation process. Cross-cultural studies could be those studies incorporating all or part of Berry's framework, investigating the nature of culture and its linkage with behaviour of human beings.

Berry's (1975) framework has been widely cited by other researcher's proposals. For example, Rohner (1984) proposed that cross-cultural variables include three types of systems, namely cultural systems; social systems; personality systems; environment systems and biology systems. These frameworks are overlapping or non-exclusive, but share the basic cultural characteristics in Berry's proposal.

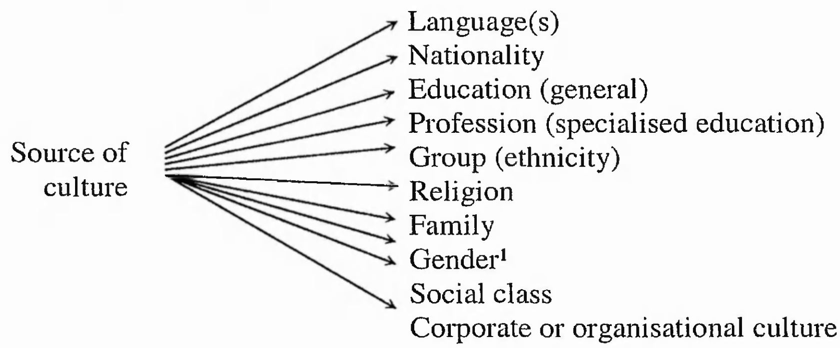
**Figure 3 - 2 Berry's framework for thinking about cross-cultural study**




Source: Adapted by Segall (1979) from J. W. Berry (1975: 51-84).

Another creditable model is proposed by Usunier (1996) based on a summary of cross-cultural research results. He identified sources of culture, which can reflect the causal relationships of culture and its elements. He maintains that at the individual level, many factors are important in shaping the culture a person held including language, nationality, ethnicity, education, and so on (see Figure 3-3).

**Figure 3 - 3 Usunier's framework for sources of culture**




[1] Margaret Mead (1948) *Male and Female,* William Morrow: New York
Adapted from: Usunier (1996: 12).

Berry's framework encompasses all elements of culture formation, including the environment, individual characteristics and universal culture itself. It is a very comprehensive framework, indicating the central causal factors of culture formation at a macro level, i.e. the collective level of a society. Usunier's (1996) model focuses on micro level, i.e. at the individual level of culture characters. Most of the elements in his model are the demographic characteristics of an individual. These elements can tell us if cultural differences exist or not and how they differ. However, they cannot reveal the extent of cultural difference. In order to comprehend the whole range of cultural difference, we still need to know more about the construction and feature of culture itself.

Elaborating on the adaptive category of variables of Berry's framework, Hofstede (1980a) has put extensive effort on developing a conceptual paradigm to explain the construct of culture and cultural differences on the basis of his momentous empirical research. Hofstede (1980a), in his study of the attitudes held by employees of a large multinational corporation in forty different countries, argues that the cultures of different nations have a significant influence on people's attitudes and behaviours even when they are employed by the same company. He viewed culture as both explicitly and implicitly incorporating social and behavioural dimensions, and cross-cultural differences can be understood through studying these specific social and behavioural dimensions. Four fundamental dimensions of culture were identified. They are the conceptual frameworks of a culturally constituted world. The differences in national cultures can be explained by differences in these four subjective cultural dimensions. The first dimension is Power Distance which is defined as the extent to which the less powerful members in a cultural group of a society or an institution accept or expect that the power is distributed unequally. Bureaucratic societies, such as some South American countries, are high in Power Distance, while more egalitarian societies, such as Scandinavian countries, rank lower in this dimension.

The second dimension, Individualism versus Collectivism, refers to the degree in which individuals are integrated into groups. It reflects the relationship of members of a society to their families' *vis-à-vis* other societal units. In highly individualistic societies such as the United States, individuals direct their action for their own benefit rather than for the interests of broader social groups; while on the contrary, Asian countries are collectivistic societies. People develop a strong and cohesive relationship with their in-group members, usually, their extended families, in countries such as China and Japan.

The third dimension, Masculinity versus Femininity implies strongly differentiated gender roles and different value systems between men and women. Highly masculine cultures, such as Japan and some Mediterranean countries, emphasise gender differences, appreciate assertiveness, aggression, and toughness; while feminine cultures, such as Denmark, reinforce nurturing, caring, and modest behaviours among both male and female members, and show smaller differences between men's values and women's values (Kuchinke 1999).

The fourth dimension is Uncertainty Avoidance. It refers to the extent to which uncertainty and unknowns different from usual situations are tolerated and the extent to which institutions or individuals avoid change. In uncertainty-accepting society, people are more tolerant of behaviours and opinions that differ from their own, less restrictive to rules and more willing to changes and vice versa.

In Hofstede's studies (1980a, 1983, 1991), many Eastern Asian countries or regions, such as Hong Kong SAR, Singapore, Taiwan, South Korea and Japan, which he termed as neo-Confucian countries, showed similarity in the first three cultural dimensions. They generally score fairly high on Power Distance, low on Individualism, and mid range on Masculinity/Femininity (except Japan). However, these countries show very different results in the dimension of Uncertainty Avoidance. For example, in Hofstede's (1983) study, Singapore's index in this dimension is 8, Hong Kong SAR is 29. They are in the same range of index as the United States (46), Great Britain (35), Denmark (23), and so on, which are predominantly western cultural countries. However, Japan's index is 92, South Korea is 85, and they are much higher than the other two neo-Confucian countries. Hofstede did not give a clear explanation of this occurrence. Despite the variance in the fourth cultural dimension, these countries are still treated as a similar cultural group. The reason might be explained in the discovery of the fifth cultural dimension – Confucian Dynamism by the Chinese Culture Connection (1987). Table 3-1 shows the cultural dimensions of people from the four origins chosen for this research. This fifth dimension is discussed in Section 3.3.3.

**Table 3 - 1 The five cultural dimensions of the cultural groups relating to this research**

| Cultural dimensions | Chinese | Japanese | American | British |
|---|---|---|---|---|
| Power Distance | High | High | Low | Low |
| Individualism vs. Collectivism | Collective | Collective | Individual | Individual |
| Masculinity vs. Femininity | Weak Feminine | Masculine | Feminine | Weak Masculine |
| Uncertainty Avoidance | Weak | Strong | Weak | Weak |
| Confucian Dynamism | Strong | Strong | Weak | Weak |

Source: Summarised from Hashimoto (1996); Hofstede (1991); Bond (1988); the Chinese Culture Connection (1987); and Hofstede and Bond (1984)

Although Hofstede's research results have been rigorously applied and widely cited across disciplines, attempts have been made to explain many of the mechanisms through which cultural variables might have an impact on many social and economic phenomena, Hofstede's (1980a) theory pertains to cross-cultural psychology in organisational studies and is not concerned directly with tourism studies *per se*. Though his paradigm assumes that the analytical similarities exist, and they are universal to all cultural groups or societies, these dimensions are mainly personality traits of individuals and are shown to different extents by members from various cultures. Nevertheless, Hofstede's research brings new light on the study of cross-cultural psychology and establishes a foundation for further advance in cross-cultural research. By locating cultures on a four-dimensional map, it is possible to compare cultures on *a priori* basis (the Chinese Culture Connection 1987). It is proven that some cultural elements are so fundamental to any human society that they are found in different cultural societies no matter to what extent these people possess the cultural elements. As Hofstede and Bond (1988) have put it, "they are universal human traits in the sense that all societies share the same problems, but different societies have "chosen" (historically rather than consciously) different solutions to these problems" (p. 16).

### *3.3.3 Confucian Dynamism and Chinese culture characteristics*

Confucius (Kong Zi) was a remarkable Chinese philosopher, scholar, and educator about 500 BC in China, who holds a similar position to the Greek philosopher Socrates in the west and is regarded as the 'father of culture and Chinese civilization'. Some basic doctrines of Confucius include orders of social hierarchy and relationships; respect for the family and filial piety; maintaining harmony, and so on. This Confucian ideology has been firmly rooted into the Chinese society and has influenced their daily life for thousands of years. In the meantime, its effect has reached far beyond its origin. Many of the cultures in the surrounding countries/regions of China have been shaped by Confucianism profoundly, such as Japanese and Korean culture. In contrast, North America and European countries are predominantly a different society exhibiting many aspects of Western cultures principally inherited from the ideology of Christianity. One of the major differences between these two cultures is the emphasis given to the role of individuals and society. Chinese culture is highly collectivist and group-oriented thus individuals are constrained by their roles in groups. American and British culture, on the other hand, is individualistic with a focus on the individual's right to free will, independence and self-assertion (Reisinger and Turner 1997a).

The Chinese value system, which has been discovered as a cultural dimension by the Chinese Cultural Connection (1987) in their 22 country cross-cultural study is mainly derived from non-western values. After that, Hofstede and Bond (1988) further elucidated in comparison with the four Hofstede dimensions. Their research identified that this dimension bears no relation to Hofstede's other four dimensions. So they designated it as the fifth cultural dimension naming it as "Confucian Dynamism" because the values incorporated in this dimension dealt with a choice from Confucian ideas and values.

'Confucian Dynamism' refers to the extent to which a culture disposes its members to pursue the virtues of maintaining a harmonious and stable hierarchy and complementing the obligations of social roles played by individuals (Hofstede 1991: 168). Table 3-2 shows the main value element in this dimension. The positive end reflects a dynamic and future-oriented mentality, such as persistence, hard work, thrift, shame, and regardful of relationships, whereas the negative end reflects a more static, tradition-oriented mentality, such as reciprocation, "face", and tradition (the Chinese Culture Connection 1987; Hofstede and Bond 1988). Their studies reveal that East Asian countries, such as Hong Kong SAR, Taiwan, Japan, South Korea and Singapore rate at the top of this dimension. In the middle positions, some Western countries, such as Germany, the Netherlands, Sweden and England, and U.S.A. are located.

**Table 3 - 2 Values associated with Confucian Dynamism**

| The relative importance of: | The relative unimportance of: |
|---|---|
| Persistence (perseverance) | Personal steadiness and stability |
| Ordering relationships by status and observing this order | Protecting your face |
| Thrift | Respect for tradition |
| Having a sense of shame | Reciprocation of greetings, favours, and gifts |

Source: Hofstede and Bond (1988: 17).

This dimension is distinct because firstly, it separates Western cultures and Oriental cultures. The values constituting this dimension are heavily Confucian. Also this dimension is an underlying dimension to Hofstede's other four dimensions. This is shown in those people who have high scores in Confucian dynamism demonstrate similar cultural propensity even though they might vary in some other dimensions. This indicates that Confucian Dynamism might surpass the other four dimensions. For example, Hong Kong SAR and Taiwan are mainly predominated by ethnic Chinese and Confucian culture. On the other hand, Japanese are also known for their Confucian value system. These two cultural groups are regarded as having similar cultural background despite the fact that two out of four of Hofstede's dimensions produce very different scores between them; they are Uncertainty Avoidance and Masculinity versus Feminism. It can be understood as Confucian Dynamism is the dominant dimension shaping the other four dimensions because people who have high values in Confucian dynamism have dedication in maintaining a harmonious hierarchy of relationships, fulfilling social roles and adhering to social norms, customs and obligations embedded in these roles. As a consequence, these behaviours, more or less, lead to high Power Distance, high Collectivism and high Uncertainty Avoidance.

Although researchers on cross-cultural psychology have been selecting many representative characters as cultural dimensions, it is important to distinguish that some of the personality traits of individuals, such as Hofstede's (1980a, 1991) four dimensions are not necessarily directly applicable to tourism studies, because cultural differences are not only reflected in the individual level, but to a larger extent, also in the social level or collective level in the tourism phenomenon. Therefore, in this research the identification of cultural dimensions should be focused on discovering tourism related cultural characters. The models of Berry (1975) and Usunier (1996) could be of use in this research because many major cultural elements have been proposed by them as potential causal mechanisms for cultural differences at a universal and collective level. Researchers also provided evidence of the importance of many socio-cultural factors identified in their models and some other factors. Among these have been nationality (Calantone and Mazanec 1991; Pizam and Jeong 1996; Pizam and Sussmann 1995), the form of social institution (Saige and Schwartz 1996), language, urbanisation, formal educational institutions, literacy (Cole and Scribner 1974; Usunier 1996), economic development, stages of 'civilisation', the progress or backwardness of a society, or ideology, and so on (Bennett 1998). Though many of the factors are important, some of them are overlapping. This research summarises and takes account of some of the most important and representative categories of culture – nationality, language, ethnicity and value system.

### *3.3.4 Culture and nationality*

The relationship of culture and nationality is concerned with the issue of the boundary and location of culture. In the sense of location, culture has long had implicit connotations tying it to the idea of a fixed location. The more particular peoples, ethnic or religious groups or sections of society seek to reaffirm their differences, the more they become attached to their locality (Hall 1991; Larrain 1994). Therefore, culture is usually related to a nation-state, which occupies a physical territory mapped with a political boundary, and has an easily identifiable location.

As a social group, different nations have a variety of culture characteristics, which may make them unique. On the other hand, for a specific nation, culture has the most important influence on the formation of its national identity. So the fundamental relationship between culture and nation is that 'a culture' predominantly parallels the notion of 'a society' or a 'nation' (Tomlinson 1999). Culture is retained by nationality and nationality embodies culture. Cultural differences, therefore, are the main characteristic when contrasting national contexts. According to Hofstede (1980b), national culture is a stable and dominant cultural character, which is shared by most of the individual from the same nation. It is defined as the collective mental programming of the people of any particular nationality (Hofstede 1980a, 1991).

Researchers have discovered evidence of the cultural differences and similarities based on nationalities. For example, Usunier (1996) identified some cultural affinity zones in which countries share certain similar cultural characteristics, such as language, religion, family life patterns, work relations and consumption patterns (p.215). He hypothesised four cultural affinity zones in Europe on the basis of the classification of Saxon and Latin cultures as well as religion division. They are Nordic Europe, Mediterranean Europe, Central European countries and Anglo-Saxon Europe including the United Kingdom and Ireland. Bennett (1998) identified a central-peripheral relationship of cultural forms between the USA (as the cultural centre) and Australia and New Zealand (as the peripheries) as well as the UK, in which countries share similar religions, languages, ways of living and so on. The neo-Confucian countries in East Asia identified by Hofstede (1980a, 1983, 1991) could be classified as another cultural affinity zone, which is culturally different with the European cultures

Recently, the traditional view about culture and nationality has been challenged as the world is increasingly globalising. Cultural homogenisation is eroding national identities, and the conceptual connection between culture and nationality is more and more obscure. Usunier (1996: 12-15) suggested that three problems need to be borne in mind when using nation-state to exemplify culture. The first one is that a country's culture could be defined by reference to other countries' cultures. So, there is no definite national culture. Secondly some nations are explicitly multicultural, such as the United States. Finally, the last century has imposed the formation of new states, this creates difficulties in identifying national culture. However, the use of nationality as the proxy of culture can still be effectively adopted because nationality and culture are interrelated even though cultural differences across nations might be partially different rather than completely different (Peabody 1985). In most of the research situations, using nationality as a cultural unit is operational and convenient. One way to best avoid suffering from the drawback of nationality is to use a combination of cultural elements, such as considering a variety of contexts beyond national culture in cross-cultural research. This can include ethnicity, social class, language, value system, personality and so on (Brislin 1993; Cushner and Brislin 1996; Cushner *et al.* 1992; Pedersen 1988).

### *3.3.5 Culture and value*

'Value' is not an easy term to define. However, explicitly a core notion of value is that holding values involve making judgements about what is believed to be 'good' and desirable to an individual or a group, and what is believed to be 'bad' and undesirable. Rokeach (1979) defines that

> *"A value is an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (p.5).*

Members of different cultures share various ideas and beliefs of reality and social customs. These ideas and beliefs become guiding rules for the behaviour of the cultural members. Cultural values refer to "the goodness or desirability of certain actions or attitudes among members of the culture" (Stewart and Bennett 1991: 14). They describe which actions and ways of being regarded as better than others and are socially accepted by the cultural background. For instance, for Americans, travelling alone may be regarded as brave and encouraged; however, for Japanese, this behaviour might be regarded as dangerous and a lonely activity and discouraged. These different value orientations foster diverse social behaviour and the behaviour will reciprocally reinforce the social norm.

Many elements can shape a group of people's or an individual's value system. One of the most obvious differences among peoples of different cultures is life-style difference. They are the different value systems and attitudes toward life itself (Segall 1979). In this respect, value and culture are integrated. Cultural difference can be identified on the basis of people's different value orientations toward certain universal dimensions (Kotler 1994). In respect of the cultural dimensions, value can also be identified into dimensions. For example, in Hofstede and Bond (1988) and the Chinese Culture Connection (1987)'s Confucian value system studies, they identified four dimensions to represent different cultures using Chinese values as the criteria. They are the importance of persistence, ordering relationships by status and observing this order, thrift, having a sense of shame (see Table 3-2).

These value dimensions, to some extent, have very similar characteristics with culture dimensions. However, these dimensions are more psychological, intangible and spiritual criteria and must be held by individuals in a society. They are the grids of principles according to which people wish to conduct their behaviours. It is often seen as the determinants of attitudes and beliefs (Harding 1987). Therefore, the identification of the different value systems in reflecting the broader culture variation is very much at individual level rather than at collective level.

### *3.3.6 Culture and language*

Language is the key feature, which differentiates human beings from animals. It underlies the uniqueness of human social behaviour and endows them with the appearance of culture. Language is basically a system of arbitrary vocal symbols used for human communications. It is not only a key element of culture, but also an instrument for making people not only individuals, but also social beings. From this point, language can be related to culture. It is perceived as standing between an individual and his/her environment, acting as a sort of interpretative filter, reporting experience of people, categorising and defining these experience (Henle 1975). Cultural experience is reflected in language, and conversely, upon the ways the features of language may shape people's cultural characters through affecting their thinking, and the way of their living, thus the formation of a culture.

Language has three major functions in a hierarchical interaction with culture. Linguistic function is the basic function. It is expressed in phonetic sound patterns, structured in grammars and vocabularies. The higher function is a psychological function which reflects the way people use languages and their mental processes (Greene and Coulson 1995). Language system is not merely an instrument of expressing or packaging ideas but rather is itself the guide and mould that shapes our ideas (Whorf 1956; Sapir 1916, 1929). The structure of language is, therefore, an important factor in shaping our cultures through affecting and organising the thought and perception of human beings.

The highest function of language is its social function. Because different language systems foster varied thinking methods, so the world is differently experienced and conceived in different language communities. In this sense, language gives people their social and cultural identities, such as cultural attitudes toward time, and the like to individual characteristics, such as perception and thought. Because of the relationship of culture and language, it has been suggested that the understanding or learning of one language, even though not born into it, can help to reduce the possibilities of misunderstanding the culture norms and customs and their cultural differences of that society (Whorf 1956).

The case of linguistic relationship between Japanese and Chinese exemplifies the nature of the relationship between culture and language. Japanese have borrowed their language with ideograms from China nearly two thousand years ago. Many of the phonetic sound of Japanese and Chinese are very similar. Japanese, nowadays, still uses more than a thousand of the Chinese characters with identifiably equivalent meanings to original Chinese. The recognised shared value system and cultural background between these two nations might largely contribute to the similar colloquial system. This system has been affecting their cultures in two ways according to the three functions of language. One is the psychological effect of fostering a similar habitual way of thinking; the other is enhanced understanding of each other's culture, and reduced cultural difference between them.

However, the relationship between language and culture is far more complex. Whorf and Sapir's hypothesis of the structure of language in affecting human beings' thought is very difficult to empirically prove. Usunier (1996) also argues that to reveal the relationship between culture and language risks turning into 'chicken and egg' argument. For example, there is no evidence to prove that French speakers in France and Canada share the identical culture in spite of their same language. The same applies to American English and English English. Its impact on shaping the feature of culture must be affected by many other factors.

### *3.3.7 Culture and ethnicity*

The term "ethnicity" means many things to different people (Callahan 1998). However, one fundamental point of ethnicity is that it is culturally-based. Ethnicity often refers to a sense of belonging to a specific group of people, usually, an association with homeland, same ancestors, common language, and belief or religion. Though the sense of belonging is basically a psychological matter, it is deeply rooted in the habitual way of living of a person. From these characterizations, ethnicity can be seen as a construct of culture, i.e. it identifies a cultural group and affects the behaviour of people in the group. However, culture and ethnicity are not equal concepts. This is shown clearly in the case of immigration, since an ethnic belonging is usually taken from the territory where a culture originates, even though they move out of it, people from this territory often consciously or unconsciously maintain the culture through which they keep their roots and identities. In this situation, the sense of belonging to an important ethnic group "may override, and even nullify the feeling of belonging to a particular nation-state" (Usunier 1996: 13).

The impact of ethnicity and the cultural identity of ethnic groups have been studied by researchers in various fields. For example, relating to tourism and leisure subject, Child (1983) has conducted a research on cross-cultural children's play and leisure behaviour in the UK. She used ethnicity as the proxy of culture rather than nationality. Three ethnic groups according to their religions – Hindus, Sikhs and Muslims, and two groups of English children according to social class were used. Distinctive differences of the play and leisure behaviours of these five groups of children were found, although they have identical national identity. This indicates one of the major problems of cross-cultural study, the difficulty in identifying the boundaries of a cultural group or unit. Country or nation is often regarded as a cultural unit, but its effectiveness in characterizing culture could be misguided.

However, addressing the sub-cultural variation in values among diverse ethnicity, the culture system of the macro environment is still the dominant major value pattern of members. For example, although America is made up of people from all over the world, it is recognised that American culture is predominant among the people no matter which cultural or ethnic background they are from. Especially this pattern becomes more unambiguous after one or more generations of the immigrants. While they may address their cultural origins, they might also claim their American identity.

## 3.4 CROSS-CULTURAL RESEARCH IN TOURISM

Culture is recognised as a supreme factor, guiding and influencing many aspects of life. Tourism has a culture of its own (Nash 1978) which acts both as an object of the tourist gaze and as a factor likely to condition tourism's participants (Boniface 1998). On the other hand, tourism actively shapes and modifies, or reserves 'culture'.

### *3.4.1 Tourism culture*

Tourism research has attained increasing prominence in the past decades. It has gradually developed a set of its own system of conceptual frameworks to explain and define the relevant phenomena in the context of tourism domain. An understanding of tourism culture and cultural related tourist behaviour is the cornerstone of tourism development. As the subject matures and attracts increasing attention, the scope of tourism concepts develop and the precision of these concepts improve as the result of the constant constructive debates and empirical research.

Tourism researchers have suggested some forms of culture, which are particularly germane to solve and explain tourism enquiries. Their approaches to define tourism culture are similar to those used by Berry (1971, 1975, 1976) and Hofstede (1980a, 1983, 1991). That is the dimensional approach (refer to Section 3.3.2) of identifying cultural elements. In the study of cultural and heritage tourism, Alzua *et al.* (1998) maintain that tourism culture has two levels. The first level is the macro level. The meanings of culture and cultural heritage are shaped by the ethnic and social structure of tourism destination. This level of tourism culture parallels Hofstede's (1991; Hofstede and Bond 1984) collective level of culture. The second level of tourism culture is at a micro level; culture is influenced by family experience, schooling, neighbours, and many other everyday experiences of tourist's own (Alzua *et al.* 1998; Blau 1989). They conclude that the features such as development, education, intellectual and aesthetic training, social expression, and taste are among the meanings that tourism "culture" and "heritage" encompass (Alzua *et al.* 1998: 2-3). Clearly, this level of tourism culture is equivalent to the individual level of culture (Hofstede 1991; Hofstede and Bond 1984).

Herskovitz (1948: 348) classifies the components of culture into five manageable groups in order to capture the abstract concept. They are material culture, social institutions, humans and universe, aesthetics, and language. Though researchers have proposed various forms of culture and elements of culture, the essence of tourism culture is equal to 'pure' culture discussed in Section 3.2. Most of the frameworks used to explain the cultural difference of people could be adapted into tourism analysis. As Pizam and Jeong (1996) state, tourists of various nationalities might possess simultaneously both "touristic cultures" (i.e., the culture of group tourists, conventioneers, backpackers, etc.) and "national cultures". In general, the universal level of culture is more applicable in generic tourism studies, such as culture tourism and destination planning; a collective level of culture is more germane in cross-cultural tourism research; and an individual level of culture is more emphasised in tourist behaviour study.

### *3.4.2 Cultural differences in tourism studies*

Tourists are conscious and systematic seekers of experience in difference and novelty, drawing from the physical and cultural element of the destinations and are perceived by tourists as different from their home environments (Bauman 1996). The differences in culture influence various tourist behaviours, such as satisfaction, decision-making and motivation (Master and Prideaux 2000; Mills and Morrison 1985). Robinson (1998) has reflected in detail the significance of 'cultural difference' in the tourism phenomenon:

> *"While physical differences are important, it is the more intangible and highly contested aspects of cultural difference which provide a central motivation to tourism. Cultural differences operate at a number of related*

> *levels reflecting the multifaceted interpretations of the term culture. Some tourists seek contact with different 'ways of life', as identified by a wide variety of cultural signifiers including social behaviour, language, dress, music, the arts and cuisine. Indeed, tourism is one form of human activity that thrives on the celebration and display of cultural differences; ... In other spheres of human activity cultural differences may be apparent but may be neither relevant nor emphasised, but in tourism cultural differences are packaged and supplied to provide emphasis" (p.21).*

In explaining the social-cultural impact on cultural difference of tourist host and guest interaction, Williams (1998) introduced the concept of 'cultural distance'. He maintains that the "most important factors in shaping socio-cultural impacts are the levels of cultural similarity or dissimilarity and the stage of tourism development that has been attained. Cultural 'distance' (which often tallies closely with spatial distance) between visitor and host will be crucial in determining the level of impact that is likely to be felt" (p.156).

'Cultural distance' denotes the degree of variation of people from different cultural groups in general social interaction. It is simply a measurement of cultural difference of people; namely the degree of difference between the value systems, national and cultural backgrounds, or patterns of behaviour which tourism individuals or groups and tourism community hold. Although what Williams (1998) discusses here of the cultural 'distance' is about its impact on the social and cultural interaction of tourists with the host country, distance has been an important bearing on many forms of human behaviour (Walmsley and Jenkins 1999). It has not only physical meaning across real space, but also social and cultural meanings. Like spatial distance, it can impose obstacles; bring about difficulties of communication and determine the social and spatial behaviour of people.

Compared with the concept of 'cultural difference', the concept of 'cultural distance' has the potential not only to reflect the difference of cultures, but the degree of the difference, which is difficult for the other one to display. Also, compare with the concept of culture itself, 'cultural distance' can operationalise cultural comparison at both individual and collective level. It can be an indicator of the difference between tourist and host cultures; and the difference among tourist cultures. In this research, cultural distance will be used in many instances instead of cultural difference in order to encapsulate both the degree and the content of cultural difference.

Therefore, in the tourism context, cross-cultural research can be seen as "the study of the differences and similarities among specified cultures, either with the same country, or in different countries" (Sussmann and Rashcovsky 1997: 193). However cultural elements identified in cross-cultural tourism research for measuring country- and group-level effects for explaining variations in tourist behaviours are normally different from those acknowledged in other social science research. It might be tempting to suggest that the theories introduced about culture difference, such as Hofstede's (1980a) theory and Berry's (1975) framework or Usunier's model (1996), are adaptable in tourism research. However, the mechanisms by which such an effect might be transmitted are not immediately obvious. To explain cross-cultural differences in the travel behaviour of international tourists, the basic argument should be further clarified to investigate the unique condition of the tourism phenomenon.

Different from other social science research, cross-cultural research in tourism studies has been mainly conducted in three ways. The first one is to investigate culture's impact on tourist behaviour and to define cross-cultural differences in tourists from different cultural backgrounds. It does not compare the behaviour of tourists directly or indirectly, but explores the relationship of culture and tourist behaviour as well as the other relevant cultural elements; thus implying the importance of culture in determining tourist behaviour (such as Cohen 1988; Esman 1984; Graburn 1983; Muller 1989, 1991; Sussmann 1997; Thanopoulos and Walle 1988; Um 1990; Woodside and Lysonski 1989).

The impact of culture and cultural difference on tourist behaviour can be seen as mainly in three aspects. Firstly, culture varies from place to place at collective level. It acts as an external factor, mainly culture characteristics of tourism destinations, to which tourists may be drawn. It is these cultural differences across geographical space that constitute the touristic landscape, and become the basic motive for people to travel. Culture also has social impact on tourism. It acts outside individual tourists shaping the social-economic environment and thus affects tourists. This is mainly reflected in some basic social-cultural elements, such as the difference of value systems, languages, social classes, ethnicities between tourists themselves and/or tourists and host communities (Bocher 1982; Mayo and Jarvis 1981; Sutton 1967; Taft 1977). The third impact of culture is its internal influences on tourist behaviour through shaping their psychological and personality traits, such as motives, attitudes and perceptions toward the world.

Impact analysis provides rich evidence of the linkage of culture with a variety of tourist behaviours. However, to understand how tourists from diverse cultures differ with each other, cross-cultural research is needed and this leads to the use of two explicit approaches. The first approach is the direct cross-cultural study of tourist behaviour. It simply compares the behaviours of tourists, such as motivation or decision-making, cross-culturally leading to direct results about the impact of cultural differences on tourists (such as Agarwal and Yochum 1999; Flognfeldt 1999; Gursoy and Chen 2000; Reid and Reid 1997; Richardson and Crompton 1988a, 1988b; Sussmann and Rashcovsky 1997; Yan 1990). The second approach is the indirect study utilising the perceptions of tourism communities involved in tourism activities, such as tour guides or host communities, to reflect the cultural differences in tourists (such as Pizam *et al.* 1997; Pizam and Jeong 1996; Pizam and Reichel 1996; Pizam and Sussmann 1995).

Each of the methods has its limitations and advantages. The direct comparison can offer the most explicit explanation of cross-cultural differences in tourist behaviour. The indirect observation of tourism participants on cross-cultural difference in tourist behaviour has been criticised as lacking of direct reflection of tourist's own character. On the same token, the direct method falls into the same fallacy as well. It is criticised as establishing on the indirect experiences and/or of the social scientists (Peabody 1985; Pizam 1999). So research is contaminated by either the tourism viewers' perceptions or researchers' own value systems and culture characters. In this sense, none of the approaches can completely reveal the true nature of tourist behaviour with absolute objectivity and accuracy. By the same reason, we are also suspicious about tourists' own abilities to express their true attitudes or preferences. Nevertheless, research still needs to carry on because through combining each respective perspective, researchers are able to diminish faults and draw a full picture of the reality. Table 3-3 summarises some studies of the cross-cultural tourist behaviour using the three approaches.

## Table 3 - 3 Summary of cross-cultural research in tourist behaviour

| Aspect of tourist behaviour | Impact of cultural differences | Method | Author | Cultural variables |
|---|---|---|---|---|
| ***Cultural impact on tourist behaviour*** | | | | |
| | Cross-cultural impact on tourism development | | Stephen William (1998)<br><br>Graburn (1983)<br>Sussmann & Rashcovsky (1997) | |
| ***Cross-cultural behaviour of tourists*** | | | | |
| Extent of travel, information source, rating destination & accommodation attributes | French and English Canadians' vacation travel pattern, and explore whether the differences were attributable to cultural background, and/or socio-economic differences. | Direct | Sussmann & Rashcovsky (1997) | Language, ethnicity |
| Perception and preference on vacation travel | Japanese, German, British and French are investigated and their travel preference of the destinations | Direct | Dybka (1988) | Nationality |
| Motivation | Japanese, French, German and British | Direct | Yuan & McDonald 1990 | Nationality |
| Satisfaction | Western and Asian travellers in hotel | Direct | Choi & Chu 2000 | Region, nationality |
| Decision timing | Japanese and Korean decision time frame | Direct | Iverson 1997a | Nationality |
| Spending behaviour | Asian, African, white Hispanic American's spending behaviour, no difference by race | Direct | Agarwal & Yochum 1999 | Race, ethnicity |
| Market segmentation | USA, UK, Canada, Germany, Trinidad markets are examined and segmented | Direct | Reid & Reid 1997 | Countries of origin |
| Market segmentation | International tourists travel patterns in Norway | Direct | Thor Flognfeldt, Jr. 1999 | Geographic origin |
| Foodservice and vacation experience | Japanese, American, Canadian in Hawaii, their preference of local food, Japanese are different with N. American | Direct | Sheldon & Fox 1988 | Nationality |
| Environmental Perception | Japanese, Chinese, British, German tourists' attitudes toward environmental protection. | Direct | Hashimoto 1996 | Nationality |
| Information search | German, British and French tourist | Direct | Gursoy & Chen 2000 | Nationality |
| Vacation pattern | French and English Canadians | Direct | Richardson & Crompton 1988b | Language, ethnicity |
| Vacation-related perception of tourists | Investigate cultural influence on French and English Canadians' perception on the vacation attributes of the USA and Canada | Direct | Richardson & Crompton 1988b | Language, ethnicity |
| ***Perceived cross-cultural differences in tourists*** | | | | |
| General behaviour | French, British, American and German | Israeli tour guide | Pizam & Reichel 1996 | Nationality |
| General travel behaviour | Asian visitors to Australia | Tourism communities | March 1997 | Nationality |
| Purchasing behaviour | Specific aesthetic preferences with those nationalities | Handcraft producer | Popelka & Littrell 1991 | Nationality |
| Perception and motor tours behaviour | British, Israeli, Korean, and Dutch tour guides had different perception of the behavioural characteristics of American tourists on escorted motor tours. | Tour guide perception | Pizam 1999 | Nationality |
| General behavioural characteristics of tourist | British tour guides' perception and opinions on behavioural characteristics of French, Italian, Japanese and American tourists on guided tours. | Tour guide perception | Pizam & Sussmann 1995 | Nationality |
| Behavioural characteristics of tourist | Japanese, American, Korean tourists were compared through the perception of Korean tour guide | Tour guide perception | Pizam & Jeong 1996 | Nationality |
| Ethnic stereotypes | Mexican and American | Host perception | Brewer 1984 | Ethnic, nationality |
| Tourist and host interaction | Mandarin speaking tourists and host cultural difference | Host and guest interaction | Reisinger and Turner 1998c | Language, nationality |
| Cultural difference | Japanese tourist and Australian guest | Host and guest cultural difference | Reisinger & Turner 1997b | Nationality |
| Tourism development | Indonesian tourist in Australia | Direct comparison | Reisinger & Turner 1997a | Nationality |
| Landscape evaluation | Westernised tourists and Balinese | Direct comparison | Hull & Revell 1989 | Language, ethnicity |

### *3.4.3 Cross-cultural research in tourist behaviour*

The existence of differences in tourist behaviour is widely confirmed in many aspects in tourism studies. In both direct and indirect research, nationality has been commonly used by many tourism researchers as a predictor to test cross-cultural differences in tourist behaviour, such as motivation, satisfaction, destination choice, spatial pattern, and so on. However, as discussed in Section 3.3.4, nationality has been argued as a tentative variable to categorise tourists. The use of nationality also imposes methodological difficulties in cross-cultural research. Dann (1993) commented that tourism researchers using nationality as a discriminating variable for explaining the differences of tourist behaviours should bear in mind the three limitations. Firstly, the concept of nationality itself is normally vaguely defined; secondly, the globalisation of the world further obscures the boundary of nation; moreover; the increasing cosmopolitan nature of tourism generating societies and the pluralistic nature of tourism receiving societies make the notion of nationality improper to demarcate peoples' cultural backgrounds.

Despite the shortcomings of nationality, national culture has an indisputable effect on tourist behaviour. For example, recognising the limitation of nationality in representing culture, Gursoy and Chen (2000) observed differences in information searching behaviour among the German, British and French tourists. Yuan and McDonald (1990) found motivational difference among Japanese, German and British tourists. Pizam and Jeong (1996) emphasised the role of national culture that it is especially influential in the case of perceived nationality differences where participants in tourism communities tend to categorise tourist behaviours base on their nationalities (Calantone and Mazanec 1991; Pizam and Jeong 1996). Pizam and Sussmann (1995) concluded that,

> *"national cultures have a moderating or intervening impact on tourist behaviour, and if properly controlled and/or used with other variables, would add significantly to one's understanding of tourist behaviour" (p.905).*

Some tourism researchers have attempted to avoid using nationality because "by over-focusing on behaviour of different nationalities in marketing analyses, very important descriptors might be overlooked" (Flognfeldt 1999: 123). Flognfeldt, Jr. (1999) used the concept of 'geographical origin' in his study of tourist segmentation. Reid and Reid (1997) segmented island tourists' spending and leisure behaviour using 'geographical origin'. It revealed that 'geographical origin' can distinguish tourists' travel characteristics and profiles fairly well. It can provide a conceptual and practical basis for tourist behaviour research and serves as a managerially efficient method of market segmentation (Reid and Reid 1997).

Another advantage of using 'geographical origin' instead of nationality is that it could separate tourists into broader categories and permit researchers to explore not only cultural differences of tourists, but also the implication of cultural similarity on tourist behaviour. In Wee *et al.*'s (1986) research, they examined the differences of the destination image tourists had from four tourism regions – North America (USA and Canada), Australasia (Australia and New Zealand), Western Europe and Asia (Japan). Choi and Chu (2000) also used region as an entity to investigate tourist satisfaction the degree of satisfaction in local accommodation of international tourists. Two groups of tourists from two different regions were defined. 'Asian travellers', were travellers from China, Taiwan, Japan, South Korea or Southeast Asia, whereas 'Western travellers' were the tourists from North America, Europe, Australasia. All this research confirmed that tourists from same regions behave similarly but differently with those from other regions.

It is not a new ground for tourism researchers to investigate the impact of cultural identity on ethnic group's travel behaviour. Ethnic subculture generates special types of travel behaviour. One of the impacts of ethnicity is often relates to the type of visiting family and relatives travel (VFR) (Jackson 1990; McKercher 1996; Seaton and Palmer 1997). Besides the normal push-pull motivation of tourism, travelling to the ancestral home, seeking cultural identities and examining and evaluating oneself are main motives for these tourists (Baloglu and Uysal 1996; Crompton 1979; Crompton and McKay 1997; Dann 1981; Esman 1984; Thanopoulos and Walle 1988; Yuan and McDonald 1990).
Another key impact of ethnic tourism is that tourism activity, like immigration or other inter-ethnic contact, involves deep-seated cultural relationships. Agarwal and Yochum

(1999) investigated the relationship of race and spending behaviour of Asian, African, Hispanic and white American tourists. Philipp (1994) used race to explore the travelling preferences of American black and white tourists. All this research provided evidence that some types of tourists' travelling preferences can be significantly associated with race. The challenge of using ethnicity or race in explaining cross-cultural tourist behaviour is how ethnic tourists from same tourism regions or nations are different and/or similar to each other, and to what extent their differences are comparable with the extent of their similarities.

As discussed in Section 3.3.6, a tourist establishment, through the language it uses, constructs and defines the tourist experience and destination images (Hughes 1995; Huisman 1999; MacCannell 1976; Pearce 1990; Urry 1990; Uzzell 1984). The empirical study of Huisman and Moore (1999) of German-speaking tourists to New Zealand verified the relationship of language and tourist behaviours. The tourists regarded language as a key factor in determining their experiences of the authenticity of local culture. Moreover, the level of the host's understanding of tourist's language may detrimentally affect their experience. Language has also been used as an operational variable of culture. For example, a series of Canadian surveys conducted that marked differences occur in the vacation habits of English and French Canadians even though they live in similar national settings, but have unique value and language distinctiveness (Garrett 1980; Richardson and Crompton 1988a; Richardson and Crompton 1988b; Sussmann and Rashcovsky 1997). The results confirmed that vocational differences existed between French and English Canadians and are primarily attributable to variations in culture that is functionally represented by language. Similar results have been found in Belgium where Flemish and Walloon holidaymakers exhibit distinct spatial preferences (Institut National de Statistiques 1980). A shortcoming occurs in such research as that occurring in ethnic tourism research. Although the research showed the distinctive effect of language, it cannot empirically separate the effect of language and/or nationality of tourists. This leads to a proposal for the combined use of both nationality and ethnicity in cross-cultural studies.

The function of value system as a main cultural factor has been studied in tourism research extensively (Graburn 1983; Muller 1989, 1991; Sussmann and Rashcovsky 1997; Um and Crompton 1990; Woodside and Lysonski 1989). Value systems can be seen as a special perspective of culture phenomena. National culture fosters special values in people and these values become guiding principles, and accepted ways of living. Tourism, as with other forms of behaviour, is an expression of the significant values of a cultural group. Therefore, it would be expected that as those significant values vary, so too would tourist behaviours. Though attempts have been made by cross-cultural researchers, one difficulty in using value system as operational variable is that values are very difficult to separate from culture. For example, Woodside and Lawrence (1985) in a study examining the benefits realised from travelling to Hawaii, noted a significant difference between Canadian, American, and Japanese visitors. But the value dimensions they used are either very simple, or vague to distinguish from 'culture' itself. Therefore, only a tentative conclusion can be made about the relationship between a value system and cross-cultural tourist behaviour.

Though direct comparison is a very powerful tool to reveal tourist behaviour, the indirect comparison is another effective way. It is seen as a supplement to the direct approach because sometimes, the outsider may be able to see things with less preconception than the people who are involved in it. Research using this approach produced very similar results, that in many situations, local communities of tourism industry have found that tourists are differentiated by their cultural and/or national backgrounds. Most of this research used nationality as cultural unit (Boissevain and Inglott 1979; Pizam *et al.* 1997; Pizam and Jeong 1996; Pizam and Reichel 1996; Pizam and Sussmann 1995).

One of the most remarkable indirect cross-cultural tourist behaviour studies was carried out in collaboration by a number of tourism researchers from different countries. They conducted a series of studies to explore the effect and role of nationality in differentiating tourist behaviour during 1995-1997. Tour guides from the UK, Israel, South Korea and Holland were approached to express their views toward tourists of different nationalities.

Significant variation was found in perceived behaviours of tourists across nations (Pizam *et al.* 1997; Pizam and Jeong 1996; Pizam and Reichel 1996; Pizam and Sussmann 1995).

In the meantime, some similarities were also identified among tourists from certain nations. One of the interesting findings among these four researches is that tourists from Asian countries show enough similarities to make them one group as opposed to those from Western countries from which strong similarities within were identified as well.

One major type of indirect cross-cultural research is conducted in the context when hosts and tourists encounter. Cross-cultural differences in tourist behaviour are explained from the perspective of host cultures. Tourists from different backgrounds hold various degrees of differences with the host culture, in other words, hold different cultural distances. As argued in Section 3.4.2 that the critical variables in cross-cultural tourist-host encounter is the extent of the cultural similarities and differences between participants, but not necessarily culture itself.

In Dimanche's (1994) empirical research of the impact of cultural differences on the cross-cultural interactions between hosts and tourists, he revealed that the extent of cultural differences or similarities between host and guests could affect the behaviour of tourists. However, though the research highlights the impact of cultural distance on host-guest interaction, it does not indicate how different tourists react on the basis of the degree of the cultural difference. Reisinger and Turner (1998b) attempted to answer the question using four dimensions to express cultural distance between the host and the guests in their research of the interaction between the Korean tourist and the Australian hosts. The four dimensions are communication and understanding the tourists, display of feelings, interaction and idealism. The identification of these dimensions advanced the understanding of the concept of 'cultural distance' and its impact on tourist behaviour consequently, but the degree of cultural differences, i.e. 'cultural distance' is not clearly identifiable. Further it is not a direct cross-cultural study, but a study of host and guest interaction. Further work needs to be done in this direction as proposed by Reisinger and

Turner (1998b), "cultural differences should be measured and analysed as they add significantly to an understanding of tourist behaviour" (p. 101).

## 3.5 SUMMARIES OF SOME RESEARCH RESULTS ON THE BEHAVIOURS OF AMERICANS, BRITISH, JAPANESE TOURISTS AND TOURISTS FROM THE GREATER CHINA REGIONS (GCRS)

Research in cross-cultural comparison shows that there are distinguishable cultural families occupying the Western, the Southeast Asian, African, and American. It is difficult for a cross-cultural research to cover a well-balanced participation from all these cultural areas. Therefore in this research the international tourists selected are American, British, Japanese, and tourists from the GCRs. The choice of these countries is dictated by their significant impact on tourism development in China as well as their geographical locations. A detailed justification for this choice is discussed in Chapter 6. The following part will briefly outline some main travel characteristics and profiles of these four types of tourists derived from previous cross-cultural research in order to support further investigation of their behaviours.

### *3.5.1 American and British tourists*

In tourism studies, much spatial research as well as cross-cultural research are actually based on American and British tourists although they are not particularly evident (such as Cai *et al.* 1996; Dybka 1988; Dybka 1987; Gyte and Phelps 1989; Laarman *et al.* 1989; Lollar and Doren 1991; Menezes and Chandra 1989; O'Malley 1991; Skidmore and Pyszka 1987; Taylor 1987; Yiannakis *et al.* 1991). The culture of these two types of tourists is normally under the categorisation of 'Western culture' as opposed to 'Asian culture' (refer to Section 3.4.3). Although American and British are from different nations, these studies have confirmed that they share a similar cultural identity - Anglo-Saxon culture that exhibits behaviours different from Confucian value system.

For example, in Pizam and Sussmann's (1995) indirect study, British tour guides were asked to express their perceptions on behavioural characteristics of Japanese, French, Italians, and Americans tourists on guided tours. The results indicated that there was a significant perceived difference between the four nationalities. Japanese tourists were the most distinct among the four nationalities, while Italian tourists were the most like the other nationalities. Italian and French are perceived as the most similar to each other. The least similar were perceived to be the French-American pair (Pizam and Sussmann 1995: 914).

Pizam and Jeong (1996) also studied Korean tour guides' views toward American, Japanese and Korean tourists and revealed that American tourists were the most different from the rest, followed by Korean and Japanese tourists who were perceived as the most similar to each other; the most dissimilar pair were Korean and American tourists (Pizam 1999: 404-406). Despite some limitations of this research, such as the use of nationality and the indirect account of the tour guides rather than the direct answers of tourists themselves; results provided evidence that Asian tourists were similar, Western or American tourists were similar, and these two groups were different from each other.

Research also provides evidence about the difference of American and British tourists. Pi-Sunyer (1977) found that Catalans perceived English tourists as stiff, socially conscious, honest, and dependable. Brewer (1984) studied the perceptions of the local Mexicans in Mexico, and found that they have general stereotypes of Americans as cautious, calculating, purposive, and careful with money. In a direct comparison study of Israeli tour guides' perceptions about American and British tourists as well as German and French, found that although they came from similar cultural backgrounds, there were significant differences between them (Pizam and Reichel 1996).

### *3.5.2 Japanese tourists*

Japanese tourist behaviour is widely analysed (Ahmed and Krohn 1992; Bailey 1992; Cha *et al.* 1995; Dace 1995; Iverson 1997b; Iverson 1997a; Keown 1989; Murakami and

Go 1990; Nozawa 1992; Oum and Lemire 1991; Reisinger and Turner 1998a; Sheldon and Fox 1988). Many times, Japanese tourists and some other Asian tourists, such as Korean tourists, have been researched as one group of tourists as opposed to the tourists from Western countries. Research has proved that although these tourists are different in many ways, as a group of tourists all from Asian countries, they have more similarity with each other than with Western tourists, such as American, French or British tourists (Choi and Chu 2000; Wei *et al.* 1999). They are fond of travelling to Asian countries that are based on Confucian philosophy (Business Korea 1991). They pay much attention to food and cuisine style, generally high spenders and enthusiastic shoppers. Most of the tourists prefer to travel in-groups or with family rather than individually, and so on (Business Korea 1991; Prideaux 1998; Yarmy 1992). Explanation of this has been related to their cultural background.

Nevertheless differences among Asian tourists are identified. In March's (1997) empirical research using interviews with travel agents, he found that tourists from five Asian countries, Japan, South Korea, Taiwan, Thailand and Indonesia have different behaviours in mainly three aspects, (1) the tendency for group rather than individual travel; (2) the general desire for luxury and brand-name shopping experiences; and (3) the disinclination to give direct feedback to the service provider about service quality. Although the research just offers a starting point for more in-depth and rigorous research into the differences of the travel behaviours of Asian tourists, it indicated that although these tourists share quite similar values, which are shown in the three dimensions, they are still different. The Confucian's value elements of keeping face and maintaining harmony are contributable to the identification of the three dimensions. The similarity of tourist behaviour in these dimensions is largely reflected in the strong Confucian value system of these tourists.

### *3.5.3 The Chinese and overseas Chinese tourists*

Studies of Chinese tourists' travel behaviour have been very scant; researchers have studied Chinese tourist behaviour with a variety of origins. Origins of these tourists are firstly "quasi-state" (Butler and Mao 1995; WTO 1991) of China such as Hong Kong and Macau SAR and Taiwan, which are or have been separate political units with China (Butler and Mao 1995). The second type of origin refers to countries where overseas Chinese immigrated to such as America and Southeast Asian countries. The third type of origin is mainland China. Studies of Chinese tourist behaviour mainly using the first two origins reveal that tourists hold very evidently Confucian value system which has been regarded as the essence of Chinese culture (such as Hashimoto 1996; Lang and O'Leary 1997; Master and Prideaux 2000; Mok *et al.* 1995; Mok and DeFranco 1999; Mok and Lam 1997; Qu and Li 1997; Wang and Sheldon 1995).

One important research regarding Chinese tourist travel behaviour is Mok and DeFranco's (1999) study using Hofstede's four cultural dimensions in comparison with Confucian value system. They found that Chinese values are reflected in six aspects and affect the travel behaviour of these tourists. They are respect for authority; external attribution; interdependence; group orientation; maintaining 'face' and harmony. For example, they hypothesised the Chinese are more likely to engage in shopping activities during their trips due to their inclination to maintain harmony among various social and family relationships. This hypothesise is confirmed by the study of Mok and Lam (1997), who suggested that the Chinese respect for authority can be witnessed by the giving *Li Wu* or gifts brought back from foreign places to elders or parents, such as the Taiwanese tourists who are well known for their excessive shopping behaviour (Mok and Lam 1997; Mok and DeFranco 1999). Though this study is not a direct cross-cultural study, the dimensions used are proved to be effective cultural values.

Face value is also important to the Chinese which is reflected in that they are more brand conscious in hotel selection and shopping, etc. than the Westerner. A similar study has been conducted by Summers and McColl-Kennedy (1998) about the decision making of American and Chinese Malaysian tourists in Australian. They found that, in general, individuals from another nationality with different cultural values do not differ in terms of process or sequencing of the decision stages they use when considering Australia as a holiday destination. However, the motivation, nature of perceived risk and the cultural values did differ between these two groups of tourists. The cultural dimensions they used to measure the differences of tourists are (1) warm relationship; (2) being well-respected; (3) fun and enjoyment; (4) self-respect; (5) a sense of belonging; (6) security; (7) self-fulfilment; (8) a sense of accomplishment; and (9) excitement. The authors concluded that the differences between Chinese tourists and American tourists may stem from their cultural values, such as Confucian value system which values relationship and fulfilment, values the belief of one's destiny, and is less likely to take risk.

In a study of Chinese tourist and Australian host, Reisinger and Turner (1998c) have used language to group ethnic Chinese. They found that although the tourists were not from the same nation, the majority of them were of Singaporean nationality, followed by Chinese, Taiwanese, Hong Kong SAR, Malaysian, Indonesian, Indian, Philippine, and Vietnamese nationality. They all speak Chinese languages of different dialects. It confirmed these groups of tourists showed similar cultural preference, the cultural difference exists between the Chinese-speaking tourists and the Australian host along six cultural value dimensions. They are self-actualisation, responsiveness and courtesy, interaction, understanding the tourists, display of feelings and social obligation. It is significantly different with the local Australian culture. The study supports the findings in the previous literature of the cultural differences between Western and Asian societies, especially Chinese cultures. The second significance of the research is the use of the Chinese ethnic groups as one cultural group, which is represented by language. Similarity is found among them no matter from where they originate, and differences found between them and the Western culture group, which is represented by local Australian culture.

## 3.6 Summary and Conclusions

This chapter has discussed the issue of the cross-cultural relevance of tourism and tourist travel behaviour. The difficulty with much of the existing literature in cross-cultural studies is that it is not clear exactly what aspects of international tourist behaviours are relevant to their cultural backgrounds and it is not always obvious what the term 'cross-cultural' means. The chapter attempts to do two things pertinent to the issue of cross-cultural tourist behaviour research.

To begin with, it introduces the concept of culture. Cultural difference is also examined in order to make the concept of culture manageable. The cultural dimensions which have been used by many cross-cultural researchers to underpin cross-cultural studies (such as Bond 1988; Chinese Cultural Connection 1987; Hofstede 1980a, 1991; Summers and McColl- Kennedy 1998; Usunier 1996, 2000) were discussed. Confucian Dynamism was specifically discussed because its relevancy to the Chinese cultural system. Other potential variables discussed emphasise on language, value system, nationality and ethnicity and their relationships with culture.

Moreover, to further relate these concepts back to the main aim of this research, they were redefined in terms of the distinctive requirements of tourism contexts. Some results of the cross-cultural tourist behaviour research were examined. Although the frameworks established by many cross-cultural researchers do not relate directly to the tourism phenomenon, they do appear to provide a structure within which examinations of the issues of cultural and cross-cultural relevance of international tourist behaviour are capable. In introducing these, the misconceptions, gaps and limitations of the existing research results are revealed. The chapter suggests that the cross-cultural variation in tourist behaviour is most likely to be specified into some specific or a combination of cultural dimensions or cultural elements. Finally, the cultural backgrounds of some international tourists in China from selected origins were introduced.

Although it is true that literature contains some studies of cross-cultural tourist behaviour, and most of them confirm the existence of cross-cultural differences in tourists' behaviour, the tourism literature indicates the gaps in cross-cultural research (Dimanche 1994). One of the major gaps is that many researchers used different cultural elements and confirmed their effects to differentiate tourist behaviour, but most of the evidence advanced did not permit an explanation of why those behavioural differences exist. An assumption of the relationships between the elements, such as language, origin, and culture has been made; however they seldom provide any proofs on this assumption. In addition, most of the research used a sole element to rectify culture, such as equating culture with nationality, language, region or ethnicity. These variables' ability to reflect culture's influence is still tentative. That is why many of the cross-cultural analyses are usually just a cross-national analysis, or cross-ethnic analysis. Though some researchers have used dimensional approach to investigate cultural difference (such as Reisinger and Turner 1998c; Summers and McColl-Kennedy 1998), their dimensions are mainly the effect of behavioural difference but not the cause of this difference.

As discussed above, solely using nationality or other cultural element as a cultural variable will impede the full explanation of the cultural difference in tourist behaviours. Because they may affirm the variables studied might differentiate tourist behaviour, the effects of other variables are not considered. Therefore, it is difficult to distinguish if the effect of cross-cultural differences or similarities is due to the variables studied or some other variables. Furthermore, to what degree they defer comparing with the extent to which they are similar. As a result, some of the research is not regarded as conclusive, because it does not contain investigation on the collective effect and the entanglement of all the culturally related variables in cross-cultural differences in tourist behaviour, rather only the isolated effect of one or two variables. A further gap in the cross-cultural tourist behaviour research is the lack of the study in the SDT in the cross-cultural context. This gap will be further elaborated in Chapter 4.

To fill these gaps and to advance the cross-cultural understanding of tourist behaviour, the research will use the dimensional approach on the basis of some of the previous conceptual establishments. Cultural proxies and cultural differences constructed using different cultural bearing elements, such as nationality, language, ethnicity and value systems will be combined to distinguish tourist cultural background. The detailed methodological design will be explained in Chapter 6.

# 4 THEORETICAL ISSUES IN THE STUDY OF THE SPATIAL DISTRIBUTION OF TOURISTS

## 4.1 INTRODUCTION

The topic of the SDT and the spatial behaviour of tourists have been widely researched in the area of tourism geography and tourist behaviour. The concept of the SDT, or the movement patterns of tourists, is central to tourism studies because it explains the way that tourists travel and constitute an integral part of the very existence of the tourism subject. In general, researchers have investigated the topic from various perspectives, and numerous psychological and geographical theories have been developed. They on the whole explain where, why and how tourists travel on the surface of the earth.

The purpose of this chapter is to provide a broad assessment of the relevance of certain theoretical approaches for understanding the spatial behaviour of tourists, in order to offer guidance and support to the advancement of this research. In specific, the aims of the chapter are:

1. to summarise the theoretical composition of the study of the SDT;
2. to explain some of the main types of models in the study of the SDT and their theoretical roots, and to summarise the basic properties of these models;
3. to contrast and compare the properties and characteristics of these models in the study of the SDT;
4. to reinforce the empirical literature in the study of the SDT;
5. to evaluate some of the key explanatory variables of the SDT which have been examined in the literature, and prepare them for this research;
6. to summarise the major limitations of the literature and elucidate how these can be addressed by this research.

The remainder of this chapter starts with a brief overview of the basic approaches and theoretical frameworks incorporated in the study of the SDT. Then a number of theories relating to the three aspects – the pattern, direction and intensity of the SDT are discussed. A series of mathematic models as well as empirical research results are evaluated. Following this, a range of cross-cultural research in the SDT is introduced. The chapter will conclude with a summary on the limitations of the literature and incorporate them into the goal of this research.

## 4.2 FRAMEWORKS UNDERLYING THE STUDY OF THE SDT

Despite some evident gaps that exist in the literature of tourism geography and the SDT, a foundation of this research has emerged (Fennell 1996). As clarified in Chapter 2 (refer to Section 2.5), for the most part, the study of the SDT is concerned with the aggregate movements of tourists relating to the three features of the SDT – the pattern, origin-destination configuration and intensity and volume. These three notions of movement are related to the modes, directions, and frequencies of tourists' travel. On the basis of this conceptualisation, the review of the theoretical foundations of this research will be explored along these three notions of the SDT.

To start with, an overview of the framework incorporated in the theorisation of the study of the SDT is presented. Three underlying dimensions are identified which are important underpinnings of the theorisation of the SDT. They are the geographical scale, the degree of abstraction of tourist behaviour and the time-span of the SDT research. Because much of tourism research is situational specific, these dimensions abstract the comparable elements, build a common structure, and thus define the scope of the applications, validity and feasibility of the research results. The clarification of these three dimensions will also be beneficial to this research.

### *4.2.1 Geographical scales of the SDT*

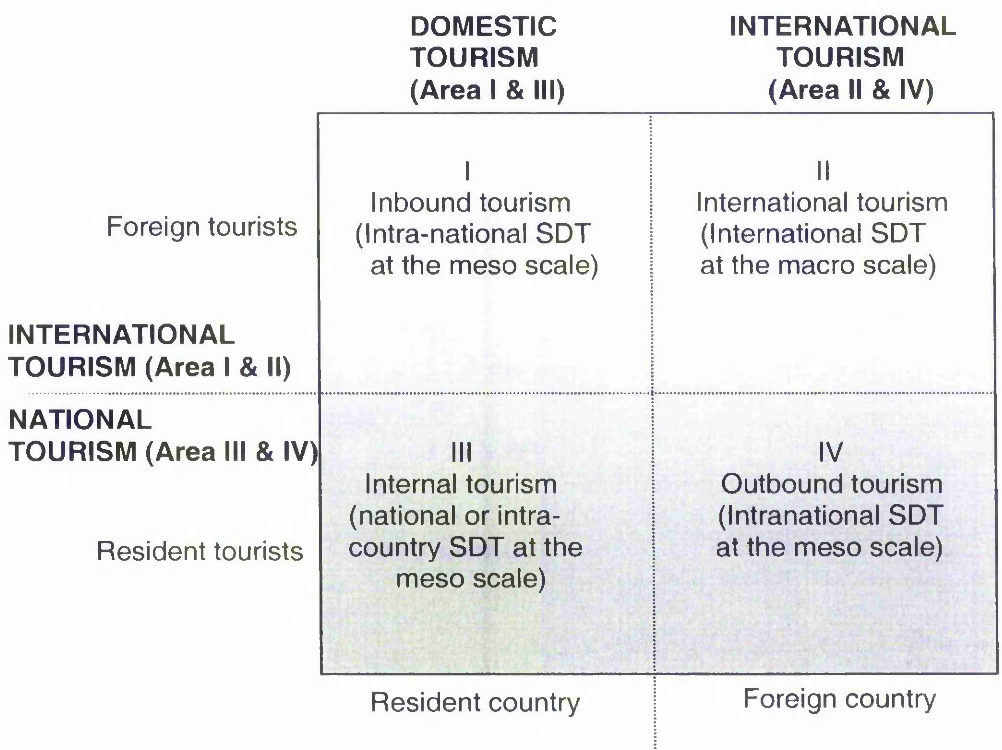
The first framework is concerned with the geographical scale of the SDT research. The movements of tourists link a range of tourists' places of origin to their travel destinations and thus constitute a dynamic system of the SDT. Because the reasons behind the volumes and intensities of the SDT between origins and destinations, and the levels of the participation and the types of tourist behaviour in on-site tourism activities are different, the study of the SDT should always reflect the scale of the analysis. The scale of tourism spatial research typifies the measurement and operationalisation of the determinants and characteristics of tourists' movement, in a simple term, the geographical range of tourists' travel (Uysal 1998). It defines if the focus of a research is on an entire region, on states, or on particular destination, etc. (Edgell and Seely 1980).

According to the WTO, the typology of tourists can be of the following categories (WTO cited in Chadwick 1994: 66):

1) International tourism consisting of inbound tourism, that is travel to a country by non-residents and outbound tourism, that is residents of a country visiting another country;
2) Internal tourism where residents of a country visit their own country;
3) Domestic tourism consisting of internal tourism plus inbound tourism (the tourism market of accommodation facilities and attractions within a country);
4) National tourism consisting of internal tourism plus outbound tourism; the resident tourism market for travel agents and airlines.

Figure 4-1 illustrates different types of tourism and the relationships between them. The whole square represents the tourism industry as a whole. It can be divided into four tourism types based upon two dimensions – the types of tourists and the types of countries. The four tourism types are represented by the four areas respectively. The concept of foreign in this figure is relative to the concept of resident. Area I represents inbound tourism because it is foreign tourists visiting a resident country. Area II represents international tourism, because it is foreign tourists visiting another foreign country. Area III represents internal tourism because it is resident tourists travelling within their own countries. Area IV is outbound tourism because it represents resident tourists visiting a foreign country. These four areas can then be grouped into three larger categories. Area I, II, and IV belong to the international tourism category. Area I and III belong to the domestic tourism category. Area III and IV belong to the national tourism. Some of the categories are overlapping, such as Area I is a type of domestic and international tourism; and Area IV is a type of national and international tourism.

**Figure 4 - 1 Typology of the geographical scales of the SDT**




Based on the typology of tourism, the SDT have a variety of geographical scales. Three main types of SDT can be identified. The first type is the international distribution which refers pair-wise exchanges of tourist traffic among nations or continents. International tourism (Area II) belongs to this type. The second type is the intra-national distribution, which is within the broader international distribution referring to the dispersion of tourists from a generating country, or the distributing pattern of tourist's distribution within a destination country. Inbound and outbound tourism (Area I and IV) are this type of distribution. These two types of distribution are all a category of international distribution, but the difference of them with Area II is that they are international tourists from one generating country, or travelling within a destination country. At least, one of the origins or destinations is studied at the domestic scale. In a strict sense these intra-national movements may not be international in the same way that the actual linking travel between countries is. However, logically intra-national travel forms an integral part of an international travel system (Pearce 1987a: 61). The third one is the intra-country SDT (Area III), which refers to the movement of tourists who originate and terminate within the boundaries of a given country. Internal tourism belongs to this type of distribution.

International travel can also be considered at a range of broader scales, these include global travel patterns and inter-continental and intra-continental travel patterns which are international travel at smaller scales. The travel is not implemented globally, but within the confinement of regions of the world, such as Europe and Asia. Border tourism is another type of international tourism of some significance. Although tourists are of different nationalities, this type of tourists do not travel a long distance and their travel characteristics are very different from those of long haul travel. Proximity is the major factor here for this kind of travel (Pearce 1987a).

Corresponding to these three types of SDT, the scales of the SDT can be viewed as, down the hierarchical ladder, the macro, the meso, and the micro scale which link to both the geographic origins and the geographic destinations of tourists. Empirical research shows that the study scales impact on research results. The enquiries uncovered at one scale do not necessarily remain pertinent at another. For example in a recreational trip a traveller might be impeded by distance. However in an overseas holiday, distance can be an appealing factor to tourists (such as Perdue and Gustke 1985; Richardson and Crompton 1988b; Williams and Zelinsky 1970; Wolfe 1972).

The macro scale is at the top of the SDT research corresponding to international tourism. Normally the major concerns of studies at this scale are on the direction, volume and pattern of tourist traffic or flows across national borders; the factors that might explain the method of their movements and concentrate on the direct studies of destination-oriented interaction (such as Crompton and Tan 1973; Gormsen 1988; Martin and Witt 1989; Miossec 1976; Pearce 1984, 1987b; Smeral *et al.* 1992; Uysal and Crompton 1985; Williams and Zelinsky 1970; Witt and Witt 1995, 1992).

Distance is identified as one of the major determinants of country-to-country tourist distributions. As a consequence, the resulting travel behaviour of tourists is examined through concepts such as the gravity model or the distance decay concept. (Perdue and Gustke 1985; Richardson and Crompton 1988b; Williams and Zelinsky 1970). It is not very common for studies at this level to focus on the travel patterns of tourist movements. This might be due to the reason that the data of tourist distributions between countries, and their ways to foreign destination, are not easy to obtain. Also, the routes of tourists travelling across borders are less complicated than of those travelling within a nation. Country-to-country travel normally takes the form of a straight-line, namely from an origin to a destination country and then returning back to the origin.

The approaches applied in the study of the SDT at the macro level are mainly aggregate. This approach will be further expanded in the next section. One of the main deficiencies of using this type of approach is that the understandings of the SDT are not individually oriented but group oriented. The study of the SDT at this level is important in that it gives the broadest understandings of the nature, and the causes of the SDT in terms of collective behaviours of tourists and reflecting the cultural characteristics of the tourists as identifiable social groups.

Despite the broad-spectrum macro scale or international level SDT research, the lower scale of the SDT research is intra-national scale corresponding to intra-national tourism (such as Forer and Pearce 1984; Murphy and Keller 1990; Morley 1994a; Oppermann 1992b, 1993a; Pearce 1987b; Shirasaka 1980). Research at this level is better balanced in all three features of tourists' movements than research at the macro level, i.e. the direction, volume and pattern of the SDT. Research techniques used are also rich. Research at this scale can be seen as meso level research.

The lowest scale of study is the micro scale corresponding to inter-country tourism. Research at this scale has focused on disclosing the travel behaviour of tourists in domestic situations such as defining the vacation hinterlands of tourist-generating urban areas (Campbell 1967), or delimiting the market areas of particular destinations or regions (Perdue and Gustke 1985; Var *et al.* 1990) and certain facilities and attractions (Darnell *et al.* 1992; Mings and McHugh 1992; Smith 1986). Research at this level is also referred to as inter-regional studies. One deficiency of studies at this scale is that the explanation of the travel behaviour of tourists is solely based upon the destination region, but not the origin. This is because studies at this level are mainly of domestic tourists or regional tourists travelling to specific regional tourism resorts, or recreational sites, but are rarely of international tourists. A better understanding of these studies should be concerned with both international tourists and domestic tourists within both tourist generating and receiving regions.

Based on this classification, it is necessary to stress that this research studies the SDIT within a destination country – China; therefore, is an intra-national, i.e. meso scale research.

### 4.2.2 Degree of aggregation of the SDT research

The second framework relates to the degree of aggregation of the SDT research. The idea of aggregation is actually an analytic approach to travel behaviour. The degree of aggregation of research principally refers to the level of abstraction of the investigation of tourist behaviour. It is closely linked to the scale of research. Based upon the degree of aggregation, approaches to the SDT analyses can be categorised into two groups – aggregate and disaggregate studies.

The use of the aggregate approach is quite often at the macro level. It focuses on discovering the determinants of human behaviour from the objective forces of social dynamics. On the contrary, the use of the disaggregate approach is normally at the micro level stressing an individual's behaviour and acknowledges that these individuals have free wills and make rational choices. One main practical difference between these two approaches practically lies on the method of measurement and the scale of the choice set and/or the explanatory variables. The use of aggregate data in tourism research used to be very prevalent (such as Pearce 1987b; Oppermann 1992b, 1993a; Martin and Witt 1989; Darnell *et al.* 1992; Witt and Witt 1991; Smeral *et al.* 1992). Studies of the SDT at the macro and the meso level represent a marked degree of aggregation of individual travel behaviour. Aggregate study measures the choices of tourists at the macro level and describes the details of their group characteristics. However, this approach has also created various traditional problems in tourism studies. Practically, the aggregate approach is constrained by the quality and type of data. Tourism researchers have argued as early as 1970's, that the inadequacy of the statistics in terms of their scarcity, homogeneity and inconsistency in definitions across nations has placed consideration constraints on the development of the SDT research (Armstrong 1972).

Technically, the aggregate approach lacks a widely applicable method to measure distance and hence the utility of travel. Researchers also argue against the aggregate method because of the unrealistic assumptions it makes about an individual's homogeneous choices. It has shown from empirical research that the use of the aggregate approach in an analysis can result in a loss of precision of the estimated parameters, if the aggregate groups are not homogeneous with respect to the value of the explanatory or independent variables (Ben-Akiva and Lerman 1997; Kmenta 1971).

As tourism researchers have been seeking to explain the reason of what they see and to identify various relationships in tourism phenomena, the representation of these phenomena at a general level is clearly not enough. Making the leap from an aggregate approach to an individual-based behavioural approach is inevitable. This is a shift of the way of understanding the tourism subject from asking "where and what" questions to explaining "how and why" things happened to an individual tourist as aggregate behaviour results from the discrete decisions of individuals. This leads to the emerging of the disaggregate approach.

The term 'disaggregate' has been roughly used to imply 'behavioural' (Richards 1982; Yai 1989). Much research has used this approach (Hanson 1980; Huybers and Bennett 2000; Morley 1994a; Oum and Lemire 1991; Schroeder and Louviere 1999; Sheldon 1995; Siderelis *et al.* 1995; Stynes and Peterson 1984; Train 1998). The disaggregate approach estimates models directly on the micro level data based on individual or household specific information without first aggregating it to a collective level. It focuses on individual tourists' discrete choice behaviour and places the emphasis on the individual as the unit of tourism studies and allows for a much-refined definition of the individual's preference.

The theoretical shift in the SDT research from the aggregate perspective to the disaggregate perspective is derived and sustained by methodological enhancement. The development of the disaggregate model is based on discrete choice analysis methods (Ben-Akiva and Lerman 1997; Fesenmaier 1990). Basically, the choice set in tourists' decision-making comprises two types. One is the continuous choice set, the data of which forms much of the basis for economic demand analysis. The other choice type is a discontinuous choice set, which is at the heart of the disaggregate analyses. Discrete choice models examine individual level tourists' choice behaviour amongst a finite number of discrete alternatives, as a function of a wide number of explanatory variables that can also be defined and measured on the individual level (Richards 1979; Ruijgrok 1979). Although the explanations at the aggregate level, emphasise system variables of tourist behaviour, they are not necessarily incompatible with modes of explanation that emphasise individual variables at the disaggregate level. "The two types of variable are intricately linked" (Desbarats 1983: 353). The degree of aggregation or disaggregation depends on the choice and measurement of the selected explanatory variables in describing the desired situation.

### *4.2.3 Evolutionary and temporal element of the SDT*

The patterns of tourists' travel are not static but change over time. The third dimension of the study of the SDT is concerned with the effect of time on the spatial behaviour of tourists. Tourism researchers have for some time recognised the importance of studying space and time together in tourism research. Research incorporating time as an element can be characterised into two aspects. The first aspect of research is concerned with the evolution of the spatial behaviour of tourists and the development of the tourism system over time (Butler 1980; Debbage 1991; Doxey 1975; Uysal 1998). Models reflecting this characteristic are the dynamic models of SDT that stress the changing nature of the tourist system as well as the SDT over time. Models developed include 'the life cycle model' of tourist destinations, tourism seasonality effect models and time series models of tourism demand and tourist behaviour (Darnell *et al.* 1992; Kemperman *et al.* 2000; Qiu and Zhang 1995).

The second aspect of the temporal influence emphasises the time constraint on the spatial behaviour of tourists. Because tourists have limited time resources, their choices of travel are limited by the availability of this resource. Time is one of the major determinants of tourist demand and tourist flows (Bull 1991; Cooper 1981; Forer and Pearce 1984). Cooper (1981) maintained that time is an "ephemeral and dynamic resource and its value quickly enters the consciousness of the tourist who must therefore utilise his time in the most efficient way possible" (p.360). Models developed in this aspect include, the spatio-temporal model (Fennell 1996; Miossec 1976; Turner and Ash 1975), the time-budget model (Anderson 1971; Pearce 1988a), the time-series model (Armstrong 1972; Blackwell 1970; Dharmaratne 1995; Fritz *et al.* 1984; Martin and Witt 1989; Papatheodorou 2001; Peterson *et al.* 1985) and others. They have confirmed that time is one of the influential and accurate factors in tourist demand.

However, although time is important, and models built using this element such as the simple time-series models perform well, the use of time as an explanatory element has aroused some arguments. The disadvantage of these models is that they do not place emphasis on explaining economic and business phenomena or bring about an increase in the understanding of the relationships between and among a variety of variables. They do not take into account the impact of the explanatory variables on the change of the SDT (Martin and Witt 1989: 425-426). Although more complicated time-series models that attempt to combine time-series and more econometric variables have been attempted, they are limited in that they normally have to meet the rigid requirement of sufficient time-series data for model building. The type of data and the explanatory variables used in temporal analyses are severely restricted. Certain constraints on the SDT are largely irrelevant in time-series analyses (Crouch 1994b). In this case, the explanatory variables used in model building are mostly general macroeconomic variables such as the size of population and GNP *per capita.* Many variables which are specific to an explanation of the SDT analysis such as individual variables, have to be excluded from the model and it is difficult to break tourist demand down by mode of travel, behavioural background, and demographic characteristics (Armstrong 1972); they also lead to a high possibility of technical difficulties and add further challenges (Artus 1972a; Artus 1972b; Blackwell 1970; Bond and Ladman 1972). For example, Papatheodorou's (1999) study of the demand for international tourism in the Mediterranean region used the Almost Ideal Demand System (AIDS) including a time trend. This research concluded that the search for an explicitly dynamic specification of the AIDS model proved to be rather unsuccessful, due to the inherent complications and measurement problems. He found that the results may be considered reasonably satisfactory from a statistical point of view, but it is difficulty to provide satisfactory economic explanations for some of the coefficients (Papatheodorou 1999).

Contrary to time-series methods, the cross-sectional method assumes that a static equilibrium exists in tourist behaviour. This assumption is based upon the realisation that tourist behaviour is relatively stable in a short-term. This is fundamental for tourist behaviour studies, because many conceptual simplifications of the real world need a static view of behaviour over a temporary time period (Thill and Thomas 1987).

In Amstrong's (1972) empirical study of the SDT between 18 origins and 27 destinations, he confirmed that the influencing variables to predict the dependent variable of the tourist arrivals in each country were likely to be stable through the time period concerned. Gray (1973) also discovered that for the period of his study, tourists' tastes and preferences remained constant. He argued that although the existence and location of special tourism attractions might cause temporary shifts in tourism demand, such movements are relatively small in relation to the average volume of expenditure and are unlikely to have a significant effect upon the parameters of the demand model. In this situation it is easy to isolate the influences of these determinants from time, and depict the finer characteristics of the SDT. Technically it is also helpful in avoiding the high possibility of multicollinearity without considering the time element; therefore more explanatory variables can be added, and the explanation arrived at be more specific to the phenomena in study.

## 4.3 THE PATTERNS OF THE SDT

Identification and measurement of the spatial patterns and variations in the activities and movements of tourists have long been a major concern of tourism research (Fennell 1996; Mitchell 1979, 1980; Perdue and Gustke 1985). Research in this area explains how and where tourists travel to. In the past decades, numerous models and theories have been developed to explain the patterns of the SDT and the structures of tourist space.

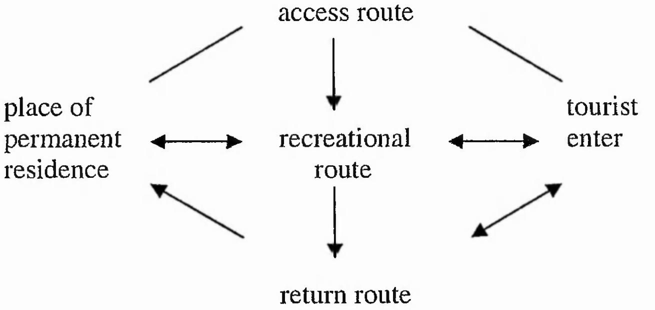
Three types of theories and models can be summarised and they have played important roles in the studies of the travel patterns. They are the travel route model that describes the manner of tourists travel; the central-peripheral hierarchical model that identifies the structure of a tourist's travel route; the destination classification model that identifies the functions that each destination tourists travel to. There are no definite divisions between these three types of models. Each of them is applicable to certain circumstances of the SDT. The travel route model is more suitable to the micro level; the central-peripheral hierarchical model and the destination classification model are relevant to analyses at the micro and meso levels. The three types of models overlap and together provide a better understanding of the nature of tourists' movements.

### *4.3.1 The travel route model*

The travel route model depicts tourists' movements in terms of the ways or routes they travel from origin to destination. Therefore it characterises the manner of tourists' travel. The travel patterns of tourists can be classified into two general types - single and multiple destination travel (Jeng and Fesenmaier 1998; Lue *et al.* 1993). Single destination choice behaviour is simple but still an area in travel route research. In a single destination travel pattern, tourists travel from origins to destinations and return back to this origin. Under this category, one major concern of tourists' movements is the destination choices of the tourists. However, it is not common for tourists to only visit one place in their journeys, especially in long distance travel (Jeng and Fesenmaier 1998; Lue *et al.* 1993; Tideswell and Faulkner 1999). The travel route is also investigated under the category of multiple destination travel. Multiple destination travel simply refers to the type of travel pattern that a tourist from an origin travels to more then one places in his/her journey and then returns back to this origin.

Summarised by Pearce (1987a), the earliest investigations concerning these two types of travel patterns are made by Wolfe (1951), Defert (1966) and Campbell (1966). Wolfe (1951) and Defert (1966) outlined fundamental aspects of the patterns and processes of the spatial interaction inherent in all forms of tourism. However, their explanations did not really separate the two categories of travel patterns; they mainly dealt with multiple destination travel patterns. Researchers following them such as Mariot (cited by Matley 1976), Lundgren (1972) and Rajotte (1975) developed enhanced models based upon earlier research. Mariot's model, which has been cited by various authors (Matley 1976; Pearce 1987a), suggests a three-route model of origin-destination interactions. It suggests that the travel patterns of tourists from their places of permanent residence to their destination normally takes the form of three types of route; access route between the origin-destination pair, recreational route within the destination and return route for them to return back home (see Figure 4-2). Although Mariot's model is very simple and general, it does not distinguish single and multiple destination routes, but provides a glimpse of what travel routes of the SDT really are.

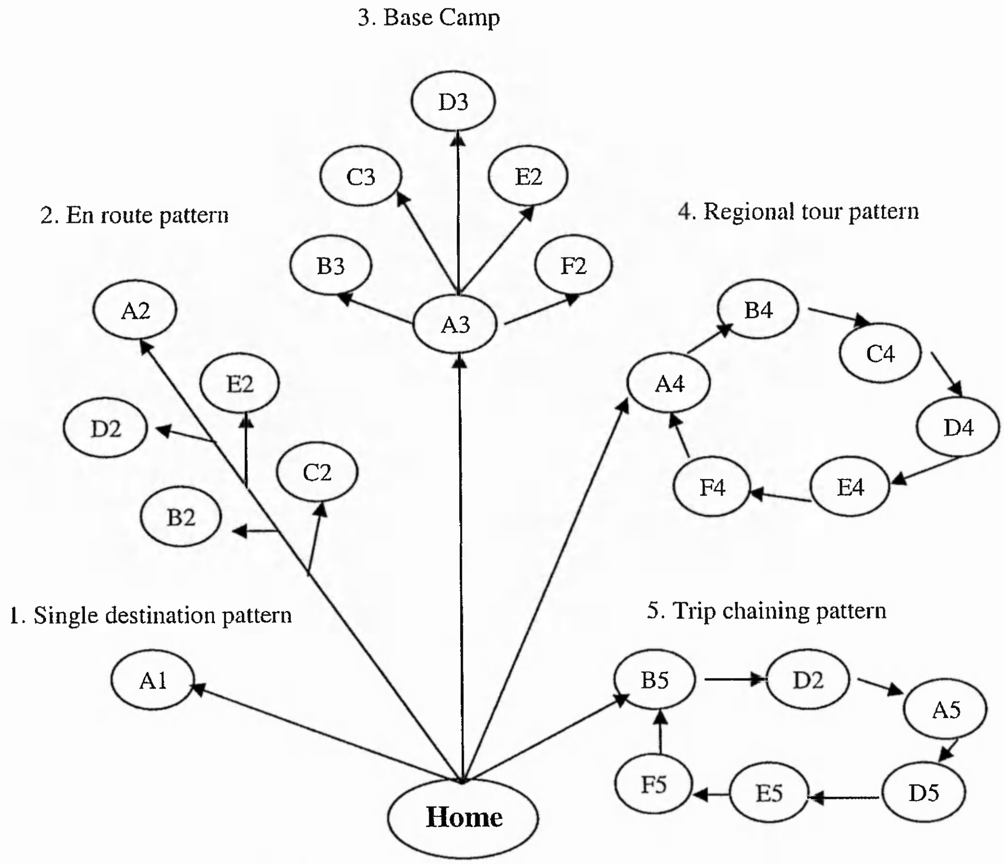
**Figure 4 - 2 Mariot's model of tourists' travel routes between origins and destinations**




Source: Redrawn from Matley 1976 after Mariot, cited by Pearce (1987a: 6).

Combining single and multiple destination travel patterns, Lue *et al.* (1993) distinguished five types of travel route. They are single destination, en route, base camp, regional tour, and trip chaining (see Figure 4-3). The single destination pattern is described as a tourist's travel to only one destination in a journey. The other four patterns are concerned with multiple destination travel. En route pattern suggests that tourists visit some other destinations on the way to and from a target destination. The base camp pattern proposes that tourists visit one important attraction and use it as the base of or gateway to many other small attractions. The regional tour and trip chaining patterns describe similar patterns that tourists adopt to visit a series of places with similar attractiveness. The former assumes a sequential order based on the attractiveness of the places, and the latter implements a circular travel route without sequentiality (Lue *et al.* 1993; Jeng and Fesenmaier 1998). Though the model was proposed as a conceptual tool to classify and model the travel patterns of the tourists, it was not established on an empirical basis. This limitation was then rectified by the research of Stewart and Vogt (1997) in their research of the traveller distribution in the USA. They verified that the model developed by Lue *et al.* (1993) is a useful support for analysing and classifying the travel patterns of the visitors in their research and should be useful in other settings as well.

**Figure 4 - 3 Alternative spatial patterns of pleasure vacation trips**



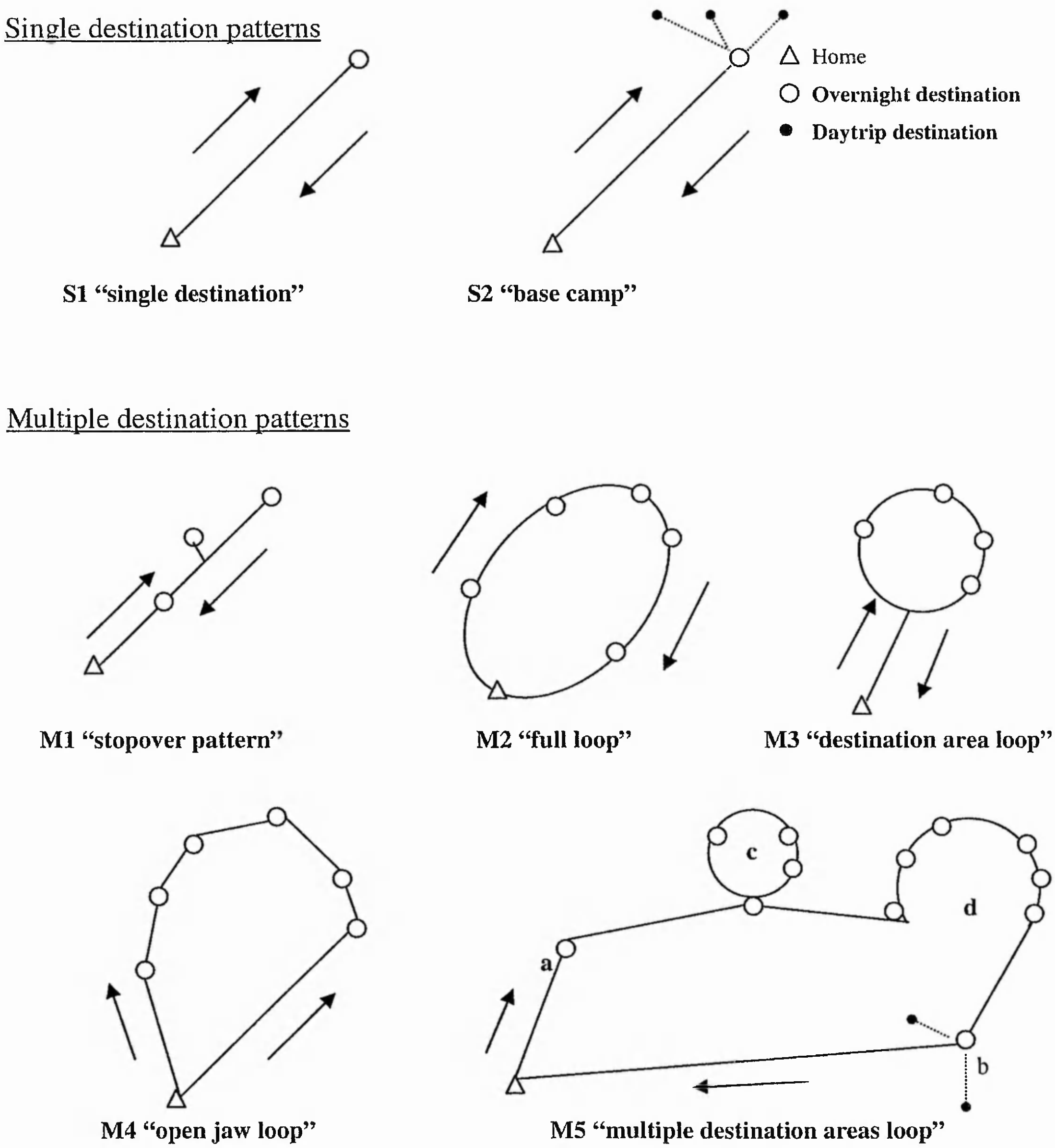

Source: Lue *et al.*, 1993: 294.

Similarly, Mings and McHugh's (1992) empirical study of the spatial configuration of domestic tourists travelling to Yellowstone National Park identified four types of trip patterns. They are, direct route, suggesting that travellers use the shortest route to travel from home to park; partial orbit, describing that travellers travel a portion of their trip over a direct route, and then visit local sceneries in a circuitous route; full orbit, describing a route that is completely circular; and fly/drive route that somewhat resembles the partial orbit route except that the direct link in this type of route is by an airline instead of by road or a highway.

Separating single and multiple destinations, and also focusing on the macro and meso level of the SDT, Oppermann (1995: 58) summarised a group of travel routes particularly applicable to international tourists within a destination region/country. His category separates single and multiple destination travel patterns, and focuses on the macro and meso level of the SDT. Two types of single destination (S1 and S2), and five types of multiple destination (M1 to M5) travel patterns were identified, whereby S1, S2, M1, M2 and M3 correspond to the patterns identified by Mings and McHugh (1992) and Lue *et al.* (1993). M4 and M5 were identified at the macro/meso scale. Four subtypes within M5 were also identified, they are stopover (M5a), single destination (M5b), destination area loop (M5c) and open jaw loop (M5d). M5 is an extension or combination of M3 and M4 that involves international tourists, not only travelling within a destination country but also travelling to other countries (see Figure 4-4).

Despite the differences between these studies, a common characteristic of them all is that they are highly situational specific. Although they have been developed at different levels such as at the micro level dealing with domestic or regional tourism (such as Lue *et al.* 1993; Mings and McHugh 1992; Stewart and Vogt 1996), or at the macro and meso level dealing with international tourism or intra-national tourism (such as Oppermann 1995). Also the destinations chosen for these studies tend to be less diversified in terms of both tourism resources and tourism arrivals; such as the destination country choices of the Malaysian tourists in Oppermann's (1995) research. The generalisation of these research results across different scales of travel pattern and the different destination contexts need to be treated with caution.

**Figure 4 - 4 Intra-national travel patterns of tourists within a destination region/country**




Source: Oppermann (1995: 59).

### *4.3.2 The central-periphery hierarchical model*

Another model developed to explain the patterns of the SDT is the central-periphery hierarchical model. This model shows that the movement of tourist involves not just the origin-destination pair within a nation or across nations, but some prior movements within the origin and/or a corresponding distribution within the destination. Normally tourists' movements follow a local-regional-national-international upward hierarchy.

In Christaller's (1963) study of the SDIT within Europe, he proposed a core-periphery theory. He maintains that tourism by nature avoids central places, but is drawn to the periphery that is more attractive in its natural resources. Although initially it was subjected to criticism on account of its simplicity and inaccuracy in tourism studies at the macro level, it has since been pushed forward by many researchers as a framework for the analysis of the SDT from the perspective of locational hierarchy. His theory emphasises the functional forms of tourist space in shaping the SDT (such as Britton 1982; Erisman 1983; Lundgren 1972; Turner and Ash 1975; Zurick 1992). For instance, based upon his proposal, Lundgren (1972) categorises four types of destinations in a hierarchical order. They are centrally located metropolitan destination, peripheral urban destination, peripheral rural destination and natural environment destination. Zurick (1992) also identified that the direction of the movement of adventure travellers in Nepal, takes place through a hierarchical ladder from the core through an international gateway (semi-periphery), to a national gateway (periphery) and further to a regional gateway (periphery frontier) (Fennell 1996).

However, one main limitation of this central-peripheral theory is that it takes little account of the fact that the movement of tourists is not necessarily from centre to periphery, but might also be in a reverse order, namely from periphery to centre. Empirical research into this facet of tourists' movements is greatly needed.

### *4.3.3 The destination classification model*

The third model is concerned with the function of each location in the tourists' movement chain and thus echoes the patterns of tourists' movement. The difference between this approach and that of the central-peripheral hierarchical model is that the destination classification model does not emphasise the hierarchical structure of destinations. Instead it emphasises the special characteristics and interrelationships between different types of destinations in determining the movement of tourists. Although the central-peripheral hierarchical model depicts some of the key features of the travel patterns of tourists, as mentioned in Section 4.3.2, the inherent weakness of this model is that it ignores the decay effect of tourist flows up the hierarchical ladder. In this case, the identification of the functional forms of the tourist regions is able to supplement this understanding.

In his spatial research of the travel patterns of package tourism in New Zealand, Pearce (1984) identified types of tourist destinations giving rise to specific functional utilities and types of tourist flows. They are gateways, major generators, staging points, minor generators and overflow nodes (see Table 4-1). The types and characteristics of these locations produce specific responses to the patterns of tourist travel. Although his research result was summarised in the coach tour situation, it might be applicable to other types of tourist travel, because the function of each node is characterised by tourist flows.

**Table 4 - 1 A typology of nodes in the coach tour network of tourists in New Zealand**

| *Type of Nodes* | *Definitions and Characters* |
|---|---|
| Gateways | Centres through which people join or leave tours. Predominant location, and possessing attractions, their role is basically that of terminus or transit point. |
| Major Generators | Places or regions that possess major attractions and provide the focus of most tours. |
| Staging Points | Tour stops with certain attractions but mainly favoured by the geographical position as suitable places to pass through within a particular itinerary. |
| Minor Generators | Places or regions with specific attractions of a lower priority than the major generators but with enough importance to justify their inclusion in tours in addition to one or more major generators. |
| Overflow Nodes | Nodes adjacent to a major generator, which are dependent on the major node. |

Source: Forer and Pearce (1984: p.39).

## 4.4 THE DIRECTIONALITY OF THE SDT

Models developed in travel pattern research emphasises the routes taken by tourists but not the direction and the intensity of their travel. Research of these two features of the SDT is the study of origin-destination configuration that investigates the directionality of the SDT, and the study of tourist demand and tourist flows that looks into the intensity of the SDT.

According to Crampon and Tan (1973: 98), factors that impacts on travel between origin-destination pairs influence tourist travel in total. The interaction between origin-destination pairs signifies the important characteristics of the SDT. Therefore, the identification of origin-destination pairs can exemplify the direction of tourists' movement, and reveals factors that influence the direction of the movement.

At the macro level, as early as 1960' and 1970's, Guthrie (1961), and Williams and Zelinsky (1970) have studied the SDIT by examining tourist flows between sets of countries. Williams and Zelinsky (1970) used a unique 'flow-assignment model' to illustrate the SDIT between source and destination countries and suggested some explanations. They identified distance and culture as two major factors in shaping travel patterns. One interesting finding is that distance does not act solely as an impeding variable of tourists' distribution. Short distance nations such as Italy-Austria, France-Germany, display surprisingly weak touristic interactions. In addition, tourist flows are affected by the relative cultural and social differences among nations such as the strong Belgian-Dutch, USA-UK, UK-South African, and German-Austrian tourist flows. They conclude that the SDIT between nations is not random but is patterned, and there is a great year-to-year stability in the patterns. Although the findings of the research were not empirically verified, the scale of the study was confined to the macro level, this research offered a sound base for further research in the SDT. Similarly, researchers such as Gormsen (1988); Jansen-Verbeke (1995) have examined the international tourist flows in different situations such as in Latin America and within Europe. Gormsen (1988) also observed the influence of cultural and geographical links on the travel patterns of tourists.

He found that among the relatively few foreign tourists in Latin America, the greater part came from neighbouring states such as the USA and Canada.

At the meso, or intra-national level, Oppermann (1992a, 1992b, 1995) has conducted a series of studies of the SDIT in various regions in Malaysia. In his research, he discussed the travel patterns of the international tourists and identified the functional nodes and hierarchies of the flow network and concluded that the characteristics of international tourists influence their distribution patterns within a destination country (Oppermann 1992a, 1992b, 1995). He also noticed an unequal SDIT between different origin-destination pairs. That is, tourists from specific countries tend to visit specific destinations. Although at a different scale, he arrived at a similar conclusion to Williams and Zelinsky's (1970), that the origin-destination interactions of tourists' travel within a destination country are not random but patterned by their nationalities (Oppermann 1992b). However, one main limitation of his study is that, although he has tried to explain the variations of tourists' movement using some explanatory factors such as the purpose of travel, party size and country or residence of the tourists, his explanation was not empirically proved and was therefore inconclusive.

The method used in the study of origin-destination configurations of the SDT has been mainly descriptive. The few quantitative methods that have been used include the correspondence analysis by Calantone *et al.* (1989) and a tourist flow model proposed by Crampton and Tan (1973). One major advantage of using these techniques is that research can portray both origin and destination in a single joint space, and present an easy interpretation of the relationships between the origin-destination configurations. Attributes such as the socio-cultural background of tourists, destination attractions and facilities and the interrelationship variables of origin-destination pairs can also be explored.

## 4.5 THE INTENSITY OF THE SDT – THE STUDY OF TOURIST FLOWS AND DEMAND

The intensity or volume of the SDT is studied under the themes of tourist demand or tourist flows that are basically concerned with the identification and quantification of the influential variables on the SDT. They aim to find out the cause-effect relationships between these variables and the intensity of tourist's distribution. One of the main differences between the study of tourist demand and flows, and the study of the travel pattern and direction is that the former study predicts for the future rather than presents the present. However the three types of study of the SDT are not isolated topics; an emphasis on only one aspect cannot lead to a thorough understanding of tourist behaviour. In most of the time the study of the three aspects, especially the origin-destination configuration and the intensity and volume of tourist flows, are inseparable.

### *4.5.1 The distance decay function*

Distance between origin-destination pairs is a fundamental feature of the movement of tourists. The earliest research of tourist flows has concentrated on explaining the simple relationships between the distance variable and travel intensity. Accordingly, distance decay function models have developed so that distance is the sole variable. The underlying assumption of the distance decay function is, in order to maximise the utility tourists derive from travel and reduce the cost of travel, tourists tend to move shorter rather than longer distances (Clark and Avery 1978: 140). The basic mathematic form of the function is:

$$P_{ij} = ae^{-bd}$$

where

$p_{ij}$ = the volume or probability of the tourist flow between origin $i$ and destination $j$

$d$ = the distance between origin $i$ and destination $j$

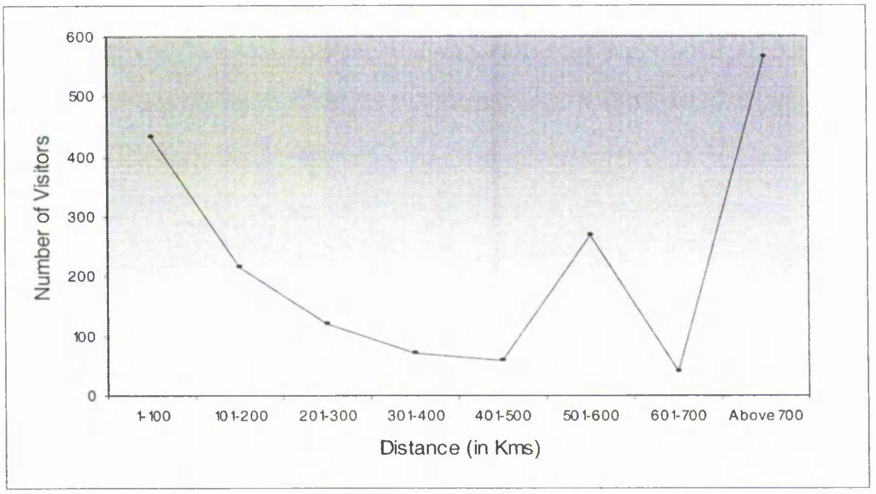
$b$ and $a$ are constants

One advantage of using the distance decay function is that it helps to overcome the difficulty posed by the destination population's heterogeneity in terms of social and economic characteristics and hence varied travelling tendencies (Clark and Avery 1978). However this function is limited in its applicability to various situations. There have been successful applications of the distance decay model in leisure and recreational studies. However, models are very difficult to calibrate at the macro and the meso level of the SDT, such as the SDIT within a destination country.

One reason is because of the practical difficulty in defining and measuring the distance variable in a complex environment, often due to inadequate data; another reason is that although the 'distance decay' concept has an advantage for characterising short haul travel, it has an inherent weakness in characterising movement from a span of medium to long haul travel. Also, the decay effect of distance in long haul travel is tentative. For example, for long-haul international tourists, distance might not be the most significant determinant for them to disperse within a destination country considering that they have already travelled a long way to the destination country. In this situation, other factors might outperform the distance factor in affecting tourists' distribution.

Several empirical studies confirmed the idea of 'distance decay' in recreational trips from the centre of an area towards its periphery boundary. However, is there a factual occurrence that after a certain distance, distance is no longer significant? Tourists may sometimes prefer to travel to further areas, indicating that distance does not show a decay effect all the time. For example, at the micro level, Paul and Rimmawi's (1992) empirical research of the SDT in a national park in Saudi Arabia, provided support for this argument. The distance decay effect in the case of tourist flows to the tourist resort is a bimodel profile with regard to distance travelled. The distance decay effect is observed only up to the distance of 500 km from the resort. The largest number of visitors came from a distance zone over 700 km away. And it appears that the visitor flow was influenced more by the size of the originating cities than by the distance from the study region (see Figure 4-5).

**Figure 4 - 5 Number of visitors originating from distance zones**




Source: Paul and Rimmawi (1992: 509).

Murphy and Keller (1990) proposed the same doubt regarding the distance effect. Based on meso level research of the SDIT on Vancouver Island Canada. They identified a hierarchical travel pattern, and the distance decay effect of the SDIT. However, they found out that the distance decay effect could be disrupted by exceptional attractions, or by awkward accessibility to destination areas.

The use of the 'distance decay theory' to predict the flow of tourist was mostly used in the early stage of tourism and recreational distribution study. One important weakness of the distance decay model is that, although many studies identified the influence of distance, they take no or very little consideration of other influencing factors of the SDT. The model could not capture any of the other characteristics of the tourist movement system such as the cost of travel, the attractiveness of the destination and the behavioural characteristics of tourists. It was quickly acknowledged that more sophisticated models were needed to achieve a better understanding of the SDT. Nevertheless as a basic model, the distance decay model lays the ground for more sophisticated models in the study of the SDT such as the gravity model and a range of econometric models.

### *4.5.2 The gravity models*

The gravity model is virtually an extension of the basic distance decay model. It is originally derived from Newton's law of gravitation, stating that the attraction between two objects/bodies is an inverse function of the square of their distance and is proportional to the product of their masses (Calantone *et al.* 1987: 30). Since 1940s, the gravity model has been widely applied to a variety of social science research, and gained popularity in tourism analysis at various scales (Archer and Shea 1973; Bell 1977; Crompton and Tan 1973; Durden and Silberman 1975; Malamud 1973; Peterson *et al.* 1982, 1985; Smith and Brown 1981; Wolfe 1972).

The gravity model describes the degree of spatial interaction and examines the effects of distance, cost, or other such variables on the spatial interaction of tourist movement. Distance is still incorporated into the gravity model, but compared to the distance decay model, it is studied under the context that the nature of the other variables will interfere with the simple distance decay function. The basic standard form of the model is expressed as follows:

$$I_{ij} = k\frac{P_i A_j}{{d_{ij}}^b}$$

where:

$I_{ij}$ = the volume and probability of the tourist flow between origin $i$ and destination $j$

$P_i$ = the population size of origin $i$

$A_j$ = the attraction index of destination $j$

$d_{ij}$ = the distance between origin $i$ and destination $j$

$b$ = the frictional effect of distance

$k$ = the gravitational constant derived from empirical tests

The formula indicates that the amount of spatial interaction or volume of tourist flow between any two tourist places – an origin $i$ and a destination $j$, is modified to a considerable degree by two groups of variables. In the first place, it will be directly proportional to the product of the "masses" of the origin. They are the *generators* of tourist movement and spatial interaction. Secondly, it is inversely proportional to some power of the distance separating them. This is the *restraint* on tourist movement and spatial interaction (Lloyd and Dicken 1972: 56). The model also takes account the characteristics of the attractiveness of the destination.

In the gravity model, the question of the interpretation of the two key variables - "mass" and "distance" is complex. They are normally expressed in a variety of different ways. Population size is commonly used to represent 'mass'. Distance has been measured in a number of ways. It is basically conceived of as a measure of interaction between places or areas. A real geographical distance between the two places is used. Alternatively, the distance measure can be modified by the use of some exponent to derive a surrogate for travel costs or travel time spent. The exponent $b$ applied to distance in the gravity formula is particularly interesting because this represents, in effect, the *frictional* effect of distance. The higher the value of $b$ the greater the friction and therefore the more rapidly interaction falls off with distance (Lloyd and Dicken 1972: 57). On an empirical basis, the function of $b$ and the overall impact of distance on tourist movement has been found to be consistent with the formula used in the distance decay function model.

Early empirical work using the gravity model has been done by Crampton (1966), whose form of the model is:

$$\frac{I_{ij}}{\sum_{j=1}^{n} I_{ij}} = G\frac{P_i}{d_{ij}^{b}}$$

where

$P_i$ = the population size of origin $i$

$I_{ij}$ = the actual number of journeys made from origin $i$ to destination $j$;

$d_{ij}$ = the distance between origin $i$ and destination $j$

$n$ = the total number of destination choices

$G$ and $b$ are empirical parameters.

He obtained a *b* value of 1.822 and his argument about the distance and the frictional effect of *b* was if other things being equal, "destinations having low values of *b* are considered to be capable of attracting more visitors from greater distances than destinations having high values of *b*" (Crampton 1966: xii - 42). That means a bigger value of *b* leads to a smaller amount of tourist movement inversely related to the distance, and a smaller value of *b* results in a lower level of distance retardation and consequently attracts more tourists (Archer 1976; Lloyd and Dicken 1972).

A more complicated gravity model has been labelled as the trip-generation model. This has been regarded as merely a refined form of the gravity model or a hybrid of the gravity model and econometric models (Archer and Shea 1973; Archer 1976). More social-cultural variables are incorporated into this model. For example, Crampon and Tan (1973) studied the travel patterns of international tourists from 8 origin countries to 24 destination areas in the Pacific region. The research used aggregate data at the macro level, and found out that tourism flows and the variables selected were linked to each other. Specially they identified a 'link' or 'tie' element between each origin-destination pair including ties such as transportation and information flow that are mandatory if travel is to exist (Crampon and Tan 1973: 98-99). This variable was found to be consistent with known political, historical, linguistic and social linkage between countries. The propensity of travel also significantly correlated with the social-economic variables of the origin countries, such as general level of education and economic development. Highly developed countries have a higher propensity to attract visitors.

The interpretation of the 'link' variable has been varied. In Armstrong's (1972) study of the SDIT from 18 countries to 27 destinations, explanatory 'linkage' variables were suggested as language and the historical ties between origin-destination pairs. Ostergaard (1974) used 'race' in his study of the SDT within the USA. All these studies show that the selected link variables were acceptably significant and positively related to tourist flows between origin-destination pairs.

However, in the past few decades, although the gravity model as well as the adjusted trip generation model has been used vigorously, they have also received acute criticism. The gravity models have varied forms but the basic formula remains the same regardless of the structure of the particular system, or even of the nature of the tourism phenomenon itself. Although the simple form might grant the gravity models their strengths, it also leads to their major drawbacks (Calantone *et al.* 1987; Ellis and Doren 1966). One main criticism is that the gravity model lacks theoretical sophistication. It is too mechanistic and simplistic to express social reality by means of physical gravity models (Nijkamp 1979). Moreover, it gives very limited considerations to the behaviour of tourists.

The applications of the gravity models are also very situational restricted. They have been widely used in micro scale recreational trips, but have had very little applications at the macro and meso scale. Even for recreational trips, Baxter and Ewing (1981) state that the model might not be very suitable because recreational trips often differ from other types of trips in that they are circuitous, involve several stops or have no main destinations, and the gravity model is incapable of predicting in this situation (Baxter 1978; Colenutt 1970; Colenutt 1969; Duffield 1975; Miles and Hammond 1977; Miles and Smith 1977). In order to explain the intricate reality more correctly more individual and socio-economic need to be incorporated so that distinctions of the SDT can be made between destination countries (Armstrong 1972).

### *4.5.3 Econometric models*

Due to the limitations of the gravity model, it is gradually being replaced by more advanced research techniques paying more attentions to the social and behavioural aspect of tourists such as econometric models and discrete choice models. A broad range of econometric models has been developed in tourism (such as Calantone *et al.* 1987; 1988; Crompton and Tan 1973; Duke 1981; Morley 1991, 1992, 1997; Sheldon and Var 1985; Song *et al.* 2000; Uysal and Crompton 1985; Var *et al.* 1990; Witt and Witt 1990).

One of the primary purposes of these studies is to gain a better understanding of tourist travel behaviour and to produce models, and explain in terms of the part played by the past and present performance of explanatory variables. The basic approach to these models is understood as a mathematical method, to outline the functional relationship between a dependent variable and one or more attributes in the tourism system, to discover the absolute and relative degrees of influence exerted by each of the attributes on the dependent variable. Both aggregate and disaggregate data, and cross-sectional and time-series data are used.

It has been recognised that, fundamentally, the gravity models and multi-variable econometric models have no theoretical and technical differences because both of them aim to reveal the relationship between tourist behaviour and the influence attributes; and they all use ordinary least square techniques. Archer (1980) says that the difference between the gravity model and econometric models "is in its origins more than its methods" (p.8). Models under these names are mostly macroeconomic in nature, and microeconomic studies of individual tourists or household tourism behaviour are rare (Crouch 1994b).

One major difference between the econometric and gravity models rests on their conceptual formulations. The former uses more explanatory variables to study their relationships and the degree of effects on the SDT, and the interaction of these variables themselves. It needs to build a model for each system element under a specific research context. Thus each model is 'custom-tailored' (Ellis and Doren 1966: 61) to fit each individual situation. This means that in each situation a model can be attempted with several combinations of the explanatory variables and the possible function forms of the model, in order to obtain the optimum fit of the data in discussion. On the other hand, the gravity model closely specifies the effects of specific variables such as travel distance and population size of origins, and has the standard formula, which remains stable in different situations. In comparison to econometric models, the gravity model expresses in a more precise and rigid statement the form that the relationship might take (Archer 1976; Archer 1980).

The methods for quantifying the dependent variable of econometric model vary from case to case. The number of travellers from an origin to a destination is most commonly used as a dependent variable. Many researchers use the total number of tourists from an origin who chose to visit a destination (Bergstrom and Cordell 1991; Leaming and Gennaro 1974; Lee 1996). Other methods also have been used to suit different situations and purposes. Indirect travel propensity indices have been applied as the dependent variable, as well as direct volume of tourist flows. Other popular variables include the total or per capita tourism visits from an origin to a destination (Song *et al.* 2000); the total number of overnight stopovers made in the destination (Tideswell and Faulkner 1999); the accommodation demand (Kim 2000); the ratio of number of tourist visits from an origin to a destination, to the population of the origin, in a specific year (Martin and Witt 1989); tourism expenditures or receipts; length of stay or tourist nights spent at destination sites (Uysal 1998) and so on.

Different measurements have different performances in the study of the SDT. Uysal and O'Leary (1996) suggested that the result of tourism flow studies could fluctuate according to the measurements of the volume of tourist flows. Researchers should be aware of the impacts of measurement on the accuracy and reliability of research results. The selection of measures of tourist flows should take into account the effects of time horizon, availability of data, scale of analysis, and specific origin-destination pairs on the analysis (Uysal 1998).

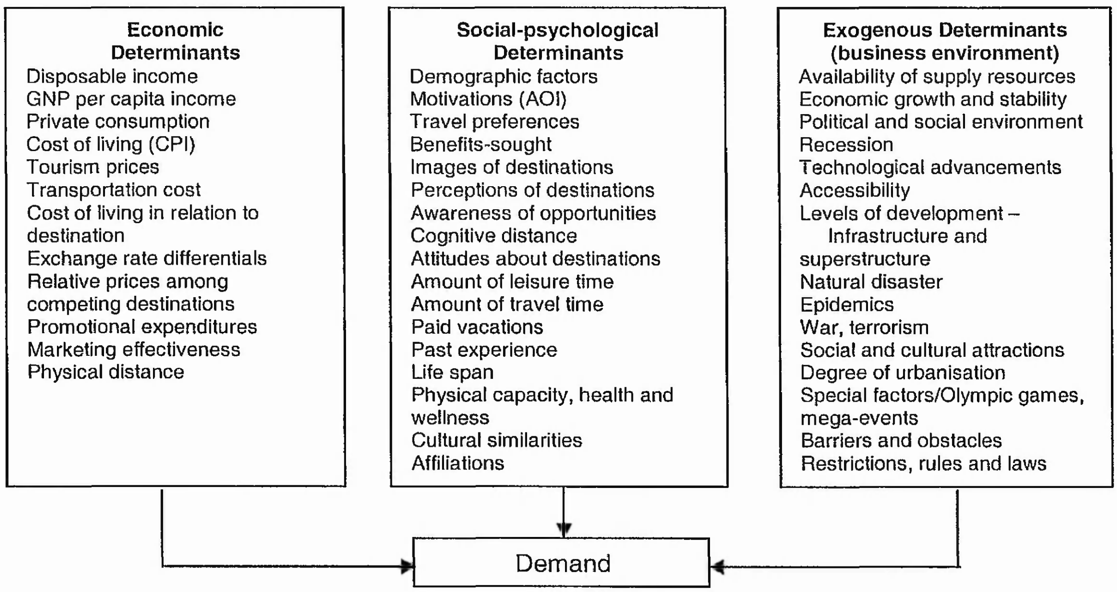
There is an extensive range of explanatory variables in econometric models to predict tourist flows. The common variables used can be characterised into four major groups. They are (1) origin variables such as the size of the population; (2) interaction variables such as the travel costs and distance travelled; (3) destination variables such as the price and attractiveness of the destination and alternative destinations, seasonality and climate (4) socio-economic variables of tourist such as age, gender, educational level and income level (5) the temporal variable (Artus 1972a, 1972b; Bond *et al.* 1977; Burger *et al.* 2001; Crampton and Tan 1973; Dalrymple and Greenidge 1999; Darnell *et al.* 1992; Eymann and Ronning 1997; Kulendran and Wilson 2000; Martin and Witt 1989; Uysal and

Crompton 1984). Based on a meta-analytic review of international tourism demand studies, Lim (1999) summarised that in effect, most of these demand and flow studies test the same directional hypothesis that the flows and demand of international tourism between a set of origin-destination pairs is related to these common variables. The review proved that most of the demand analyses reached a similar conclusion regarding some key variables, for instance international tourism demand is positively linked to income and negatively related to tourism prices. However, the results for transportation costs do not show a strong inverse relationship to tourism demand (Lim 1999: 282).

One of the major challenges of using these variables is that some of the variables are very difficult to operationalise. Therefore there are inevitable subjective judgements involved in model building. It is also argued that tourism econometric models suffer greatly from the lack of sufficient quality data due to the *ad hoc* nature of tourism analysis (Archer 1972:15). Interaction variables, especially distance and cost, have been important factors and models mainly relating to these factors are usually referred to as the gravity or trip generation models. The variables used in econometric models are principally economic variables, with limited cases using non-economic factors, such as sociological, behavioural and psychological factors (Calantone *et al.* 1987; Crouch 1994a). Uysal (1998) has summarised some key determinants of tourism demand. He divided them into three types – economic, socio-psychological and exogenous determinants (i.e. business environment) (p.87) (see Figure 4-6).

The most used functional forms are multivariate regression models of simple linear form and multiplicative form (such as log-linear form). It is easy to use the simple additive linear form to predict tourist flows. However, it is not very likely that exploratory variables are so simply related to the dependent variable (Archer 1980; Crouch 1994b). Although it is simple to conduct, it has been successfully applied widely and producing clearly and easily interpreted results (such as Leaming and Gennaro 1974; Martin and Witt 1989).

**Figure 4 - 6 Determinants of tourism demand**




Note: This exhibit is not intended to provide an exhaustive list of factors, but rather to give examples of factors that are likely to affect demand.
Source: Uysal (1998: 87).

The use of multiplicative models reflect the relationship between variables in a more complicated form, and it has been agreed that they are superior to the additive form and they fits the data better (Bergstrom and Cordell 1991; Crouch 1994a, 1994b; Papatheodorou 1999; Summary 1987). One advantage of this model is that the coefficients are parameters, which express the elasticity of the relevant explanatory variables (Archer 1980). However, Martin and Witt (1989) have compared different types of model and their performances in predicting tourist flows. They concluded that some of the simplest naïve models appeared to be relatively more accurate than complex econometric models. This finding is in line with the result of Summary's (1987) study. In his study of the suitability of regression analysis for estimating tourism demand, he summarised that 'typical' multivariate demand functions estimated by ordinary least squares regression may not represent the optimal techniques to use in all tourism demand analysis. However, it is also pointed out that multiplicative functional form has a constant elasticity structure that can produce absurd results when explanatory variables extend well beyond their original range (Bakkalsalihoglu 1987; Crouch 1994b).

Although the use of econometric models has been dominant in the analyses of tourist flows and demand, it is increasingly realised that the use of these models has imposed many limitations. Tourists' decision-making is supposed to be represented by the volume of tourist flows. However, the choice of tourists and the intensity of tourist flows are not equal concepts. Individuals' choice can be miss-specified using the intensity of tourist flows. Models also need to be developed to reflect the choice behaviour of tourists, not only the outcome of their choices.

In spite of the increasing tendency for disaggregate model building to consider more the behavioural variables of tourists (such as O'Hagan and Harrison 1984a; 1984b), the development of a theoretical framework within which individual behaviour can be explained through the econometric models has been slow. Researchers maintain that there a large number of non-economic factors affecting tourism flows, that are too small to detect in the aggregate models and that in combination, they are likely to be as important as economic factors such as prices and income in determining travel growth. They maintain that the relative importance of economic and non-economic factors has not been satisfactorily resolved (Barry and O'Hagan 1972; Crouch 1994a).

Therefore, it is not surprising that the majority of economic studies of tourist flows of international tourism tend to be macro-based, and only consider traditional economic factors like income, exchange rate and so on but ignore the life cycle factors of tourists (Collins and Tisdell 2000). Studies using disaggregated data at the meso and micro level are very rare. These theoretical deficiencies appear as most prominent, adding to the inability of conventional econometric models to adequately perform in behavioural studies. This is one of the key reasons that the non-economic factors, which may be more important, are often omitted from such traditional econometric models because they are very difficult to incorporate into these models due to the qualitative nature of the data. The standard mathematical techniques of these models rely heavily on the assumption of choice among a continuum of alternatives, but are not applicable to behavioural demand analysis because variables involved in behavioural demand analysis are mostly qualitative data such as perceptions and the various travel choices of tourists.

Other technical difficulties include the concentration on the common functional forms of econometric models such as the simple linear and log linear transformation; the problem of multicollinearity; and the difficulty of collecting adequate and consistent tourism statistics in terms of scarcity, homogeneity and definition (Crouch 1994a; Armstrong 1972). All these restrain the use of econometric models. Therefore, Witt and Witt (1990) commented that though the use of econometric models in the study of tourism demand/forecasting and tourist flows are an accepted procedure, the assessment of the likely forecasting ability of these models on the basis of common criteria such as the goodness of fit, statistical significance and the coefficients may well be misleading (Witt and Witt 1990: 34). These limitations make it necessary to develop different techniques that a comprehensive methodology of modelling individual travel behaviour at the macro and meso levels, and taking advantage of more specific and wealthier data resources is capable.

### *4.5.4 The discrete choice models*

As discussed above, econometric models involve definite cause-and-effect links based on absolute numbers of the tourists' preferences. Harvey (1967) terms this kind of model a deterministic model because they can be used to predict and make deductions on the basis of the observed phenomena. However, as argued by Sarre and Edge (1972), that social situations are rarely this simple and human behaviour is not mechanical.

> *"deterministic models tend to be most successful on an aggregate level, i.e. for large numbers of individuals. It has not been proved to be successful in explaining behaviour at a disaggregated level, i.e. for individuals or small groups" (Sarre and Edge 1972: 50).*

In contrast behavioural models are considered more appropriate than determinant models in identifying the constraints on individual travel behaviour. Since the 1970s, the application of discrete choice models as an effective behavioural model has been expanded rapidly in recreational and leisure studies (such as Huybers and Bennett 2000; Matsumoto and Rojas 1998; Morley 1992, 1994a; Peterson *et al.* 1982, 1983; Schroeder 1999; Sheldon 1995; Siderelis and Moore 1998; Stynes and Peterson 1984). The original use of discrete choice models has been of interest to researchers in many disciplines such as transportation, economics and psychology for decades. Harvey's (1985) quotation of Horowitz's overview of the advantages of choice modelling, in which he has placed at the centre of travel demand research in transportation, gives a good indication of the important role that the discrete choice modelling method plays. What he implies is that this research could yield benefits extending far beyond the transportation community. Horowitz states that

> *"The choice paradigm has brought to travel demand studies a higher degree of internal consistency, a more complete theoretical basis and increasingly rigorous statistical treatments. ... numerous topics for choice models research that would address deficiencies in current knowledge. Because of the wide applicability of choice modelling techniques" (Harvey 1985:455)*

In comparison to aggregate models, the main feature of discrete choice models is that they shift direction from an aggregate perspective to a disaggregate perspective. They study the direct effects of the attributes on the individual spatial choice process, but not the effects on the final outcome. This is because a discrete choice model aims to explain the decision-making process of tourists in a probabilistic manner. Using probabilities researchers can rank tourists' preferences for a tourism product, this perspective is the major advantage of discrete choice models. The theoretical grounding of discrete choice models is the random utility maximisation theory of microeconomics, the probabilities are assessed on the basis of this theory.

The random utility maximisation theory states that the choice of an individual can be described by a utility maximization choice function and predicated through discrete choice models. That is for every tourist there is a random utility function defined in terms of the characteristics of their travel. The underlying assumption of the function is that individual tourists are "deterministic utility maximisers", the randomness stems from their interpersonal variability (Thill and Thomas 1987: 10).

Based on this theory, tourists will try to maximise their utilities, i.e. the benefit of travel and/or recreation (Morley 1992; Rugg 1973). However their behaviours are often constrained by environmental and social characteristics of the destinations and origins, as well as their personal constraints such as time, space and income because of their social commitments, obligations, and other reasons. In order to maximise the utility of their travel, the tourists are modelled as choosing from a number of travel alternatives. The utility function is defined in terms of characteristics of their travel such as the travel patterns and routes, destination choices and duration of travel. In addition, because it is impossible to estimate a discrete model that will always succeed in predicting the chosen alternatives by all individuals, the concept of random utility is introduced. The true utilities of the alternatives are considered random variables, so the probability that an alternative is chosen is defined as the probability that it has the greatest utility among the variable alternatives (Ben-Akiva and Lerman 1997: 3).

The most commonly used approach in discrete choice models is the logistic regression (logit) model including both binomial/binary and multinomial logistic regression (MNL) models which has been frequently used to explain factors influencing the consumer decision-making process. It is also known as the 'utility model', the 'disaggregate model' or the 'behaviour demand model' (Anas 1983; McFadden 1973). The logit model is developed within the context of a parametric distribution theory that reflects the actual choice of tourists and their real decision-making. It is interpreted as a model that describes as accurately as possible the sensitivity of choice behaviour, and predicts probabilities or choice frequencies of tourists in relation to change in choice-influencing variables (Ruijgrok 1979). Tourists make their choices, and the probabilities of these choices can then be calculated on the basis of the number of times it is present in the choice set. It answers the question of the choice probability, therefore allowing an assessment of how much one destination is preferred to another by tourists, rather than how many of them go to the destination.

In tourism studies, the logit model is mostly applied to destination choice analysis. It assumes that there is a choice set consisting $I$ destinations, these destinations are $i$ $(i=1,2...I)$. Each destination is represented by $k$ attributes $(k=1,2...K)$. These attributes describe the characteristics of the constraints on the choice of tourists. The aim of the model is to predict the probability $p_i$ that the $i$ destination is chosen from the choice set $I$ by tourists given the set of attributes $x_{ik}$, which are assumed to influence the choice behaviour of tourists. It is assumed that each individual will make a choice from the choice set. His/her preference can be described by a linear function. The probability of destination $i$ and its utility function is defined for each tourist (such as McFadden 1974a, 1974b; Stemerding *et al.* 1999; Ben-Akiva and Lerman 1997; Ewing and Haider 1999; Styne *et al.* 1984).

$$p_i = \frac{e^{V_i}}{1+e^{V_i}}$$

$$V_i = \sum_{k=1}^{K} \beta_k X_{ik} + \varepsilon_i$$

where

$p_i$ =the probability of choosing a tourism destination $i$ in a choice set with $I$ choices;

$V_i$ = the structural utility of destination $i$ with $K$ attributes, they are $X_1$ to $X_K$;

$\beta_k$ = a parameter to be estimated for the *k-th* attribute;

$\varepsilon_i$ = is an additive stochastic component reflecting sampling errors, model miss-specification errors, and idiosyncratic aspects of the behaviour of decision-makers, and so on. It is assumed that the error terms are independently and identically distributed (IID) over the population, and for each tourist according to the double exponential distribution.

Though the application of the different types of logistic regression models is still not as prevalent as the use of econometric models, it has been applied in a number of empirical studies, mainly aimed at leisure and recreational activities. Further progress has been made in the wider field of tourism activities. Traditional socio-economic variables such as distance, nationality, cost, price, exchange rate, as well as tourists' preferences, attitudes and other psychological variables such as language, demographic characteristics, motivation, cognition of destination have been gradually incorporated into discrete choice models (see Table 4-2).

**Table 4 - 2 Some logistic regression models used in tourism and recreational research**

| Authors | Dependent variables | Significant independent variables | Insignificant independent variables |
|---|---|---|---|
| Bhat (1995) | Airline flight delays (MNL) | Market share, revenue, debt, employee per departure | |
| Chadee, Doren D. and Justine Cutler. (1996). | International student tourists destination choice and duration of stay (binary logistic) | Ethnic background, opportunity to experience different culture, | Cost, adventure tourism or not, previous experience |
| Ewing and Haider (1999) | International tourists' destination choice | Price, accommodation quality | |
| Eymann and Ronning (1997) | The German tourist destination choice (MNL) | Age, occupation, distance, price, origin, education, urbanisation | |
| Font (2000) | Tourists' site choices of natural areas | Site distance and characteristics, individual socio-economic characteristics, income, education and nationality | |
| Haider and Ewing (1990) | International tourists' destination choices in Caribbean (MNL) | Distance, price, destination attributes | Accommodation |
| Hearne and Salinas (2002) | Tourists preferences for ecotourism sites | Infrastructure, information, fees, level of development, accessibility | |
| Huybers and Bennett (2000) | UK tourists overseas destination (MNL) | Price, condition of the environment, crowdness, quality of facilities, age, distance (for short destination), package holiday, language | Rarity of natural attractions, activities, distance (for long distance) |
| Lipton (1999) | Boaters' location choice (MNL) | Boating quality, travel time | Exercise tax |
| Luzar *et al.* (1998) | Participation in nature-based tourism (binary model) | Socio-economic, psychographic variables, locational attributes, cultural diversity | |
| Viña and Ford (2001) | Cruise vacation potential (binary logistic) | Marital status, income, previous cruise vacation experience, cost, duration, new destinations, marketing packages | Number of pleasure trips per year, the itinerary, direct air flights, accessibility, gender, age, educational attainment, number of children |
| Morley (1994b) | Destination choices of Malaysians to Sydney or other places (binary logistic model) | Income, gender, racial differences, airfares, hotel, exchange rate | |
| Moutinho and Trimble (1991) | Revisitation to the Grand Canyon (binary logistic) | Distance to first-time visitors, demographical profiles such as income, leisure time, number of previous visits. | Distance to repeat visitors |
| Oum and Lemire (1991) | Destination choice patterns of Japanese tourists (MNL) | Age, income, language ability, occupation, marital status, children | |
| Richardand Faircloth (1994) | Choice of public golf course (binary logistic) | Accessibility of the course, physical attributes of the course, facilities, individual characteristics | |
| Riddington, Sinclair and Milne (2000) | Choice of ski centre (nested MNL model) | For day-trippers, snow cover, cost, journey length; For staying overnight, accommodation. | Distance |
| Schroeder and Louviere (1999) | Recreation site choices (MNL) | Price, distance, destination attributes | |
| Stynes and Peterson. (1984) | Recreation Choices | | |
| Train (1998) | Recreational fishing site choice | Fish stock, trip cost, aesthetics rating | Size of each site, |

It is recognised that since in normal gravity models and econometric models, the unit of the observations differ in population; for instance, the more populated region might generate more tourists if other factors remain equitable to the one that is less populated. So the population factor is scrupulously considered in these models. However, because the objective of a discrete model is to predict the probability of an individual tourist selecting a tourism product from a range of alternatives, but not to model the volume of a group of tourists travelling to a destination, the population size of an origin is not a direct logical factor in predicting individual tourist's behaviour. A review of previous empirical research using the logit models shows that no previous model has incorporated population. This signifies a shift in the models from concentrating on the collective level to the individual level of tourists' behaviour.

The distance factor, however, is still recognised as an influential variable to the disaggregate perspective. Though, distance has also been widely researched using the gravity and econometric models, by means of discrete choice models the effect of distance in affecting tourists' spatial patterns and destination choices seems situational-specific. This is derived from the varied outcomes from the handful research on spatial choice behaviour of tourists. For example, in Riddington *et al.*'s (2000) research, distance did not show strong significance in tourists' ski site choices. However, in Font's (1999), distance was influential to tourists' site choices in natural areas. Though it is recognised that these two studies were conducted at different geographic scales, the effect of distance on tourists' spatial choice behaviours is still not completely settled.

Nevertheless, as discussed, the strength of the discrete model is its ability to model behaviours at an individual level. In this regard, researchers have developed models incorporating many different attributes of individual tourists, and reached encouragingly similar results that many of the socio-economic factors of tourists such as cost and price of tourist product, destination attributes and cognition of these attributes are important determinants in their behaviours. Among all these factors, a distinctive one is the cultural factor generally expressed by language, race, ethnicity, or nationality, etc., although at different geographical scales, researchers seem to reach similar conclusions (such as Chadee and Cutler 1996; Huybers and Bennett 2000; Luzar *et al.* 1998; Morley 1994a).

For example, using the binary logit model, at the micro level, Luzar *et al.* (1998) studied the participation of tourists in nature-based tourism in Louisiana. Socio-economic, psychographic and locational factors were focuses of their model. Multicultural diversity was discussed in the model. It was found that the variable was significant in affecting the demand of the tourist arrivals to the destination. Using a modified MNL model, Font (2000) provided support to Luzar *et al.*'s (1998) statement. Several common variables such as distance and the characteristics of tourists were identified as significant. He also added that tourists' nationality is influential on tourists' destination choice behaviours. At a higher level - the meso level of intra-national tourism (see Figure 4-1), Morley (1994a) used a discrete model to study the destination choices of tourists from Malaysia to eight different countries, and obtained a similar result. A cultural factor was included as an explanatory variable in his binary logistic model that was operationlised by racial differences. The research found out that observable differences of tourists' behaviours exist. However, in these two studies the culture or nationalities of tourists were not the focal points of their research, and therefore their interrelationships with other explanatory variables were not clearly clarified and the research findings were rather lacked validity. Similar limitation has been found in other research using culture or nationality variables. For instance, Font (2000) studied German, British and tourists of other nationalities who were found to have coefficients of different signs in relation to their destination choices; this result is not consistent with the expectation of the positive effect of nationality, and the researcher did not give a clear explanations.

However, although the discrete choice model has a strength that other models do not, it has some inherent shortcomings which further research needs to treat with caution. Some major criticism includes, first, applications of discrete models have not been widespread at every geographical scope. Micro level investigations have been dominated at the early stage of the application of discrete choice models. This is different from the application of econometric models that are most applicable at the macro level. This is due to the nature of discrete choice models in emphasising individuals' choices. A challenge to the study of the SDT at different geographical levels is that the study of the SDT has sometimes reached inconsistent results. Also, the use of discrete models is subject to some primary assumptions that have influenced the outcomes of many discrete studies such as the restrictive "independence from irrelevant alternatives" (IIA property), which means that a change in the attributes of one alternative in the choice set changes the probabilities of the other alternatives proportionately. However, in reality, this is rarely valid. Also, variables used in discrete models are not all adequate and consistent. Another point is that it does not incorporate the time element of the SDT that has been suggested as an important influential factor. But on the other hand, this enables the use of discrete models that extend the range of explanatory variables, and concentrate on explaining the interrelationship between a variety of social, economic and personal characteristics with the SDT.

Despite these criticisms, the application of discrete choice models has been attracting more and more attentions that its ability to explain individual tourists' behaviour and to model disaggregate data can contribute significantly to demand and tourist flow studies. In Chapter 6 and 8, the functional form, strengths and limitations of the logistic regression model will be further clarified in reference to the aims of this research.

## 4.6 CROSS-CULTURAL STUDIES OF THE SDT – SOME CONSIDERATIONS

Cross-cultural research is a distinctive outlook in tourism research and has been applied to a variety of issues such as studies in tourist behaviour, perception and attitude, destination image, tourist community's attitude, host-guest interaction, social and economic development and so on. However, despite the extensive research and robust findings on the differences of tourist behaviours (refer to Chapter 3), there is relatively little direct empirical research on cross-cultural differences in the SDT. Normally, two types of studies are associated with the cross-cultural study of SDT.

The first type is international tourism demand and tourist flow studies. There are plentiful studies of this type, which reveal the origin-destination configurations and intensity of tourist flows. Although any of these studies that involve international tourism can be coarsely regarded as a comparative research, if they do not explicitly incorporate cultural elements into model building and focus on discovering and accounting for the similarities and differences of the SDT in relevant cultural settings, they are not a strict cross-cultural research. Therefore, although tourism demand and tourist flow studies can identify a variety of spatial patterns of the SDT and link these patterns to some traditional macro socio-economic attributes, they do not explain it from a cultural perspective. As a result, in a general sense, most of these macro tourist flow studies are actually concerned with 'nationality' instead of 'culture'.

In comparison to these studies, another type of research postulates direct cross-cultural comparisons of the SDT, particularly research into the patterns and origin-destination configuration of the SDT. This type of research belongs to the category of direct cross-cultural comparison (refer to Section 3.4.2 and 3.4.3). This type of study reveals more of the cross-cultural effects on tourist spatial behaviours than the first type of studies, because they explicitly compare the spatial behaviours in terms of the cultural similarities and differences between them. Both cultural values and nationality have been used as the cultural constructs for comparison, and research in this aspect has been applied at the macro, micro and meso scales (such as Flognfeldt 1999; Oppermann 1992a , 1992b, 1993a, 1993b; Pizam and Sussamann 1995; Pizam and Reichel 1996; Pizam *et al.* 1997; Pizam 1999; Reisinger and Turner 1997a; Sussamann and Rashcovsky 1997; USTTA 1984a, 1984b).

For example, at the meso scale the U.S. Travel and Tourism Administration (USTTA 1984a, 1984b) has conducted a series of surveys among potential tourists from different nations - Japan, Australia, the UK, Germany and France. At the macro level, Oppermann (1993c) researched the travel patterns of international tourists from US, Japan, Germany, and the UK to five destinations in the Pacific region - Thailand, the Philippines, Malaysia, Australia and New Zealand. All this research has shown that there are observable differences among the tourists relating to their destination choices.

Not using nationality, researchers have used various approaches to disclose the relationship between culture and tourist behaviours. Various culturally conditioned ingredients and cognitions such as cultural-linguistic factors (Garrett 1980; Institut National de Statistiques 1980; Klenosky *et al.* 1999; Murphy and Keller 1990; Richardson and Crompton 1988a, 1988b), ethnicity and race (Morley 1994a) and value system (Huff 1960; Woodside and Lysonski 1989) are used. All these researchers assumed that culture and nationality are influential in tourist spatial behaviours.

They also implied that it is the relative cultural difference with the destination, which is attributable to the variation of the spatial behaviour of tourists. For instance, Klenosky *et al.* (1999) have studied the factors influencing tourist's ski destination choice. They found that relative familiarity and local culture to tourists' perspectives are significant factors skiers considered when selecting among competing ski resorts. Woodside and Lysonski (1989) developed a model of tourist destination choice and confirmed that values system and lifestyles are key factors in tourist destination choice. This point was supported by Um and Crompton's (1990) test on the role of the values of tourists in the destination choice process of pleasure travellers. At a meso level, Sussamann and Rashcovsky's (1997) researched the linguistic influence as a cultural element on shaping the different travel patterns between English and French speaking Canadian tourists. Carr and Williams (1993) and Hutchison (1987) also studied the effect of ethnicity on the recreational behaviour of tourists.

Although the importance of nationality on cross-cultural differences of the SDT has been acknowledged, it is also suggested that the use of nationality could be fallacious. In many cross-cultural SDT research, nationality and other socio-demographic factors seem to act together on tourists' spatial choices. This makes it difficulty to distinguish the real effect of nationality, and disentangle the extent to which other variables exert influence on a dependent variable and on each other (such as Flognfeldt 1999; Morley 1994a; Oppermann 1993a, 1993c).

For example, Flognfeldt (1999) studied the multiple destination trip behaviour of international tourists in Southern Norway. He found that differences exist among tourists from different nations. He further noticed "the differences registered between nationalities are not based on characteristics between nationalities themselves, but by the other characteristics within the respondent group of those nationalities" (Flognfeldt 1999: 114). By over-focusing on behaviours of different nationalities, very important factors might be overlooked.

Another limitation of this type of research is that although they directly link cultural and national backgrounds to the SDT, most of them are descriptive in nature. For example, Oppermann's (1993c) research identified travel patterns that he linked to the national backgrounds of the tourists, his explanation cannot be empirically tested. Other researchers (such as Flognfeldt 1999; Garrett 1980; Murphy and Keller 1990; Oppermann 1992a, 1992b, 1993a; Pearce 1984, 1987b, 1990; Reid and Reid 1997; Richardson and Crompton 1988) have also attempted to explain cross-cultural differences in the SDT, but because their work is not empirical, the patterns they identified cannot be scientifically proven and easily generalised. A real cross-cultural comparative method should be able to answer 'why', but not simply describe 'what' and 'how' a cross-cultural difference exists. Another important issue relating to the cross-cultural SDT research is that of transferability. Most past research consists of case studies with specified geographical scales, locations and groups of tourists. This raises the issue that 'can experiences be transferred from one context to another or from one scale to another?' For example, the central-peripheral hierarchical model identified by Christaller (1963) in his research on the SDT in Europe has been widely cited, however the functional form identified by Zurick (1992) in his international tourism in Nepal suggested a different result. The incomparability of these theories developed in different contexts tells us that care should be taken in any cross-cultural SDT study.

In summary, despite the importance of the cross-cultural stance in tourism studies and many other social sciences, the lack of real confirmatory cross-cultural SDT research should cause concern in tourism researchers. However, even though there is a limited research base, the way they address this issue is also problematic. Attention should be given to the question; is this really a cross-cultural comparative research? To be strict cross-cultural research, cultural similarity and differences across tourists' groups need to be explored and empirically tested. However, the intricate nature of cross-cultural as well as the SDT research makes this very difficult. This relates to the use of correctly designed cultural constructs, the transferability across different contexts and the suitable choice of modelling approaches. The use of the discrete choice models is suitable because, as discussed in Section 4.5.4, it has the ability to directly incorporate cultural and individual behavioural elements into model buildings, and to conduct scientific inference. It is considered that the discrete choice model suits this research problems and can aim at filling the literature gaps identified so far and significant contributions can be made to the advancement of the cross-cultural SDT research.

## 4.7 SUMMARY AND CONCLUSIONS

This chapter has sketched a theoretical development of the study of the SDT. The explanation has focused on three theoretical frameworks of the SDT in relation to different theories and methodologies. The three frameworks are studies of the travel patterns of tourists, origin-destination configurations and the intensity of tourist flows.

It is argued that the geography of tourism is still 'not yet underpinned by a strong conceptual and theoretical base' (Pearce 1987a: 5). The review in this chapter and the preceding chapter supports this argument. It is identified that the conceptual deficiency of the study of the SDT, as well as the concepts of spatial patterns, tourist flows and demand and so on, has been confusing. This affects the clarity and theoretical development of the research of the SDT as a whole. Though this research identified that most of the research of the SDT contains three common notions – pattern, volume and intensity, researchers studying these three notions have been using them interchangeably. Most of the time researchers discuss one or more of them, but there is a general paucity of comprehensive studies dealing with the aggregate movement of tourists.

Besides the differences in the approaches used, the existing research of the SDT differs considerably from one study to another in terms of conditions, geographic locations, objects, methodologies and results. For example, regarding the scale of research, most of the studies of the travel patterns are at the micro and meso level, and most of the studies of tourist flows are at the macro level. Therefore, most of the theories developed in the SDT are more or less product and/or situation specific making it very difficult to deduce general laws (Carmichael 1992; Crouch and Shaw 1992; Echtner and Ritchie 1993; Gartner 1989; Moutinho 1987; Roehl and Fesenmaier 1992; Walmsley and Jenkins 1992a; Witt and Wright 1992; Woodside and Lysonski 1989; Zins 1998).

Further, in researching travel patterns and directions, because of technical difficulties, most research has not been empirically tested (Forer and Pearce 1984). This type of research is usually descriptive in nature. Some attributes may be found out, but how they are related to tourist spatial patterns is uncertain. On the other hand, the studies of tourist flows tend to concentrate on ascertaining the volume of tourist traffic, between a series origin-destination pairs from a macro-economic perspective. Research is more theory or model driven, but places little effort on linking tourist flows to the social-psychological attributes of individual tourists.

Moreover, despite the limited research in cross-cultural SDT, the limitations derived from the general SDT studies reflect on the cross-cultural SDT studies as well. Since real cross-cultural research needs to incorporate cultural elements into an investigation, theory and model development in which cultural and behavioural attributes of tourists can be empirically tested are required.

In view of these limitations, the cross-cultural SDT study in this research is further justified from a theoretical perspective. A combined study of the three features of the

SDT – pattern, direction and intensity; and the use of discrete choice model are proposed. Because the conceptual clarification indicates a necessity for a holistic understanding of the spatial movement of tourists. Also the theoretical clarification of the discrete choice model verified that it has better properties in incorporating cultural and behavioural attributes, tackling disaggregate choice behaviours and conducting scientific hypothesis test and statistics inference, which have been identified as deficiencies in the literature. This proposal will underpin the research design in Chapter 6 and data analysis in Chapter 8. Before that, Chapter 5 will provide an overview of tourism development in China which will contribute to the contextual justifications of this research.

# 5 INTERNATIONAL TOURISM IN CHINA

## 5.1 INTRODUCTION

In field research, it is important to understand the context in which the research issues take place. The difficulties a researcher encounters and the way he/she solves these problems will largely be done to a variety of circumstantial and contextual conditions. The research setting is in China, the social-economic attributes, the dynamic process of the tourism development and the structure of the tourism system all shape the way this research questions addressed and the way they are answered. Therefore, the main task of this chapter is to illustrate in a general sense the characteristics and features specific to this research and identify a set of themes that best describe the development and progress of the tourism industry in China. From these attributes this chapter aims to present readers with a picture of the research background.

This chapter starts with an overview of the general background of the tourism industry. Some key themes are summarised and the challenges faced by China's tourism industry are assessed. Next this chapter outlines the major regional tourism resources in China using the method of regionalisation. China is a vast country, rich in tourism resources. This is a big asset for the tourism industry, but adds practical difficulties in conducting any spatial research. In order to condense the research base to a workable extent without reducing the quality of the information elicited, it is necessary to summarise the geographical patterns of the tourism resources.

The final part of this chapter introduces the key features of international tourism in China. Some working definitions specified by the tourism industry will be introduced and applied throughout this research. A preliminary analysis of the cross-national SDIT within China based on existing literature and secondary tourism statistics, has been conducted. On account of these, the research objectives are further justified from the perspective of the regional tourism development in China. This will also help to establish the three grand hypotheses of this research in Chapter 8.

## 5.2 AN OVERVIEW OF TOURISM DEVELOPMENT IN CHINA

After 20 years of development, China's tourism industry has gained a firm position in the international market, where a number of advantages have helped it succeed in the face of severe global competition. China is fast becoming one of the world's top countries for travel and tourism. The benefits of tourism to both China and the world go far beyond the national and industrial scopes.

### *5.2.1 A historical perspective of tourism growth in China*

Travel has had a long history in China. "Read ten thousand books and travel ten thousand miles" has been the motto of Chinese scholars for centuries, where travel was more a cultural phenomenon than an economic activity; landscapes, mountains, natural and cultural scenarios all have sentimental meaning to the Chinese. But more than just the admiration of natural beauty and cultural inherence, travel is a means of enlightenment, and an integral part of Chinese civilisation. Pilgrimage, educational travel and health travel were all already a major part of tourism history in China, and in around the 11 century, when Marco Polo allegedly travelled to China, a window of wonder was opened to the rest of the world.

In the contemporary era, China's tourism industry as an economic activity has gradually become established along with the modernisation of China. The establishment of the first foreign travel agency - Thomas Cook in 1841 and the founding of the first national travel service - China Travel Service (CTS) in 1923 marked the beginning of tourism as an industry in China (Deng 1994). Since that time, the infant tourism industry in China has risen and fallen over the decades with the ebb and flow of the political environment in

China. During the period 1949 to 1978, tourism was limited to VFR travel, mainly by overseas Chinese and Compatriots. Political travel constituted the major portion of domestic travel (Bian 1992). The devastation of the Cultural Revolution in the 1960s to 1970s made China's tourism industry virtually non-existent.

It was in the post-Mao period under the government's more liberal economic and social policies that tourism, an important part of the socio-economic phenomenon, began to burgeon. As a result of economic and social reform, both international and domestic tourism has expanded rapidly. In 1978, the first year since implementing economic reform, China received about 1.809 million inbound tourist arrivals and made an income US$2.63 billion. However, tourism was mainly in the form of international travel. After more than 20 years of steady growth, in 2000, inbound tourist arrivals totalled more than 83.4439 million, ranking number 5 in the world. This was 46 times more than in 1978. International tourism income reached US$16.224 billion, more than a six fold increase over that in 1978, ranking number 7 in the world.

According to the life cycle theory of destination development (Choy 1992; Cooper 1992; Cooper and Jackson 1989), as a tourism destination China is still at its early stage of development with a promising future. Many tourism researchers in China have categorised the tourism development so far into different stages based on the level of tourism development with a consideration of the political and economic contexts (Bian 1992; Deng 1994; He 1999a; Zhang, Ap and Chong 1999). Though the specific divisions of these phrases might be varied, the following common stages can be identified.

#### 5.2.1.1 Emerging stage (1978 – 1985)

During this stage, the political and economic environments of China were gradually becoming more liberal owing to the momentous economic reform in 1978. The shift of the role of tourism as a political instrument during the pre-reform era to an important economic activity began to be recognised by many sectors of the country. The level of support provided by government policies has been improving along with the development of tourism itself. After more than 20 years of social and economic reform, tourism is growing into a vital segment of China's modernisation.

In 1978, the government stipulated the initial policy of 'rapidly developing the tourism industry'. This was manifested by a dramatic increase of international tourist arrivals and tourism receipts during this period. The tourism industry in China began to grow. International tourism has progressed from a small number of people's necessities to a mass's pursuit. Travel types expanded from monotonous VFR to a variety of purposes, such as conferences, student holiday travel, shopping and recreational travel. The distance they travelled began to increase. Travel spending and locational choices were also diversified. This period can be regarded as the pioneering stage for Chinese domestic tourism, similar to the rudimentary tourism organised by Thomas Cook in the 19th century in Europe (Bian 1992: 232). Though the absolute number of tourist arrivals was still small, the growth rate was outstanding. Tourist arrivals in 1985 were almost 10 times of that in 1978 and tourism receipts were 4.8 times of that in 1978. The average annual growth of tourist arrivals was 42.88%.

#### 5.2.1.2 Consolidating stage (1986 – 1990)

After seven years stirring growth, a *bona fide* development began to take off. Without considering the exceptional year of 1989 due to political reasons, the average growth rate in this period was 18.94%. Though it was still relatively high, a decline from the previous stage was inevitable. This indicates that the initial fanatical huddle was replaced by a steady and strategic improvement. This was guided by the government's active support. In 1986, the estimate of the foreign income from international tourism was incorporated into the 7$^{th}$ Five-Year National Plan. This was the first time that tourism development was included in the National Five-Year Plan. This period was characterised by an increase in tourist volume, decentralisation of planning and diversification of the service industry (Bian 1992). Also the increase in the disposable income of ordinary people enabled domestic travel to begin to take shape. The open-up to the outside world opened people's eyes, the increased communication and transportation meant that travel was no longer something far from their reach. During this five-year period, the average growth of tourism receipts began to exceed the average growth of tourist arrivals. This was the sign of the commencement of the shift of a quantity-oriented tourism industry to a profit-oriented industry. But this process was injured by the Tiananmen Incident. The whole period, thereafter, was a combined experience of an obligatory undertaking to recover from the incident, and a far-reaching effort to reinforce for unreserved growth in the future.

### 5.2.1.3 Developing stage (1991 – present)

The development of tourism in this stage has two steps. The first one was from 1991 to 1996, and was in the period of the 8th National Five-Year Plan. International tourism continued growing. For the first time, the rank of the tourist arrivals to China in the whole world, leapt from number 24 at the end of the 7th Five-Year Plan, to number 9 in 1992 (see Table 5-1). Domestic tourism flourished across the whole country; the total number of domestic tourists reached 744 million, total outbound visitors reached 10.472 million. In 1993, the China National Domestic Tourism Association was founded. The steady growth of the national economy, the change in life style, improvement in the quality of life of Chinese people, the encouraging policies and the implementation of a longer national holiday have all contributed to the growth of the tourism industry.

The second step was from 1996 until the present. Nowadays, regulated by the central government's policies, and driven by strong economic development, tourism was listed as a 'pillar' industry by 24 of China's 31 provinces, autonomous regions, and municipalities. Favourable policies are issued to facilitate tourism development and cover tourism marketing, construction of tourism infrastructure and facilities, management and organisational change. Sustained by strong government policies, tourism has bloomed in all of the three tourism types – international tourism, domestic tourism and outbound tourism. Figure 5-1 a and b clearly show that tourist arrivals went through a sharp rise after 1995. This was accompanied by a healthy and even growth of tourism receipts.

Tourism receipts, catching up with tourist arrivals, ranked top 10 in the world in 1996 (CNTA 2001c).

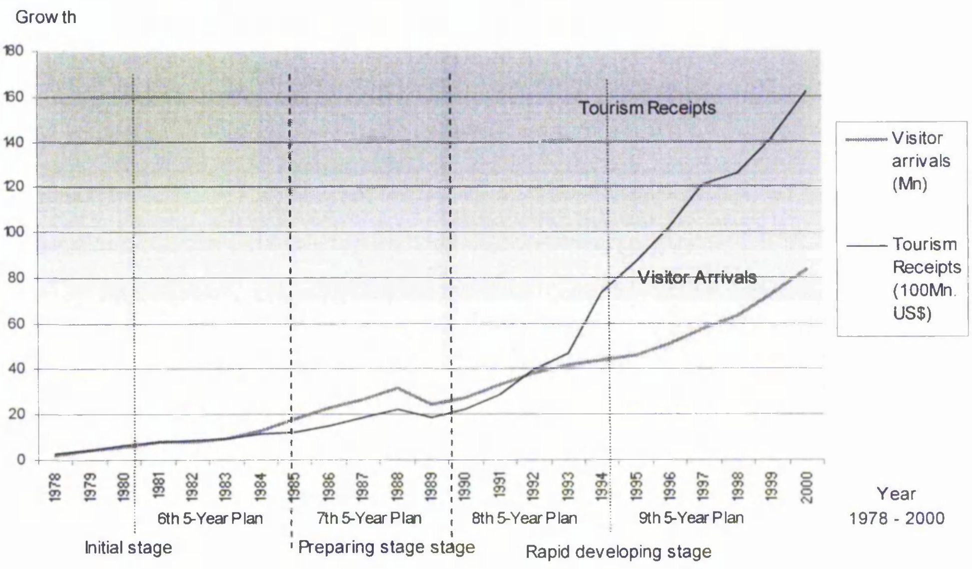
**Table 5 - 1 World ranks of China's tourist arrivals and tourism receipts, 1978-2000.**

| National Five-Year Plan | Year | Tourist Arrivals (10,000) | Growth rate of tourist arrivals | World rank | Tourism Receipts (100Mn.US$) | Growth rate of tourism receipts | World rank |
|---|---|---|---|---|---|---|---|
| | 1978 | 180.92 | - | - | 2.63 | - | - |
| - | 1979 | 420.39 | 132.36% | - | 4.49 | 70.72% | - |
| | 1980 | 570.25 | 35.65% | 18 | 6.17 | 37.42% | 34 |
| 6th National Five-Year Plan | 1981 | 776.71 | 36.20% | 17 | 7.85 | 27.23% | 34 |
| | 1982 | 792.43 | 2.02% | 16 | 8.43 | 7.39% | 29 |
| | 1983 | 947.70 | 19.59% | 16 | 9.41 | 11.63% | 26 |
| | 1984 | 1,285.22 | 35.61% | 14 | 11.31 | 20.19% | 21 |
| | 1985 | 1,783.31 | 38.76% | 13 | 12.50 | 10.52% | 21 |
| 7th National Five-Year Plan | 1986 | 2,281.95 | 27.96% | 12 | 15.31 | 22.48% | 22 |
| | 1987 | 2,690.23 | 17.89% | 12 | 18.62 | 21.62% | 26 |
| | 1988 | 3,169.48 | 17.81% | 10 | 22.47 | 20.68% | 26 |
| | 1989 | 2,450.14 | -22.70% | 12 | 18.60 | -17.22% | 27 |
| | 1990 | 2,746.18 | 12.08% | 11 | 22.18 | 19.25% | 25 |
| 8th National Five-Year Plan | 1991 | 3,334.98 | 21.44% | 12 | 28.45 | 28.27% | 21 |
| | 1992 | 3,811.49 | 14.29% | 9 | 39.47 | 38.73% | 17 |
| | 1993 | 4,152.69 | 8.95% | 7 | 46.83 | 18.65% | 15 |
| | 1994 | 4,368.45 | 5.20% | 6 | 73.23 | 56.37% | 10 |
| | 1995 | 4,638.65 | 6.19% | 8 | 87.33 | 19.25% | 10 |
| 9th National Five-Year Plan | 1996 | 5,112.75 | 10.22% | 6 | 102.00 | 16.80% | 9 |
| | 1997 | 5,758.79 | 12.64% | 6 | 120.74 | 18.37% | 8 |
| | 1998 | 6,347.84 | 10.23% | 6 | 126.02 | 4.37% | 7 |
| | 1999 | 7,279.56 | 14.68% | 5 | 140.99 | 11.88% | 7 |
| | 2000 | 8,344.39 | 14.63% | 5 | 162.24 | 15.07% | 7 |

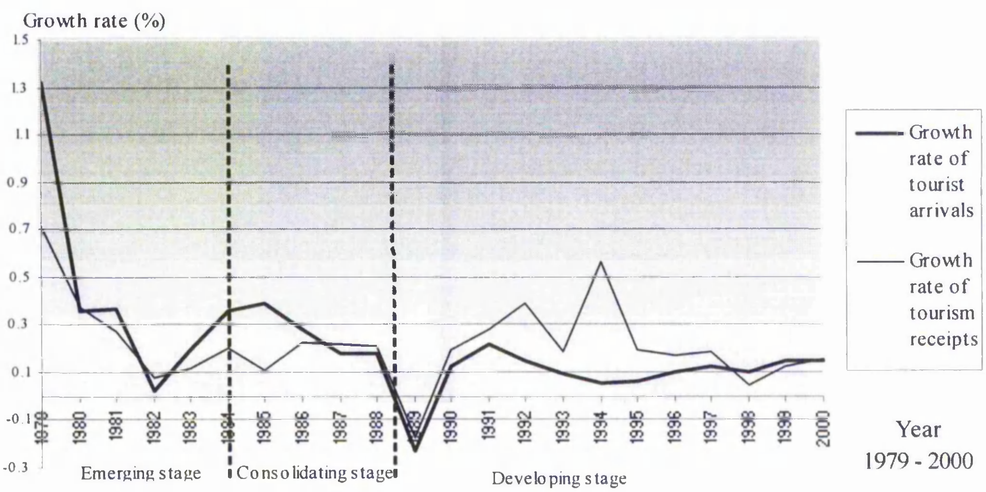
Data sources: CNTA (2001b, 2001c); He (1999b).

**Figure 5 - 1 Annual growth and growth rate of inbound tourist arrivals and tourism receipts and the three key stages of tourism development in China, 1978 – 2000**

a. Growth of tourist arrivals and tourism receipts




b. Growth rate of tourist arrivals and tourism receipts




Data Source: CNTA (2001c)

Since 1992, China has implemented an intense overseas promotion strategy. Relating to this, each year, China has generated a theme to introduce China's tourism to the overseas market (see Table 5-2). The long history of ancient civilization, and the long period of modern-day isolation have given China an image of mystery and adventure. However after more than 20 years of nurturing, the natural attractiveness of tourism in China has given way to a more strategically oriented, marketing based competitive product.

**Table 5 - 2 Tourist promotional themes in China, 1992-2005**

| Year | Theme |
|---|---|
| 1992 | Visit China Year |
| 1993 | China Landscape Tour |
| 1994 | China Heritage Tour |
| 1995 | China Folklore |
| 1996 | China Holiday Resort |
| 1997 | Visit China |
| 1998 | China City and Country Tour |
| 1999 | Eco-tour - China |
| 2000 | New Millennium - China |
| 2001 | Health and Fitness – China |
| 2002 | Folk Arts – China |
| 2003 | Culinary Kingdom – China |
| 2004 | Catch the Lifestyle |
| 2005 | The Third Visit - China |

Source: CNTA (2003a)

However, despite rapid tourism growth, there is still large gaps between China and large tourism countries. One gap is that although China is a large tourism receiving country, its position in the world is still low. This refers to both tourism income and tourist arrivals. Especially, considering China is much larger in terms of its geographic magnitude compared to some of the top tourism countries in the world, its position could be better. For example in 1998, its position reached number seven in terms of the income of foreign exchange, the absolute number was almost 5.6 times lower than that of USA. It also becomes increasingly more difficult to reach higher ranges on the ladder and to rank the same as the world's top four tourism countries – USA, France, Spain, and Italy. Tourism receipt is also relatively low. In USA, Spain, France and Italy, international tourism receipts could reach as high as 72.3, 32.9, 30.0 and 25.8 billion US$, but in China, tourism income is only 17.8 billion US$ (WTO 2002, 2003) (see Table 5-3). The second gap is that although tourism is well developed in China, in terms of variety it is still quite monotonous. The majority of the international tourists are cultural tourists. Other types of tourism, such as sun-sand-sea, shopping, cruise, sport and adventure tourism are very rare.

**Table 5 - 3 Top ten earners of international tourism in the world, 1998-2001**

| Rank | 2001 | | 2000 | | 1999 | | 1998 | |
|---|---|---|---|---|---|---|---|---|
| | Nation | International tourism receipts | Nation | International tourism receipts | Nation | International tourism receipts | Nation | International tourism receipts |
| 1 | USA | 72.3 | USA | 82.0 | USA | 74.88 | USA | 71.12 |
| 2 | Spain | 32.9 | Spain | 31.5 | Spain | 32.4 | Italy | 30.43 |
| 3 | France | 30.0 | France | 30.8 | France | 31.51 | France | 29.7 |
| 4 | Italy | 25.8 | Italy | 27.5 | Italy | 28.36 | Spain | 29.59 |
| 5 | China | 17.8 | UK | 19.5 | UK | 20.23 | UK | 21.23 |
| 6 | Germany | 17.2 | Germany | 18.5 | Germany | 16.73 | Germany | 15.86 |
| 7 | UK | 16.3 | China | 16.2 | China | 14.10 | China | 12.6 |
| 8 | Canada | 10.8 | Canada | 10.7 | Austria | 12.53 | Austria | 11.56 |
| 9 | Austria | 10.1 | Austria | 9.9 | Canada | 10.17 | Canada | 9.13 |
| 10 | Greece | - | Greece | 9.2 | Greece | 8.78 | Turkey | 8.3 |

Source: WTO (2002, 2003; Unit: US$ billion)

Regarding domestic tourism, more Chinese began to travel during this period. In 1996, 1.6 million Chinese tourists paid their way to travel abroad. As economic crisis has engulfed the Southeast Asian region, usual travellers have been deferred by the crisis, however, Chinese outbound travel has increased. According to CNTA, total outbound trips more than doubled between 1991 and 1997. Until now, the Chinese government has nominated 17 destination countries and regions available to Chinese travellers (CNTA 2001b) (see Table 5-4).

**Table 5 - 4 Officially approved foreign destinations for Chinese outbound tourists, 1990-1998**

| Destination | Year approved |
|---|---|
| Hong Kong SAR | 1990 |
| Macau SAR | 1990 |
| Malaysia | 1990 |
| Singapore | 1990 |
| Thailand | 1990 |
| Philippines | 1992 |
| Australia | 1998 |
| New Zealand | 1998 |
| Japan | 1998 |
| Republic of Korea | 1998 |

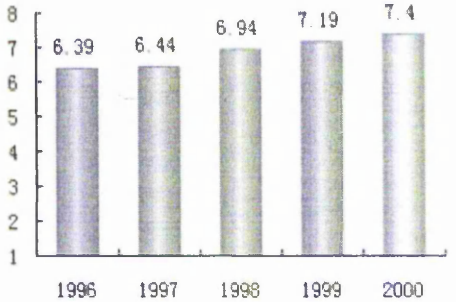
Source: CNTA (2001b)

In 2000, Chinese outbound travellers totalled 10.47 million, 23.43 percent more than in 1999. Among them business travellers accounted for 46.23 percent, down 2.51 percent since 1999, and private travellers accounted for 53.77 percent, up 31.99 percent from 1999 (CNTA 2003a; 2003b) (see Figure 5-2 a&b). Border tourism, at all borders has flourished and travel to Hong Kong and Macau SARs has grown steadily. China has become a fast growing, tourist-generating country in Asia. In the meantime, about 7.4

billion people travelled inside China. This has made the domestic tourism market virtually the largest in the world (see Table 5-5). However the existing gap is that according to CNTA (2001b: 37), there are only 1 percent of Chinese citizens who travel abroad. In the meantime, tourists, other than for the purpose of leisure and holiday, are in the majority. They are not the authentic outbound tourists. Chinese domestic tourism has grown rapidly, however its total income is low.

**Figure 5 - 2 Total number of domestic and outbound tourists in China**

a. Domestic tourists (1996-2000, Unit: 100Mn)




Source: CNTA (2003a)

b. Outbound tourists (2000)

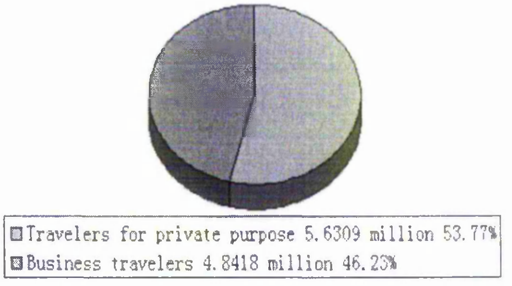



**Table 5 - 5 The growth of Chinese outbound and domestic tourism during the 9th National Five-Year Plan, 1996-2000**

| Year | Outbound Tourism | | | | | | Domestic Tourism | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Total number of outbound (Mn) | Growth rate (%) | For private purpose (Mn) | Growth rate (%) | Organised by travel agency (Mn) | Growth rate (%) | Person/time of domestic tourism (Mn) | Growth rate (%) | Tourism income (RMB, Bn) | Growth rate (%) |
| 1996 | 5.06 | 12.0 | 2.41 | 17.5 | 1.64 | 30.2 | 640 | 1.6 | 1638 | 19.1 |
| 1997 | 5.32 | 5.2 | 2.44 | 1.1 | 1.43 | -12.8 | 644 | 0.8 | 2113 | 29.0 |
| 1998 | 5.89 | 10.7 | 3.19 | 30.8 | 1.81 | 26.6 | 694 | 7.8 | 2391 | 13.2 |
| 1999 | 6.69 | 13.6 | 4.27 | 33.7 | - | - | 720 | 3.7 | 2831 | 18.4 |
| 2000 | 10 | 49.5 | 5.5 | 28.8 | - | - | 744 | 3.5 | 3176 | 16.6 |
| Total | 32.96 | Annual average: 18.6 | 17.81 | Annual average: 22.9 | - | Annual average: 5.1 | 3442 | Annual average: 3.4 | 12148 | Annual average: 18.2 |

Source: CNTA (2001b)

Travel and tourism are a catalyst for social and economic development. In 2000, travel and tourism have contributed an estimated $451.9 billion to national GDP (CNTA 2001b), which is almost 10 times more than in 1985 (see Table 5-6). More outstandingly, the income of foreign currency from tourism has been almost half of the total national foreign currency income. The rapid growth of tourism itself also spurred on changes in many other social and economic sectors. It encouraged national consumption and demand, increased the standard of living of Chinese people, dynamited national economy, drew foreign capital and introduced Chinese culture and a positive image of China to the world. Tourism is directly and indirectly the largest creator of employment in China. Tourism is a labour intensive industry, that requires a relatively unskilled but adaptable and flexible workforce; and China is a country with an enormous population. In respect to these facts it is little wonder that tourism has contributed significantly in releasing the pressure of China's economic development as a whole. According to CNTA (2001b), tourism accounted for about 5.6415 and 28 million direct and non-direct jobs. There are about 268.4 thousand travel-related business enterprises and non-business tourism institutions in China. It is estimated that by 2010, the tourism sector in China could account for more than 1 in 11 jobs.

**Table 5 - 6 Contribution of tourism income to annual national GDP, 1985-2000**

| Year | Total National GDP (RMB, Billion.) | Tourism income (RMB, Billion) | Percentage |
|---|---|---|---|
| 1985 | 8964 | 117 | 1.31 |
| 1986 | 10202 | 159 | 1.56 |
| 1987 | 11963 | 209 | 1.75 |
| 1988 | 14928 | 271 | 1.82 |
| 1989 | 16909 | 220 | 1.30 |
| 1990 | 18548 | 276 | 1.49 |
| 1991 | 21618 | 351 | 1.62 |
| 1992 | 26638 | 467 | 1.75 |
| 1993 | 34634 | 1134 | 3.27 |
| 1994 | 46759 | 1655 | 3.54 |
| 1995 | 58478 | 2098 | 3.59 |
| 1996 | 67885 | 2487 | 3.66 |
| 1997 | 74772 | 3112 | 4.16 |
| 1998 | 79553 | 3439 | 4.32 |
| 1999 | 81911 | 4002 | 4.88 |
| 2000 | 89485 | 4519 | 5.05 |

Data sources: China Tourism Yearbook; China Statistics Yearbook; China Domestic Tourism Survey; He (1999b).

Reviewing all these years, four major changes in China's tourism development can be identified. They are the dramatic change in the attitude and policy of the government toward tourism; the rapid expansion of various types of tourism market; the positive building of a favourable international image of China in the world; the full growth of social and economic contexts of tourism across the whole country.

From all these, we can assert that after 20 years of reform, tourism development has reached a higher status; the whole social and economic contexts have also set up solid foundation for tourism growth. It is estimated that, in the long term, China's travel and tourism economy will grow at a real rate of 7.9 percent per year, more than twice the predicted global rate of 3.4 per cent. According to the World Tourism Organisation (WTO), China is set to become a major player in the international tourism market by the year 2020; around 100 million Chinese should be taking international trips with an enormous expansion in the Chinese domestic market. China will also outrank France as the world's top destination (International Herald Tribune 1999; WTO 1998) (see Table 5-7). The hosting of the Olympic Games in 2008 and the joining of World Trade Organisation in 2001 will lend yet more impetus for tourism development. In the future, China's tourism industry will see more tourists and tourism operators come in and go out. More investment will be attracted to tourism infrastructure construction. Also more competition will further rationalise the tourism structure and market. The infant period of the Chinese tourism industry has passed; a maturing of the tourism market is in the making.

**Table 5 - 7 Estimated world's top inbound and outbound countries in 2020**

| World's top destination, 2020 | | | | | World's top outbound countries, 2020 | | | |
|---|---|---|---|---|---|---|---|---|
| | Country | Tourist arrivals (Mn) | Market share (%) | Growth rate p.a. 1995-2020 (%) | | Country | Total arrivals generated worldwide (Mn) | Market share (%) |
| 1 | China | 137.1 | 8.6 | 8.0 | 1 | Germany | 163.5 | 10.2 |
| 2 | United States | 102.4 | 6.4 | 3.5 | 2 | Japan | 141.5 | 10.2 |
| 3 | France | 93.3 | 5.8 | 1.8 | 3 | United States | 123.3 | 8.8 |
| 4 | Spain | 71.0 | 4.4 | 2.4 | 4 | China | 100.0 | 7.7 |
| 5 | Hong Kong SAR | 59.3 | 3.7 | 7.3 | 5 | UK | 96.1 | 6.2 |
| 6 | Italy | 52.9 | 3.3 | 2.2 | 6 | France | 37.6 | 6.0 |
| 7 | UK | 52.8 | 3.3 | 3.0 | 7 | Netherlands | 35.4 | 2.3 |
| 8 | Mexico | 48.9 | 3.1 | 3.6 | 8 | Canada | 31.3 | 2.2 |
| 9 | Russian Fed. | 47.1 | 2.9 | 6.7 | 9 | Russian Fed. | 30.5 | 1.9 |
| 10 | Czech Rep. | 44.0 | 2.7 | 4.0 | 10 | Italy | 29.7 | 1.9 |
| Total (1-10): | | | 708.8 | 44.2 | Total (1-10): | | 788.9 | 49.2 |

Source: WTO (1998); CNTA (2001a).

### *5.2.2 The tourism industry infrastructure*

A vital component of a strong travel and tourism industry is a good infrastructure and a well-organised industrial system. The improvement of these facilities remains critical to the future of China's tourism. At the early stage of tourism development, the structure of tourism organisations and the basic constructs of tourism policy in China showed remnants of the state-dominated tourism. Since then although tourism for political purposes still lingers on, there has been a major change in tourism driven by economic objectives. The most important innovation in the post-Mao era has been the decentralisation of tourism development decision-making. Some important aspects of the tourism infrastructure include transportation, travel agency, accommodation and so on.

#### 5.2.2.1 Transportation

The beginning of the economic reform has witnessed a stringent 'bottle neck' phenomenon in transportation and other public infrastructures, such as roads and airports. Since 1980, China civil aviation has been undergoing a substantial growth, which is twice faster than the whole national economy. In 1984, there was only one airline company in China - CAAC. To improve the efficiency of management and to meet the needs of tourism growth, by the year 2000, there are more than 44 airline companies ranging from central to local companies (excluding Airlines in Hong Kong SAR (CAAC 2003)).

In the 9$^{th}$ Five-Year Plan (1996-2000), US$12 billion was allocated for the construction, renovation, and expansion of 41 airports. It is estimated that by 2010, China will have built 170 airports. Recent rules permitting foreign investment in airport development and management may also boost expansion (Wayne 1999). China's major cities, such as Beijing, Shanghai and Guangzhou, are all served by direct flights from other countries. The domestic airlines radiate from Beijing to all the provinces, autonomous regions and centrally administered municipalities, open cities and border areas (see Table 5-8, refer to Appendix One).

**Table 5 - 8 International air connections in China, 2003**

| Countries | No of cities | Countries | No. of cities | Countries | No. of cities |
|---|---|---|---|---|---|
| Japan | 13 | Indonesia | 1 | Denmark | 1 |
| South Korea | 2 | Malaysia | 1 | Spain | 1 |
| North Korea | 1 | Pakistan | 1 | Russia | 4 |
| Vietnam | 2 | Kuwait | 1 | Italy | 1 |
| Laos | 1 | UAE | 1 | Holland | 1 |
| Mongolia | 1 | Kazakhstan | 1 | Belgium | 1 |
| Myanmar | 1 | Kyrgyzstan | 1 | New Zealand | 1 |
| Thailand | 1 | the UK | 1 | Australia | 2 |
| Singapore | 1 | France | 1 | The USA | 6 |
| the Philippines | 1 | Germany | 1 | Canada | 1 |
| Nepal | 1 | Sweden | 1 | | |

Source: CAAC (2003)

Rail travel routes have seen a number of improvements including the upgrading of the control system. Since 1997, the implementation of two speedups and some price changing has happened. These changes have brought both economic and social benefits. The Chinese rail network covers 66,000 km, of which 11,900 km are electrified. There is a comfortable ship service between most of China's major ports, including Hong Kong SAR, Shanghai, Hainan, Macau SAR, Shantou, Shenzhen, Xiamen, and Zhongshan. There are regular ferry and boat connections between Hong Kong SAR and Guangzhou. The same is true for some of the big rivers, particularly the Yangtze River, the Heilongjiang River, the Pearl River and the Grand Canal between Beijing and Hang Zhou. After twenty years of reform there have been rapid changes in the geographic expansion of transport operations internationally and domestically; capacity expansion to suit the market needs; and changes is the management style of tourism organisations. A more market-oriented management style has been established, and more competition has been introduced into transport operation, which has subsequently led to improvement in service quality and pricing policy. Table 5-9 shows the volume of different types of transport facilities in China.

**Table 5 - 9 Transportation in China**

| Item | Length and volume |
|---|---|
| Airport | 489 (in 2000) |
| - with paved runaway | 324 |
| - with unpaved runaways | 165 |
| Railway | 67,524 km |
| Highway | Total 1.4 million km |
| - paved | 271,300 km |
| - unpaved | 1,128,700 km (in 1999) |
| Waterways | 110,000 km (1999) |
| Ports and harbours | Dalian, Fuzhou, Guangzhou, Haikou, Huangpu, Lianyungang, Nanjing, Nantong, Ningbo, Qingdao, Qinhuangdao, Shanghai, Shantou, Tianjin, Xiamen, Xigang, Yantai, Zhanjiang |

Data source: http://www.traveljournals.net/countries/

### 5.2.2.2 Travel agency system

In more than two decades, the travel agency system in China has experienced a dramatic change. The first central government travel agency organisation - China Travel Service (CTS) was established in 1949, in order to facilitate the travel of overseas Chinese to China; and China International Travel Service (CITS) in 1954, for non-Chinese visitors. In 1964 the Travel and Tourism Bureau (now the China National Tourism Administration) was created as a policy-making body to oversee CTS and CITS, and like them, has created provincial branches (The Economist Intelligence Unit Limited 1995). These countable branches were the predecessors of the present travel agencies. Nowadays, numerous new travel agencies are created, or separated from the central organisation to operate independently. By the end of 2000, there were altogether 8,993 travel agencies in China, 1,667 more than in 1999. Of the above figure, about 1,268 were international travel agencies and 7,725 domestic travel agencies (1,256 and 6,070 respectively in 1999) (CNTA 2001c: 123). The tourist receiving capacity of these travel agencies has expanded rapidly.

Primarily, three types of travel agencies are licensed. Category A agencies, such as China International Travel Service (CITS), China Travel Service (CTS), and China Youth Travel Service (CYTS), are usually under central government operation and handle most of the international tourists. Category B agencies cannot conduct business with foreign tour operators directly but can handle international tourists for Category A agencies.

Category C agencies can only handle the domestic travel of Chinese citizens. However, since tourism has increasingly become an integral part of the country's economy and people's lives, this system has become an obstacle and the differences between the different agencies blurred.

The challenges this sector facing is that, although there are many travel agencies, the characteristics of these travel agencies are 'small, scattered, weak and of low quality'. For example, in 1999, the total income of all the travel agencies in China was only equivalent to half of the income of American Express in 1991 (CNTA 2001b: 34). The old system of tourism management and operation is still unable to suit the development trends of tourism.

#### 5.2.2.3 Accommodation

The management and operation of the hotel sector is relatively more open and more modern than that of the travel agencies. Many international hotel groups and companies have entered the Chinese market since the very beginning of the economic reform. They brought new technology, management styles and marketing strategy, and rapidly elevated China's hotel industry to a world standard. The capacity of hotels national wide has been able to meet the need to inbound and domestic market. In 2000, there are more than 10,000 different types of hotels satisfying different market demands (see Table 5-10). However, there still are problems in terms of the quality and service of the sectors, and in terms of regional inequality.

**Table 5 - 10 Breakdown of hotels by status, capacity and star-rating, 2000**

| Type | No. of Hotel | Room occupancy (%) | Revenue (RMB, bn) |
|---|---|---|---|
| **Registration status Total** | 10,481 | 55.85 | 86.23 |
| state-owned | 6,646 | 54.34 | 46.5 |
| collective owned | 1,280 | 53.11 | 5.60 |
| share holding co-operative | 69 | 61.03 | 0.82 |
| alliance | 176 | 55.33 | 1.25 |
| limited liability | 383 | 59.24 | 3.25 |
| limited liability shares | 395 | 60.16 | 4.01 |
| private-owned | 324 | 54.88 | 1.00 |
| others | 375 | 56.62 | 2.13 |
| Hong Kong and Macau SARs and Taiwan funded | 414 | 63.64 | 13.89 |
| Foreign funded | 419 | 58.89 | 7.78 |
| **Capacity Total** | 10,481 | 55.85 | 86.23 |
| rooms over 500 | 129 | 63.76 | 21.61 |
| rooms between 300-499 | 309 | 61.23 | 14.57 |
| rooms between 200-299 | 547 | 58.15 | 13.45 |
| rooms between 100-199 | 1,926 | 55.18 | 18.76 |
| rooms under 99 | 7,570 | 51.15 | 17.84 |
| **Star-rated hotel Total** | 10,481 | 55.85 | 86.23 |
| star-rated hotel | 6,029 | 57.58 | 60.37 |
| 5-star | 117 | 65.04 | 12.91 |
| 4-star | 352 | 63.08 | 14.14 |
| 3-star | 1,899 | 58.65 | 21.60 |
| 2-star | 3,061 | 53.32 | 10.65 |
| 1-star | 600 | 46.96 | 1.06 |
| non-star | 4,452 | 52.99 | 25.86 |

Data source: CNTA (2001c:92).

### 5.2.2.4 Others

Entertaining, shopping and dinning sectors supply basic facilities for tourism activities. The establishment of these facilities parallel with the increase of tourism arrivals. Except the dinning sector having relative high capacity in China, other sectors all lag behind well developed tourism countries/regions, in which shopping could create around 30 per cent of tourism incomes. This figure reaches as high as 50-60 per cent in Singapore and Hong Kong SAR, which are known as 'shopping heavens' (CNTA 2001b: 55). Leisure facilities, such as theme parks, sport/leisure services, art performances and cultural entertainment have been gradually recognised only after the advent of mass domestic tourism. Except for the rapid expansion of theme park, none of the facilities has reached maturity to attract international tourists and diversify tourism types.

## 5.3 AN OVERVIEW OF TOURISM RESOURCES IN CHINA

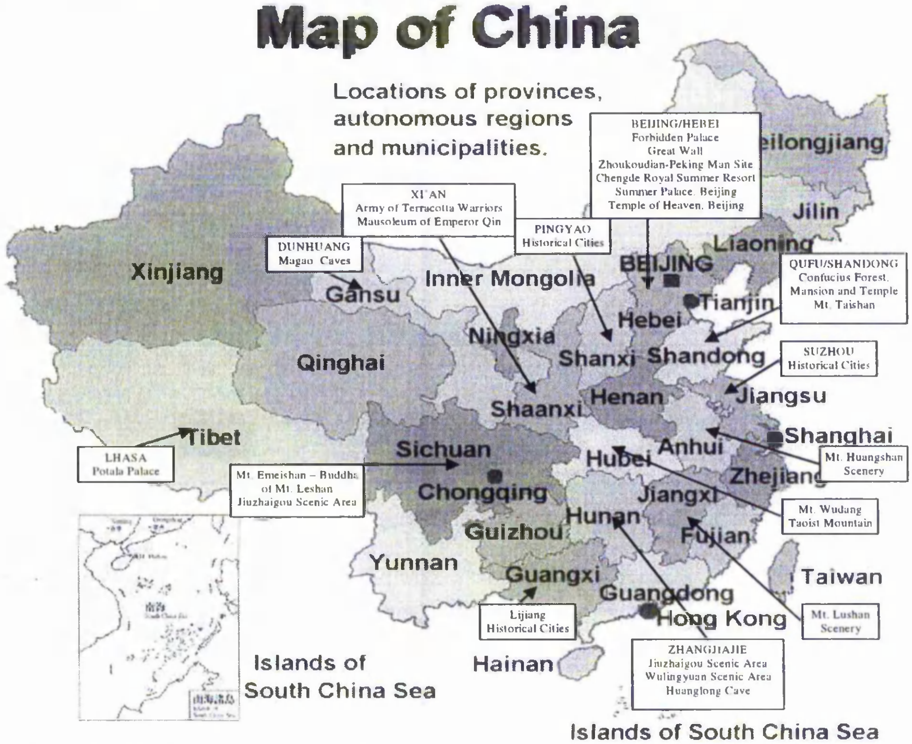
China is a vast country, which is an advantage for conducting spatial analysis, but also imposes difficulties when trying to capture all the complexity stemming from its enormity and diversity of tourism resources. The following part puts emphases on explaining and proposing a justifiable method to regionalise the country so that the proceeding empirical research of the SDT can be carried out with a clear and simplified structure.

### *5.3.1 Types of tourism resources*

China is famous for its diverse, rich and distinctive tourism resources, which were determined by China's special geographic landscape, a variety of nationalities and long cultural history. Until the end of 2000, throughout the country there were about 14,000 different types of tourist attractions in China, accommodating more than 8 billion person/time inbound and domestic tourists (CNTA 2001b: 120). These include 963 natural protection zones; 512 scenery zones; 861 forest parks; 99 historical and cultural cities; and 703 national protection heritages (CNTA 2001b: 142). Some of them have been recognised by UNESCO as World Heritage Sites (see Figure 5-3).

The entire tourism industry rests on a wealthy base of tourism resources. Yet, exactly what are tourism resources? Tourism researchers have given varied definitions. They basically refer to the supply side of the tourism system which are combinations of cultural, natural and social elements stemming from a specific geographic space on the earth, that generate an interest in tourists to visit the space, i.e. the demand-side of the tourism system. However, tourism does not occur evenly or randomly in space. The spatial variation of tourists is closely linked to the nature and the spatial patterns of tourism resources (Boniface 1994; Mcintosh 1986; Zhang 1995). Therefore, it is indispensable to understand the 'supply-side phenomena' of tourism in order to understand the spatial behaviour of tourists (Spotts 1997: 3).

## Figure 5 - 3 World Heritage Sites and their year of approval in China




| 1. Cultural Heritage | | City/Province | Year of approval |
|---|---|---|---|
| 1. | The Great Wall | Beijing | 1987 |
| 2. | Imperial Palace of the Ming and Qing Dynasties | Beijing | 1987 |
| 3. | Magao Cave | Dunhuang, Gansu | 1987 |
| 4. | Mausoleum of the First Qin Emperor | Xi'an, Shaanxi | 1987 |
| 5. | Peking Man Site at Zhoukoudian | Hebei | 1987 |
| 6. | Mountain Resort and its Outlying Temples, Chengde | Hebei | 1994 |
| 7. | Temple of Confucius, Cemetery of Confucius and Kong Family Mansion in | Qufu, Shandong | 1994 |
| | Qufu | Hubei | 1994 |
| 8. | Ancient Building Complex in the Wudang Mountains | Tibet | 1994, 2000 |
| 9. | Potala Palace and the Jokhan Temple Monastery, Lhasa | Yunnan | 1997 |
| 10. | Old Town of Lijiang | Shanxi | 1997 |
| 11. | Ancient City of Pingyao | Jiangsu | 1997,2000 |
| 12. | Classical Gardens of Suzhou | Beijing | 1998 |
| 13. | Summer Palace, an Imperial Garden in Beijing | Beijing | 1998 |
| 14. | Temple of Heaven, an Imperial Sacrificial Altar in Beijing | Sichuan | 1999 |
| 15. | Dazu Rock Carvings | Anhui | 2000 |
| 16. | Ancient Villages in Southern Anhui – Xidi and Hongcun | Henan | 2000 |
| 17. | Longmen Grottoes | Beijing | 2000 |
| 18. | Imperial Tombs of the Ming and Qing Dynasties | | |
| **2. Natural Heritage** | | | |
| 1. | Jiuzhaigou Valley Scenic and Historic Interest Area | Jiuzhaigou, Hunan | 1992 |
| 2. | Huanglong Scenic and Historic Interest Area | Jiuzhaigou, Hunan | 1992 |
| 3. | Wulingyuan Scenic and Historic Interest Area | Jiuzhaigou, Hunan | 1992 |
| **3. Natural and Cultural Heritage** | | | |
| 1. | Mount Taishan | Shangdong | 1987 |
| 2. | Mount Huangshan | Anhui | 1990 |
| 3. | Mount Lushan National Park | Jiangxi | 1996 |
| 4. | Mount Emei Scenic Area, including Leshan Giant Buddha Scenic Area | Sichuan | 1996 |
| 5. | Mount Wuyi | Fujian | 1999 |
| 6. | Mount Qincheng and the Dujiangyan Irrigation System | Sichuan | 2000 |
| **4. Masterpieces of Oral and Intangible Heritage of Humanity** | | | |
| 1. Kunqu Opera | | | 2001 |

Table edited from: CNTA (2001b), UNESCO (2003)
Map source: http://www.chinatour.com/maps/maps.htm

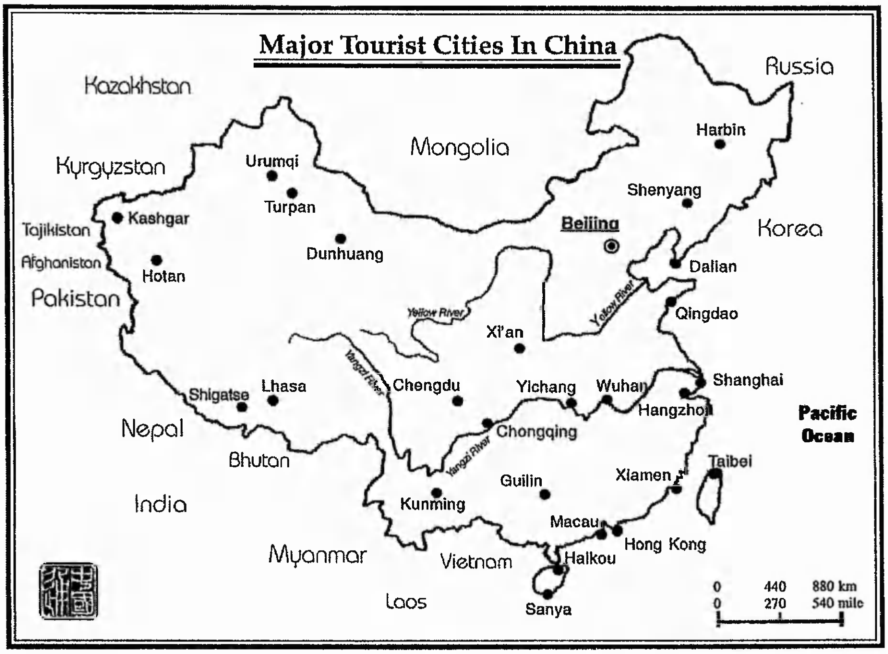
As tourism resources in China are complex, any spatial analysis in a country as large as China will impose immense practical difficulties, therefore classification of these resources are necessary. Regionalisation is a convenient way to classify these resources. The main purpose of regionalisation is to capture the core characteristics of tourism resources of each tourism region; and to reduce the supply-side of the tourism phenomenon so that the information elicited will be more effective for understanding the spatial behaviour of tourists within a tourism system.

Based upon the functions and characteristics of these resources, tourism resources in China can be classified into four major groups. They are the natural-based beauties, cultural and historical-based natural or man-made heritages, and ethnic customs and inheritances. The rest are combinations of all the man-made servicing and entertaining attractions and facilities, such as shopping and sport facilities, and theme parks. Natural-based resources refer to the natural and geographic elements, such as landscape, water scenery, climate, flora and fauna. Geographically China has a landmass of approximately 9.6 million square kilometres, which is nearly one-fifteenth of the world's land. From north to south, China extends across five climate zones. From east to west, China ascends from the coastline to middle lowland, to the highest plateau in the roof of the world. This geographical environment and physical landscape provide China with various beautiful wonders and natural scenery.

Despite these natural assets, five thousand years of recorded history amplifies all the fascination of China. Two religions and one great philosophy have influenced China's culture and history tremendously. Their influences have also flowed across the borders and reached many neighbouring countries, such as Japan, Korea and many South-east Asian countries. The immensely long history of civilisation has left a strong manifestation in China's human and natural landscape. Many of the tourism attractions are cultural and historical remainders which international tourists are fascinated to seek and experience. Due to this reason, most of the famous Chinese scenic localities are a combination of cultural and natural endowment. Tourism attractions such as the Silk Road and Great Wall are not simple attractions but symbols of China. They stand there telling the legends of Chinese people living and interacting with their space. In these places, natural beauty and human landscape are wonderfully blended together.

China is also one of the rare naturally nurtured multiracial countries in the world. It embraces 56 ethnic groups. Each of them with their distinctive cultural and historical characters. According to the 1982 census, the Han people account for about 92 percent and the 55 minorities account for about 6.7 percent of the total population (Bian 1992: 226). Many of the small minorities have historical and ethnic ties with many countries around the borders, such as Korean in Jilin province, Mongolian in Inner Mongolia. These regions have numerous scenic attractions and historical stories accompanied by unique and famous traditional festivals, customs, clothing and habitation. These characteristics enrich the social-cultural appeals of tourism in China, attracting tourists from the neighbouring countries/regions as well as the rest of the world (see Figure 5-4).

**Figure 5 - 4 Major tourist cities in and border countries of China**

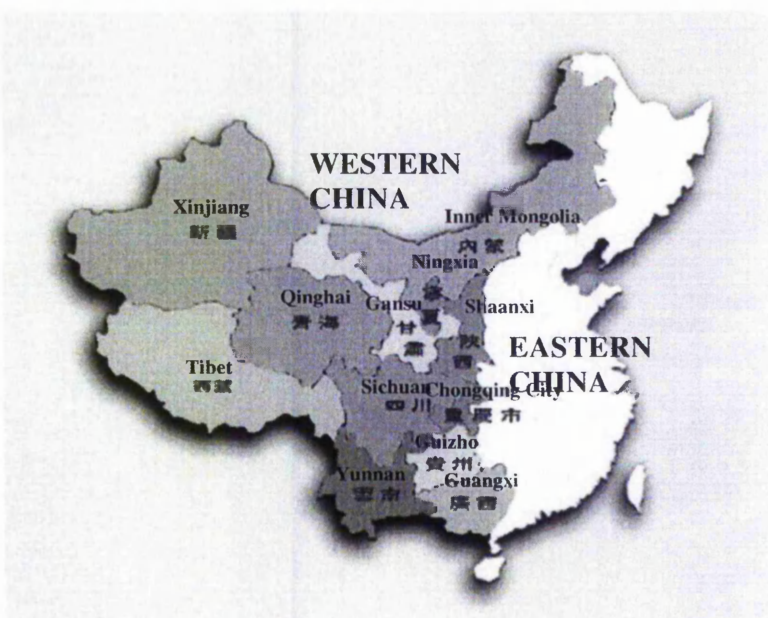



Note: *border countries of China:* Afghanistan 76 km, Bhutan 470 km, Burma 2,185 km, India 3,380 km, Kazakhstan 1,533 km, North Korea 1,416 km, Kyrgyzstan 858 km, Laos 423 km, Mongolia 4,673 km, Nepal 1,236 km, Pakistan 523 km, Russia (northeast) 3,605 km, Russia (northwest) 40 km, Tajikistan 414 km, Vietnam 1,281 km; also Hong Kong SAR 30 km and Macau SAR 0.34 km.
Data source: http://www.sinopolis.com/library/MAP/china_facts.htm
Map source: http://www.chinatour.com/maps/touristcities.gif

### *5.3.2 Spatial disparity of tourism resources in China*

The different types of tourist resources and attractions are not equally distributed in the whole country. The disparity comprises in two aspects. The first one is eastern-western disparity. Many of natural and cultural combined types of tourism attractions are located along the coastal line and eastern part of China. It covers Beijing, Shanghai, Jiangsu, Zhejiang, Fujian and Guangdong, which are the backbone regions of tourism development. Under China's 7$^{th}$ Five-Year Plan (1989-1990), the western region covered Xinjiang, Ningxia, Gansu, Qinghai, Shaanxi, Sichuan, Yunnan, Guizhou, Tibet, Inner Mongolia , Guangxi and Chongqing Municipality (see Figure 5-5). However, slightly towards interior, Shaanxi, Guangxi, Yunnan, Hebei and Sichuan can be seen as a second tier of tourism regions. Many natural-based tourism resources have been developed in this region. However, for the rest of the western part of China, although it does not lack abundant nature-based tourism resources, most of them are virtually undeveloped. Economic conditions are also poor.

**Figure 5 - 5 Map of China and western regions**




Map source: http://www.chinapage.com/map/map.html

This disparity has an enormous impact on the SDIT in China. Of the seven key tourism provinces (including autonomous regions and special municipalities) designated during the 7$^{th}$ Five-Year Plan, all of them are situated in the eastern part of the country. They are Beijing, Shanghai, Jiangsu, Zhejiang, Guangdong, Shaanxi and Guangxi (Zhang 1995: 46). Despite being smaller in space, the coastal part of the country has a much bigger role to play in the overall tourism development in China.

The second disparity is rural-urban related. Famous cultural and historical heritages are more concentrated in cities. Rural regions do not have large share of the cultural or natural and cultural combined tourism resources in China (Wen 1998). For example, in 2000, total inbound tourists arrivals were 31.1235 million over the whole country, but cities received 23.6973 million in total, representing 76.1 per cent of the total number of inbound tourists received nation-wide. Among them, the three gateway cities – Beijing, Shanghai and Guangzhou, which have been endowed with a full range of tourism resources and well-equipped facilities, received the majority of inbound tourists in China.

### *5.3.3 Regionalisation of tourism resources*

The establishment of tourist regions as specific territorial units is necessary in almost all countries, and many levels of spatial analysis. By studying the movement of tourists, the destination country is treated as a whole system in which the unique combinations of tourism resources constitute tourism regions, and largely create the sense of place that contributes to the travelling experience of tourists. A tourism region therefore, is a geographic area containing different types of tourism resources, but that has core features or locations to represent the general characteristics of the whole region.

The basic approach of regionalisation is first, to identify the key characteristics of each region; then based upon these characteristics; the whole destination is divided into a few representative regional subsystems. Criteria used for the division can have non-behavioural and behavioural types. The first type contains elements beyond tourists' behaviour, such as the geographic hierarchy (Shen 1993); the potential of tourism development (Gunn 1980); the diversity of tourism resources (Anon 1993), and so on. One criticism of using non-behavioural criteria is that it is mechanical and non-system oriented because it omits the significant human elements of the tourism system, therefore misses out the effect of tourists on tourism regionalisation.

Contrary to this the second type involves the behavioural elements of tourists, such as travel patterns of tourists (CNTA 2001b ; Flognfeldt 1999; Smith 1984a), the perception of tourists (Fridgen 1987; Smith 1989), tourists' preferences (Ferrario 1979a, 1979b; Piperoglou 1966) and tourist arrivals and tourist types (Flognfeldt 1999). The use of these criteria is more relevant in the study of the SDT because it recognises the interrelationship between the regional characteristics of tourism resources and the spatial movement of tourists. For example, Flognfeldt (1999: 112) classified five types of tourism regions based on their tourist arrivals. They are:

(1) The tourism core area: the core areas have highest tourist's density
(2) Sub-core core area: less populous than the first type of area
(3) Border periphery: also a type of region attracting special tourists
(4) Peripheral area: has the lowest tourist's population
(5) Non-tourism area: with almost no tourist arrivals.

Similarly, Boniface and Cooper (1994) classified tourism resorts based on the physical scale of popularity of the destination. These regions are:

(1) Capital cities: located around transport links and adjacent to tourist attractions
(2) Popular resorts with extensive visitations: located away from population centre with good standardised infrastructure and resources
(3) Minor resorts: small less accessible and absent of organised tourism

Although the two types of regionalisation have incorporated the behavioural aspects of tourists, their limitation is that they do not indicate clearly what kind of tourism resources are integrated in different regions. It tells how many visitors visit each place, but does not tell what the core tourism features in these regions are. Although many tourism regions have been delineated according to their geographical boundaries, regionalisation does not need to be geographical. The administrative boundary will inevitably be involved because it is easy and naturally influential in determining the characteristics of tourism regions (Klaric 1992).

In summary while many researchers used different methods to regionalise tourism resources, some common features are identifiable. One is that all these methods emphasise the functions of tourism regions, no matter if they are from the perspective of tourism demand or tourism supply. Another characteristic is that in most regionalisation, there are controlled numbers of gateways through which tourists enter as well as exit. This is usually at the top of the ladder of tourist arrivals, and is therefore more likely to be used as the core sites of different tourism regions. Thirdly, it is clear that there are no hard and fast rules to delineate any tourist region (Piperoglou 1966), but all depend on the tourism situations in specific countries.

### *5.3.4 Regionalisation of tourism resources in China*

Although geographers in other countries have studied tourism geography for almost 70 years, research in tourism geography in China is a very recent activity driven by the unparalleled development of the tourism industry. One important theme of this research is the theoretical and practical studies of tourism regionalisation. As early as 1986, the regionalization of tourist areas in China has been specified. The tourism areas in China were divided into different categories according to their physical and cultural qualities, tourist arrivals and locational entities. For example, Guo (1990) suggests that Chinese tourism regions can be systematised with three levels based on the geography of these regions. They are tourist belts, tourist provinces and tourist regions. A tourist belt is based on the natural quality beyond provinces. A tourist province and region are within the frame of the tourist belt. A tourist province is based on the status of provincial administration. A tourist region is the base unit of tourist area, which is determined by the regional tourism attractions. According to this framework, the tourism regions of China have been divided into 10 tourist belts, 33 tourist provinces and 158 tourist regions (Guo 1990: 125-126). The 10 tourist belts are:

(1) Beijing and North China tourist belt with the classic and modern styles
(2) Northeast tourist belt with a typical northern scenery
(3) The Silk Road tourist belt with minority customs
(4) Middle and lower reaches of the Yellow River tourist belt with ancient civilisation
(5) Southwest China tourist belt with beautiful landscapes and minority customs
(6) Central China tourist belt with Jingchu Culture and charming landscape with hills and lakes
(7) East China tourist belt with Wuyue Culture and east Venice landscape
(8) South China tourist belt with Lingnan Culture and tropical-subtropical landscape
(9) The roof of the world tourist belt with marvellous landscape
(10) Hainan Island tourist belt with East-West Culture

Guo's classification emphasises the notion of the 'action space' of tourism resources, which is characterised by its location or region and physical endowment (Mansfeld 1990, refer to Section 2.5.1). Based on economic factors, such as tourism income and tourist receipts, CNTA (2001b) produced an index from which four regional tourism groups can be categorised. This classification parallels with the pattern of tourism development from which a clear geographical disparity can be identified (see Table 5-11), but it has a higher level of complexity because it focuses on the 'functional space' of tourism resources which are socially, culturally and economically constructed (Mansfeld 1990). The first group represents the most developed five cities/regions – Guangdong, Beijing, Shanghai, Fujian Jiangsu. They are all coastal cities/regions and national/regional gateways. Group two and three are tourism regions, which have moderate tourist appeals and tourist arrivals. The final one encompasses the least developed two interior provinces.

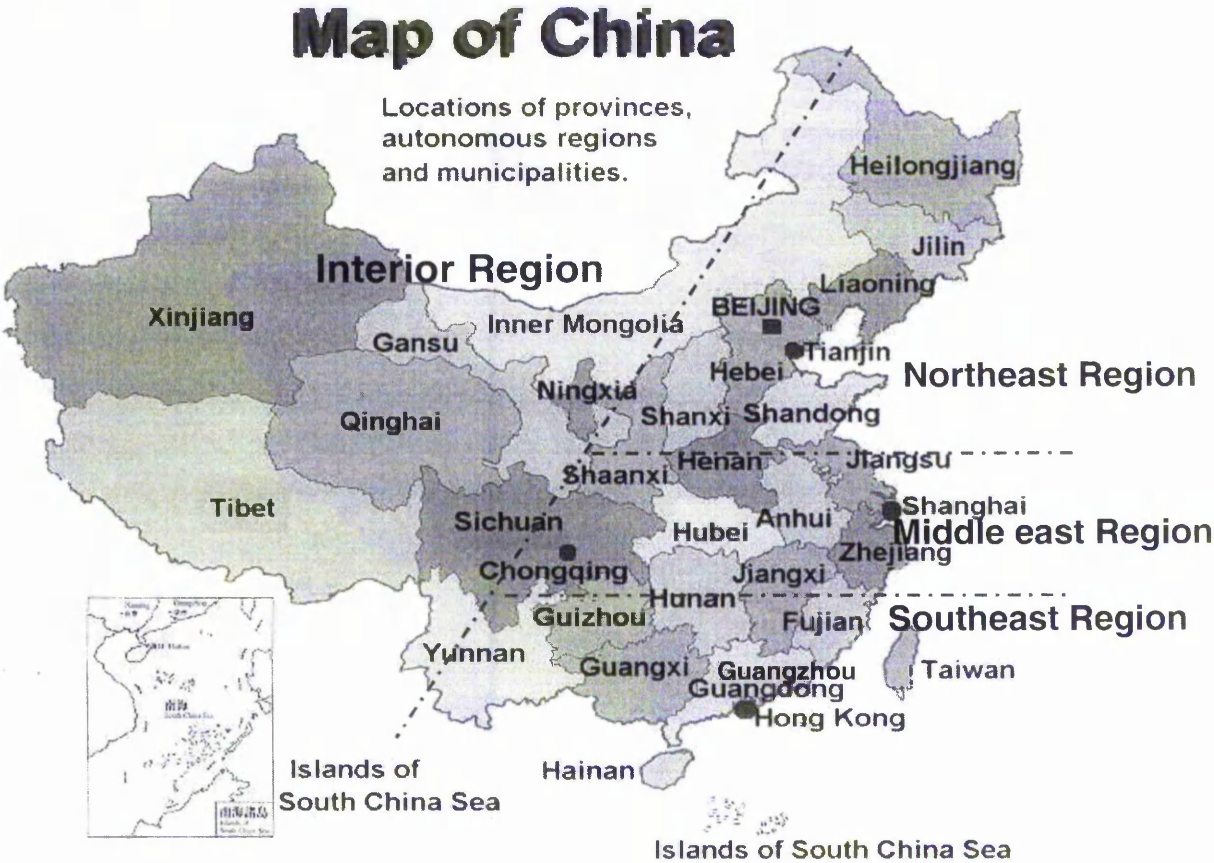
In defining the tourism regions, it has been clear that there are no methods that are theoretically and methodologically robust in defining tourism regions. Although researchers have discussed this issue vigorously, and many different approaches have been investigated. There is no consensus as yet on the concept or the definition of tourism regions in China. Based on this review, the definition of the tourism regions in China in the context of this research can be made in both theoretical and pragmatic ways, i.e. the regional approach used by previous researchers (such as Guo 1990) and the spatial selectivity of international tourist travelling to different areas in China. First, according to the relative presence of tourist arrivals in each area and the geographical locations of tourism resources, the tourism regions could be broadly divided into four regions – the Southeast coast, the Northeast coast, the Middle east region and the Interior region (see Figure 5-6). Then according to the general index developed based upon tourist receipts and income (CNTA 2001b), the tourism regions could be classified into four tiers. They correspond to the four groups presented in Table 5-11.

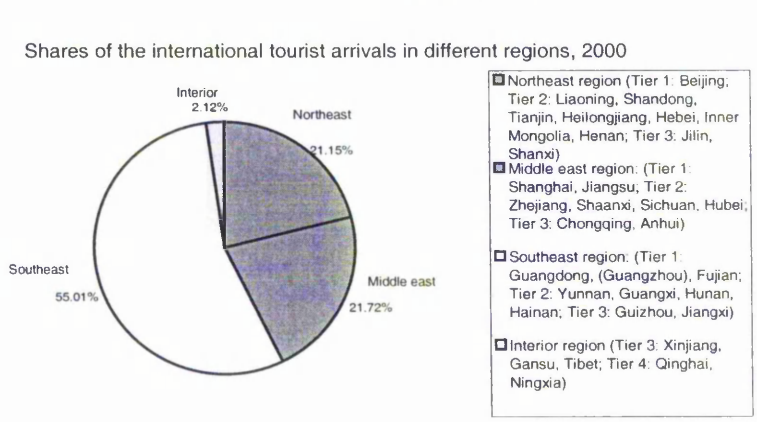
**Table 5 - 11 Tourism development in different provinces/cities in China, 2000**

| Sequence | Group | Site | Foreign Currency Index | Tourist Receipt Index | General Index |
|---|---|---|---|---|---|
| 1 | Group 1 region (general index exceeds 500) | Guangdong | 1881 | 1460 | 3341 |
| 2 | | Beijing | 1434 | 421 | 1855 |
| 3 | | Shanghai | 784 | 276 | 1060 |
| 4 | | Fujian | 417 | 226 | 643 |
| 5 | | Jiangsu | 357 | 224 | 581 |
| 6 | Group 2 region (general index lies between 499 – 100) | Zhejiang | 236 | 158 | 394 |
| 7 | | Yunnan | 201 | 173 | 375 |
| 8 | | Shaanxi | 156 | 105 | 261 |
| 9 | | Liaoning | 175 | 82 | 257 |
| 10 | | Shangdong | 152 | 104 | 256 |
| 11 | | Guangxi | 116 | 128 | 245 |
| 12 | | Tianjin | 120 | 53 | 174 |
| 13 | | Hunan | 107 | 64 | 171 |
| 14 | | Heilongjiang | 85 | 68 | 153 |
| 15 | | Hainan | 60 | 76 | 136 |
| 16 | | Hebei | 71 | 62 | 133 |
| 17 | | Inner Mongolia | 69 | 61 | 130 |
| 18 | | Sichuan | 56 | 62 | 118 |
| 19 | | Henan | 65 | 50 | 115 |
| 20 | | Hubei | 60 | 51 | 111 |
| 21 | Group 3 region (general index lies between 99 – 10) | Chongqing | 56 | 31 | 87 |
| 22 | | Xinjiang | 49 | 38 | 87 |
| 23 | | Anhui | 39 | 41 | 50 |
| 24 | | Guizhou | 32 | 28 | 59 |
| 25 | | Jilin | 26 | 26 | 52 |
| 26 | | Jiangxi | 29 | 23 | 52 |
| 27 | | Shanxi | 24 | 23 | 47 |
| 28 | | Gansu | 21 | 25 | 46 |
| 29 | | Tibet | 21 | 17 | 38 |
| 30 | Group 4 (general index is lower than 10) | Qinghai | 2 | 3 | 6 |
| 31 | | Ningxia | 1 | 1 | 2 |

Source: CNTA (2001b: 191-192).

**Figure 5 - 6 Market shares of international tourist arrivals in the four tourism regions, 2000**




Data source: CNTA (2001b, 2001c: 191-192)
Map source: http://www.chinatour.com/maps/maps.htm

The coastal area of China covers three municipalities and nine provinces. They could be divided into three parts – the Northeast and Southeast coast and Middle east region represented by China's three tourism gateways – Beijing, Shanghai and Guangzhou. These three areas occupy only 14 per cent of the national land area, but support around 40 per cent of China's population and produce above 54 per cent of its national income (Wen and Tisdell 1996: 235). The Northeast region includes Beijing and some key provinces such as Shandong, Hebei, Shaanxi, and Liaoning. Beijing is not only the capital of China, but also its cultural centre. Its world famous heritages attract tourists from all over the world. In this region, Shaanxi is also one of the top tourism destinations renowned for being home to one of the wonders of the world – the Terra Cotta Warriors. Though not all the areas in this region are at the top of the table of tourism destinations, these two areas bring the whole region to the fore.

The Middle east region contains Shanghai, Jiangsu, Zhejiang, and some surrounding provinces. They are the heart of China, and are all top tourism destinations. Following Beijing, Shanghai is another gateway city and is surrounded by two first class destinations – Jiangsu and Zhejiang. Shanghai has been called the 'Paris of China' and 'Queen of the Orient'. Although it has been forgotten for almost 50 years, its new renaissance brought to life its old splendours with new prosperity. In terms of their tourism appeals as a whole, Shanghai and its surrounding provinces including Jiangsu, Zhejiang, Anhui and Hubei can be treated as the Greater Shanghai Region (GSR).

In the Southeast region, Guangzhou is one of the three gateways. It is situated in Guangdong province, which is one of the most modernised provinces in China. Geographically, Guangzhou plays an important role in the formation of the small tourism circle of Guangdong, Hong Kong SAR and Macau SAR and, the bigger tourism circle of Guangdong and Southeast Asian countries such as Singapore and Thailand. At the heart of this region are two top tourism destinations – Yunnan and Guangxi. Yunnan borders Myanmar, Laos and Vietnam and has ranked one of the top 10 tourism destinations in China due to its remarkable appeals to the tourists from Southeast Asia and border regions. Its special location makes it one of the most attractive tourism regions in China and brings the peripheral regions into the world tourism market.

In the interior tourism regions, well-established and well-known tourist attractions are scant; particularly in Ningxia, Qinghai, and Inner Mongolia. Tourism infrastructures are also backward. The overall tourist arrivals of these areas account for only about 2 percent of the total national arrivals (CNTA 2001c). However, although Tibet is situated in this area, its unique appeals have made it one of the most attractive tourist sites with considerable tourism potential.

## 5.4 AN ANALYSIS OF INTERNATIONAL TOURISM IN CHINA – A GEOGRAPHICAL AND CROSS-CULTURAL PERSPECTIVE

The overall tourism industry in China starts from international tourism. Since the 1980s, international tourism in China has been marked by its tremendous expansion. Between 1978 and 2000, the number of international arrivals has shown an evolution from a mere 1.8 million to the current 83.44 million. The average growth of international tourist arrivals in the world is 4.7 per cent, but it is 22.8 per cent in China (CNTA 2001b). The latest forecasts indicate China will be the world's top destinations by the year 2020 with over 137 million international tourist arrivals in China (CNTA 2001b, 2001c).

The success of international tourism has not only attracted significant foreign tourists, but is also turning tourism into a source of wealth. In terms of economic benefit, tourism receipts increased from US$2.6 billion in 1978 to US$ 16.224 billion in 2000. The development of international tourism is also a catalyst for dramatic social changes. It helps to bridge the gap between China and the rest of the world in every socio-economic aspect and extends cultural understanding and friendship among different nations.

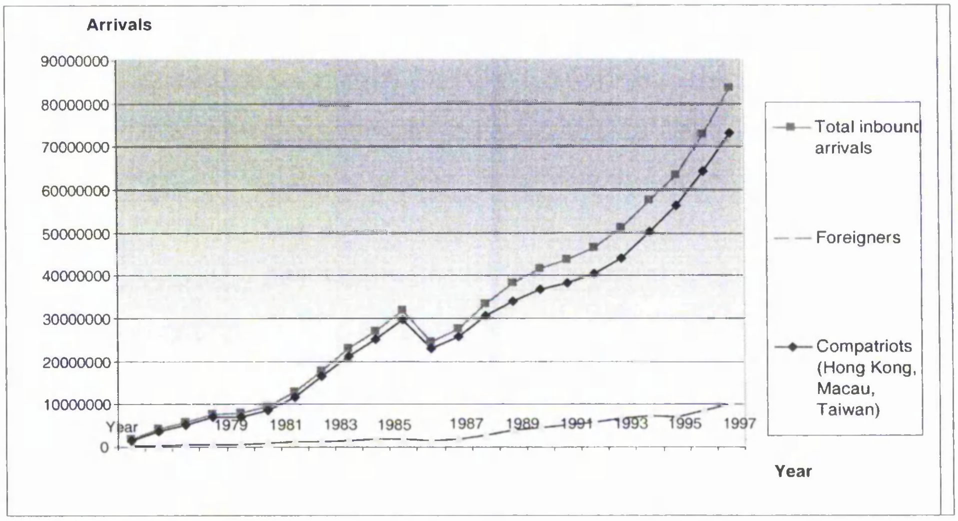
### 5.4.1 Typology and market forms of international tourism in China

International tourists come to China for various purposes, such as trade and business, education and professional exchanges, pilgrimage, delegations, VFR and leisure and holiday. Except the last two types of travellers, the other visitor groups listed are not tourists in the strictest sense. However, they are recorded as inbound arrivals in official statistics. The international tourists selected for this research belong to the final two types.

There are numerous categories in international tourist arrivals in China. As they are a mix of passport and residence qualifications, this can be very confusing. According to CNTA (1999), inbound tourists in China can be categorised into three general groups – Compatriots, foreigners and overseas Chinese. Compatriots are ethnic Chinese tourists from Hong Kong SAR, Macau SAR and Taiwan who stay at least one night in the accommodation within in China (CNTA 1999: 139). Although they are ethnic Chinese, besides this Hong Kong and Macau SARs are part of Mainland China after 1997 and 1999 respectively, they are still treated as foreign inbound tourists in Chinese tourism statistics. And continuously, the bulk of inbound visitors has come from these three areas.

Foreigners are another group of inbound tourists. Foreigners are persons with foreign citizenship, i.e. the country represented by the government who issues passports (or other identification documents) to visitors. Most foreigners are from Europe and North America. Tourists of Chinese descent, which have acquired foreign citizenship, are also recorded as foreigners. Opposite to this group of 'foreigner' is 'overseas Chinese' who are Chinese nationals holding Chinese passports but who reside abroad. In 2000, roughly 83.444 million inbound tourists travelled to China including all three types of tourist arrivals (CNTA 1999). Figure 5-7 illustrates the growth of tourist arrivals by these three types of inbound tourists.

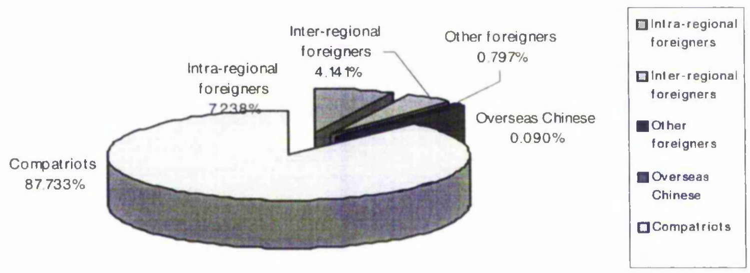
**Figure 5 - 7 Growth of tourist arrivals by the three types of inbound tourists, 1978-2000**




Data source: CNTA (2001c).

According to the WTO's classification (WTO 1998), the world tourism regions have six categories - Africa, Americas, East Asia and Oceanisia/Pacific (EAP), Europe, Middle East and South Asia. China is in the Asia/Pacific region. Based on this classification, international tourism in China can be categorised into four major forms relating to the geographical origins of the tourists. The first one is Compatriot tourism referring to tourist flows from Hong Kong, Macau SARs and Taiwan. The other two forms are inter-regional and intra-regional foreign tourism, acted mainly by foreign travellers dependent on if they reside insider or outside Asia/Pacific region. Border tourism can be seen as a special type of intra-regional foreign tourism referring to tourist flows between neighbouring countries or regions. The final form is overseas Chinese tourism. Although there were minor changes in the market shares of the four tourism forms, the general pattern has been keeping to the present (see Figure 5-8).

**Figure 5 - 8 Market share of international tourist arrivals in China by tourism forms, 2000**




Data source: CNTA (2001c).

### 5.4.1.1 Compatriot tourism

This form of market is unique to China's tourism. Like all the overseas Chinese, Compatriots from Taiwan, Hong Kong and Macau SARs feel a sentiment of nostalgia toward their ancestral land. The same Chinese cultural background is the most natural bound between people across these regions. As a consequence, the majority of them travel for the purpose of VFR or leisure. There are also a large number of business travellers. Although Hong Kong and Macau SARs have returned to the political sovereignty of China, Taiwan has a different government but is regarded as a province of China. Tourists from these three places are still categorised as international or inbound tourism in China's official statistics to the present day. Despite their geographic affinity, this type of tourist also enjoys a special access advantage over all other foreign tourists granted by the Chinese government (Lew 1995). As a result, there are high percentages of excursion, repeated and short-break travel in Compatriot tourism.

Although Taiwan and Mainland China have experienced intense political division and confrontation. Following the lifting of the restrictions on Taiwanese from Taiwan visiting the Chinese Mainland in 1987 China witnessed a quick expansion of this market. This market even increased during the 1989 Tiananmen Incident in Beijing. In 2000, total arrivals from Taiwan were 3.109 million, 86 per cent higher that in 1988 when tourist arrivals from Taiwan had just started (CNTA 2001c). After 10 years of rapid growth, the pace of growth rate in this market has become steadier.

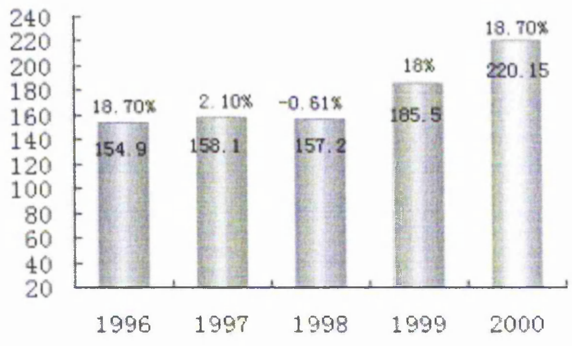
The market of Hong Kong and Macau SARs and Taiwan is the most crucial part of the tourism industry in China. For years, they held between 80-85 percent of the overall international market, making them the all time largest group of inbound tourists. This trend is still continuing after the two SARs returning to China. In 1998, the total arrivals from these regions continued to increase despite the Asian financial crisis in this region. In 2000, the total number of inbound tourists from Hong Kong and Macau SARs reached 73.208 million. This market significantly sustained the overall growth rate of more than 10 per cent for China's inbound tourism.

#### 5.4.1.2 Intra-regional tourism by foreigners

Foreigners are the second largest tourist group, and in 2000 foreign arrivals in China rose to over 10 millions for the first time (CNTA 2001c). They accounted for around 10 per cent of total inbound arrivals in China. The intra-regional countries, i.e. Asian countries are the main tourist-generating countries. Among the top 15 major tourist-generating countries, eight of them are intra-regional countries (Russia excluded). Overall intra-regional tourism accounts for two third of total foreign arrivals. Although in recent years international tourism development has seen a slightly unsteady growth of the international tourist flows from Asian generating countries, mainly due to the 1990s Asian financial crisis, the significance of this market has not declined. In the long run, it is still China's most lucrative market.

This market is dominated by tourists from Japan, South Korea and Southeast Asia, such as the Philippines, Malaysia, Singapore and Thailand. Next to them are Mongolia, Commonwealth of Independent States (CIS, former Soviet Union), border countries such as Burma, Vietnam and North Korea, and South and Middle Asian countries such as Pakistan, Nepal and India. Tourists from these regions are high in short breaks, repeated travel, VFR and trader travel. At the top of this market is the largest tourist generating country to China - Japan. In 2000 the total influx of Japanese tourists visiting China broke a record level of 2.2015 million holding a share of 21.7 percent of the inbound tourism generated by the top tourist generating countries to China (see Figure 5-9). Another important source country in this category is South Korea. The South Korean market has become the second largest tourist generating country since 1999. The less important market in this category is the Middle East countries or other middle/long haul countries (CNTA 2003a).

**Figure 5 - 9 Japanese tourist arrivals – number and growth rate, 1996-2000**




Source: CNTA (2003a) (Unit: 10,000 person)

China borders many countries/regions. Border tourism is a special form of intra-regional tourism. Compatriot tourism is a type of border tourism. Of the major tourist-generating countries, four have boundaries within China. They are Russia (classified into inter-regional tourism), South Korea, Mongolia and the Commonwealth of Independent States of former Soviet Union (CIS). The markets of Russia and the CIS have become the two largest sources of foreign arrivals in 1992 and the years after. However, a sharp decline was quickly experienced. The element of day-trippers and trade traffickers are high among these types of tourists. Border tourism also generates some day-trippers originally from foreign countries, which do not border China. Most of them arrive in Hong Kong SAR first and then cross the border of Hong Kong and Macau SARs, and few cross other borders such as Nepal, India and Russia. However, their number is limited and there is a scarcity of official statistics.

Although Russian travellers are treated as inter-regional tourists. This type of tourism could also be regarded as a special type of inter-regional tourism. The element of day-trippers among this type of tourism is very high. This is largely made up of the border-trade traffickers between China and some border countries. Since 1992, of the foreigner total, visitors from the CIS states have become the largest single source, overtaking Japanese and American tourists (The Economist Intelligence Unit Limited 1995:21-22). But after that, except for Mongolia, which experienced a slight growth, there was a sharp decline in Russian and CIS tourists. The rapid growth and decline demonstrated the fickle nature of these markets.

#### 5.4.1.3 Inter-regional tourism by foreigners

Inter-regional tourism accounts for around a quarter of the total foreign arrivals (CNTA 2001b). This market can be grouped into two tiers based on tourist arrivals. The first tier includes the top tourist-originating countries in North America, Europe and Oceanisia (Russia included). In general, countries in the first tier have more developed tourism industries and more developed economies. Tourists tend to stay longer and have a higher daily expenditure such as American and Western European markets. The markets are also growing steadily rather than erratically (see Table 5-12).

In the first tier, the North American market is mature and growing steadily. The United States is the largest source in North America and the number one long haul tourists generating country to China. In 2000, there were 896,200 Americans tourists who visited China, a rise of 21.7%, much higher than the previous year (see Figure 5-10). The Canadian market has been increasing steadily in the recent years (CNTA 2003a). Europe is the next most important source of inter-regional tourists. Main countries of origin include the UK, Germany, France and Russia. The UK is the biggest tourist generating market in Western Europe. In 2000, UK tourist travel to China reached 283,900 rising 9.6 percent (CNTA 2003a). Germany has a similar growth rate, which is 9.8 percent in 2000, steadily but not too fast. Tourists from North Europe and Middle Europe are less than those from Western Europe, but its growth rate is quicker. During 1988-1998, tourist arrivals from the whole Europe exceed the USA, but the latter's faster growth rate has meant that it has overtaken the European market since 1999. However, tourist arrivals from Russia have shown a swift rise and fall.

**Table 5 - 12 Breakdown of the major foreign markets, 1999-2000**

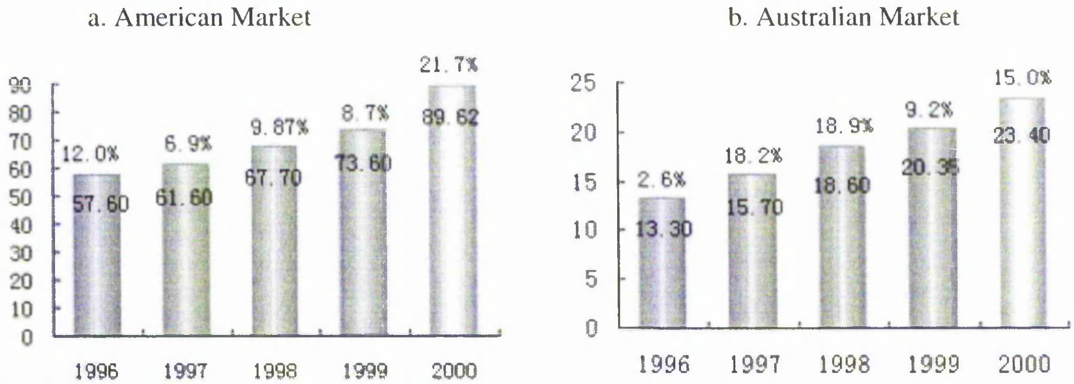
| Region | Country | *1999* | *2000* | *Growth Rate* |
|---|---|---|---|---|
| | Japan | 1,855,197.00 | 2,201,528.00 | 18.67% |
| | Korea | 991,979.00 | 1,344,721.00 | 35.56% |
| | Russia | 832,995.00 | 1,080,209.00 | 29.68% |
| | Mongolia | 354,459.00 | 399,110.00 | 12.60% |
| South-East Asia | Malaysia | 372,870.00 | 441,010.00 | 18.27% |
| | Philippines | 298,285.00 | 363,852.00 | 21.98% |
| | Singapore | 352,479.00 | 399,377.00 | 13.31% |
| | Thailand | 206,424.00 | 241,074.00 | 16.79% |
| | Indonesia | 182,904.00 | 220,554.00 | 20.58% |
| | Total | 1,230,058.00 | 1,445,313.00 | 17.50% |
| North America | USA | 736,386.00 | 896,180.00 | 21.70% |
| | Canada | 213,699.00 | 236,556.00 | 10.70% |
| | Total | 950,085.00 | 1,132,736.00 | 19.22% |
| Western Europe | UK | 258,894.00 | 283,877.00 | 9.65% |
| | Germany | 217,632.00 | 239,062.00 | 9.85% |
| | France | 155,640.00 | 184,964.00 | 18.84% |
| | Total | 632,166.00 | 707,903.00 | 11.98% |
| Oceanisia | Australia | 203,539.00 | 234,102.00 | 15.02% |
| | New Zealand | 31,440.00 | 37,595.00 | 19.58% |
| | Total | 234,979.00 | 271,697.00 | 15.63% |

Date Source: CNTA (2001c); (Unit: person)

The number of Australian tourists to China has increased steadily. The number in 2000 reached 234,000, up 15%. It is closely followed by New Zealand. Although Oceanisia is in the Asia/Pacific region according to the WTO's classification, it is classified as an inter-regional market because it is relatively far from China, tourists from this region are assumed to resemble those from North America and Europe (Hofstede 1980) (see Figure 5-10).

The second tier is African and South American markets. They are far from China and are trivial to Chinese tourism. However, recent years have shown a strong growth of tourist arrivals from this market, such as Africa, signified big potentials.

**Figure 5 - 10 Tourist arrivals from the USA and Australia, 1996-2000**




Source: CNTA (2003a) (Unit: 10,000 person).

Comparing to the intra-regional market, a weak point of the inter-regional market is worth noticing. Although North America and Europe are the biggest outbound markets in the world, they are promising markets for China as well; the percentages of the tourist arrivals to China to the total number of the outbound tourists in the world are not reasonably high. For example, in 1998, there were about 124.6 million outbound tourists in North America, but only 947,907 visited China and accounted for merely 0.761 per cent of the total outbound tourists. This situation is similar in Europe (0.470%). On the contrary, Asia/Pacific performs better in this aspect. There were about 4.023 per cent total outbound tourists who visited China in 1998. Only in recent years has the gap between inter- and intra-regional tourism begun to decline (see Table 5-13).

**Table 5 - 13 Comparison of the market share of China in the world, 1998**

| Regions | To the World | | In China | | China vs. World |
|---|---|---|---|---|---|
| | Outbound | Market share | Inbound | Market share | |
| North America | 124600000 | 19.60% | 947907 | 13.336% | 0.761% |
| Asia/Pacific/Middle East | 108500000 | 17.10% | 4364442 | 61.404% | 4.023% |
| Europe | 368900000 | 58% | 1734376 | 24.401% | 0.470% |
| Africa | 16200000 | 2.50% | 48168 | 0.678% | 0.297% |
| Other | 18300000 | 2.90% | 12854 | 0.181% | 0.070% |
| Total | 636600000 | 100% | 7107747 | 100% | 1.117% |

Date source: CNTA (2001c); WTO (2000) (Unit: person).

#### 5.4.1.4 Overseas Chinese tourism

Except for Chinese living in China, overseas Chinese who are not under direct rule of the People's Republic of China are distributed across virtually every country in the world. They are one of the major forces in China's tourism development. The precise definition of 'overseas Chinese' is Chinese nationals, or the descendants of Chinese parents living outside the P. R. of China. The term of 'overseas Chinese tourists' refers to actually three groups of tourists. The first group is the ethnic Chinese with foreign passports. This group actually contains a vast number of ethnic Chinese, but due to the difficulty in obtaining complete statistics most of this type of overseas Chinese tourists are recorded as foreign along with non-ethnic Chinese travellers. The second group is the ethnic Chinese who hold Chinese passports but reside abroad. For example, in Indonesia, 1.5 million (1982) ethnic Chinese hold a P. R. China's passport, and in Thailand more than 300,000 (1980) have P. R. China citizenship (Lew 1995; Poston and Yu 1990). The final one is categorised as 'Compatriot' who are the most direct Chinese groups. This group is categorised as a separate tourism form (see Section 5.4.1.1).

According to research into the distribution of overseas Chinese in the world by Poston and Yu (1990), there were between 26.8 million and 27.5 million overseas Chinese in the world in the early 1980s, a number that almost equals twice the total population of Australia (Wen 1985). Of the total overseas Chinese in the world, more than 90 percent resided in Asia. In many of the Southeast Asian countries, overseas Chinese comprise the majority. Except in Hong Kong and Macau SARs where Chinese are about 98 percent of the population, approximately 77 percent in Singapore, 55 percent in the Christmas Islands, one third in Malaysia and 13 percent in Thailand (Jones 1981; Poston and Yu 1990) (see Table 5-14). The second largest overseas Chinese source is North America. The rest are scattered in Europe, Oceanisia and Africa. If these figures were applied to the inbound tourists from these countries, the figure of overseas Chinese visiting China could be greatly increased.

Despite a long exile from a mother country and many overseas Chinese being naturalised citizens in their host countries, the overseas Chinese identity has not disappeared, their deep cultural attachment nonetheless persists for generations (The Economist 1992), and this will be likely to continue for years ahead. For them, the great tourism attractiveness is China itself. The main purposes of these tourists visiting China are VFR or seeking family roots and leisure. Though recent years have seen a decline in the number of tourists from this category, they are still a unique component of international tourism in China.

**Table 5 - 14 Compatriot and overseas populations, 1990**

| Countries/regions | No. of ethnic Chinese (in millions) | | |
|---|---|---|---|
| Indonesia | 7.2 | | |
| Thailand | 5.8 | | |
| Malaysia | 5.2 | | |
| Singapore | 2.0 | | |
| Burma | 1.5 | | |
| Philippines | 0.8 | | |
| Vietnam | 0.8 | | |
| **Southeast Asia Total** | | **23.3** | |
| USA | 1.8 | | |
| Canada | 0.6 | | |
| Latin America | 1.0 | | |
| North America Total | | 3.4 | |
| Rest of Asia and the Pacific | | 1.8 | |
| Europe | | 0.6 | |
| Africa | | 0.1 | |
| **Overseas Chinese Total** | | | **29.2** |
| Hong Kong SAR | 5.9 | | |
| Macau SAR | 0.5 | | |
| Taiwan | 20.7 | | |
| **Compatriot Chinese Total** | | | **27.1** |
| **World Total** | | | **56.3** |

Source: Kao (1993); The Economist (1992); Lew (1995: 163).

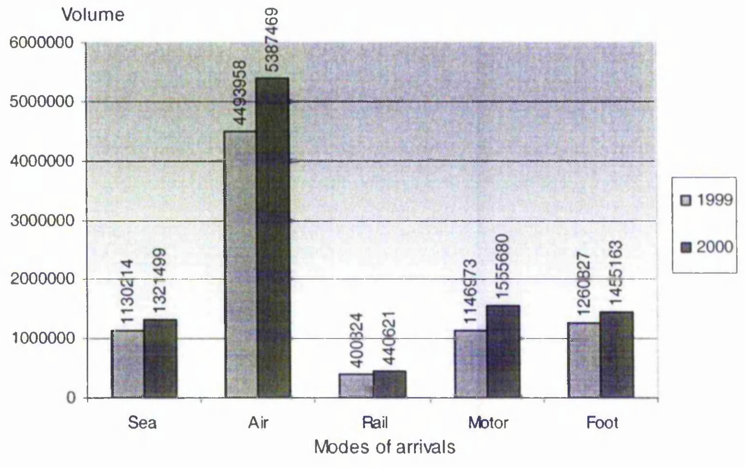
### *5.4.2 A preliminary analysis of the SDIT within China*

After clarifying the supply and demand side of the international tourism market, this discussion now moves on to examine the SDIT in China. From a cross-cultural perspective, this analysis will follow a continuum of the movement of international tourists, starting from their arrival and entry, to their dispersion in China and finally ending with their departure and return to their country of origin. The data used are mostly official tourism statistics in China.

### 5.4.2.1 Transport on arrival

Most inbound tourists come by air regardless of their origins. In 2000, more than 50 percent of the tourists used this means; this was followed by foot arrivals dominantly by Compatriots from Hong Kong SAR and to a lesser extent Macau SAR. Land crossing at the other entry points only accounts for a few thousands (the Economist Intelligence Unit Limited 1995). Recent years have seen a growth in air and foot arrivals, a decline in rail arrivals, and a stagnation in sea and motor arrivals (Ma and Li 1999). Figure 5-11 shows the market shares of different modes of arrival from 1999 to 2000.

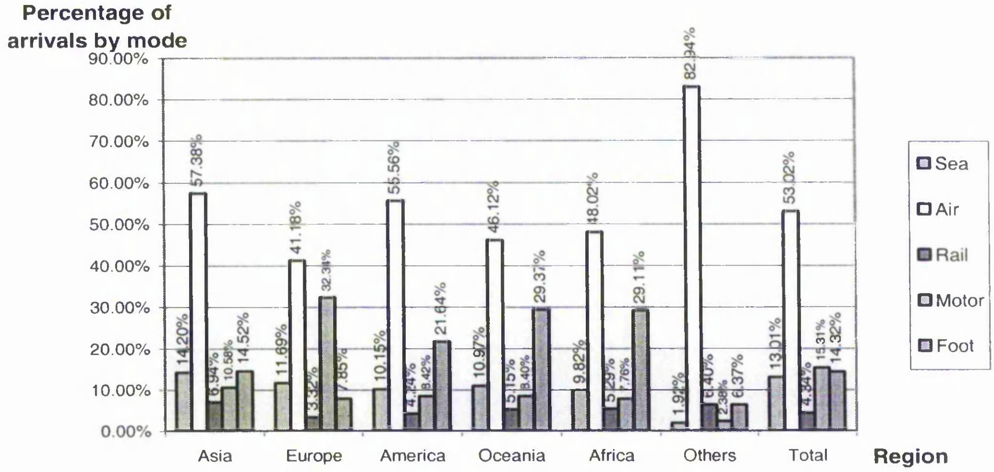
**Figure 5 - 11 Means of transport on arrival, 1999-2000**




Source: China Ministry of Public Security, CNTA (2001c).

A comparison of mode of arrivals by nationalities of foreign tourists shows that, though the choices of the tourists from different origins were basically similar, slight variations are observed (Figure 5-12). Southeast Asian tourists had the most usual preferences, which were parallel with the national average. In contrast, European, Oceaniasian and African tourists were lower in air arrivals. European tourists were also remarkably high in motor arrivals. Oceaniasian and American tourists were high in foot arrivals. It seems that there is a liable link between the choices of entries of tourists and their geographic origins. The reason of these differences might be the purposes of travel, or the geographical distances.

**Figure 5 - 12 Means of transport on arrival by origins, 1999-2000**




Data source: China Ministry of Public Security, CNTA (2001c: 40).

### 5.4.3.2 Choice of entry points

By the end of 2000, the ports of entry under Category A (first class) amounted to 242. Of these ports, 52 are airports, 130 water ports, 17 railway ports and 42 highway ports (CNTA 2003a). The entry pattern at these points is related to the means of transport on arrival. Tourist traffic by air is dominated by the country's three main airports – Beijing, Shanghai and Guangzhou. Beijing has the biggest airport in China, transferring about 21 million passengers each year (CAAC 2003). Shanghai and Guangzhou are the other two gateway cities with important airport facilities. Most of the international tourists who arrived at the three main airports are those from Japan and inter-regional countries. Arriving by foot, Compatriots are more likely to use the entry ports at the Southern border, such as Guangzhou and places within Guangdong province. Land crossing at the other entry ports by foreign tourists from other origins accounts for a small proportion. Table 5-15 shows first class entry points of all types in China.

**Table 5 - 15 Main entry ports to China**

| Types | Location |
|---|---|
| Airports | Beijing, Chengdu, Dalian, Guangzhou, Hangzhou, Harbin, Hohhot, Kunming, Qingdao, Shanghai, Tainjin, Urumqi, Xiamen, Xi'an (including Hong Kong SAR) |
| Ports on the Land | Erenhot, Manzhouli, Ji'an Hunchun, Tumen, Xunke, Mohe, Suifenhe, Youyiguan, Pingxiang, Wanding, Ruili, Yadong, Zham (Nyanang), Baketu, Alataw, Kunjirap |
| Harbour | Tianjin, Qinhuangdao, Dalian, Dandong, Shanghai, Lianyungang, Zhenjiang, Nanjing, Yangzhou, Ningbo, Jiujiang, Weihai, Qingdao, Yantai, Hankou, Guangzhou, Huangpu, Shantou, Shenzhe, Zhanjiang, Beihai, Haikou, Sanya |

Source: CNTA Tourist Map (2003b)

These trends have started and continued since 1979. Minor changes have been noticed recently. The boom of border tourism has brought more land crossing tourists from a variety of entry points. Airports in cities other than the three gateways used to receive travellers from the gateway cities, but with the development of civil aviation, since 1990s, more and more regional cities have extended their own international air links with foreign countries directly. Examples of this include the Southeast Asian countries to Yunnan and Haikou, and Japan and South Korea to Tianjin, Dalian and Shenyang. The entry pattern at different points is largely associated with the traffic connections between originating countries and their destinations in China. Tourists using these small airports are mainly short-haul foreign tourists from Southeast Asian countries. Table 5-16 shows the top ten airports and their air traffic in China during 1992-1993.

**Table 5 - 16 Passenger traffic at China's top 20 major airports, 1998-1999**

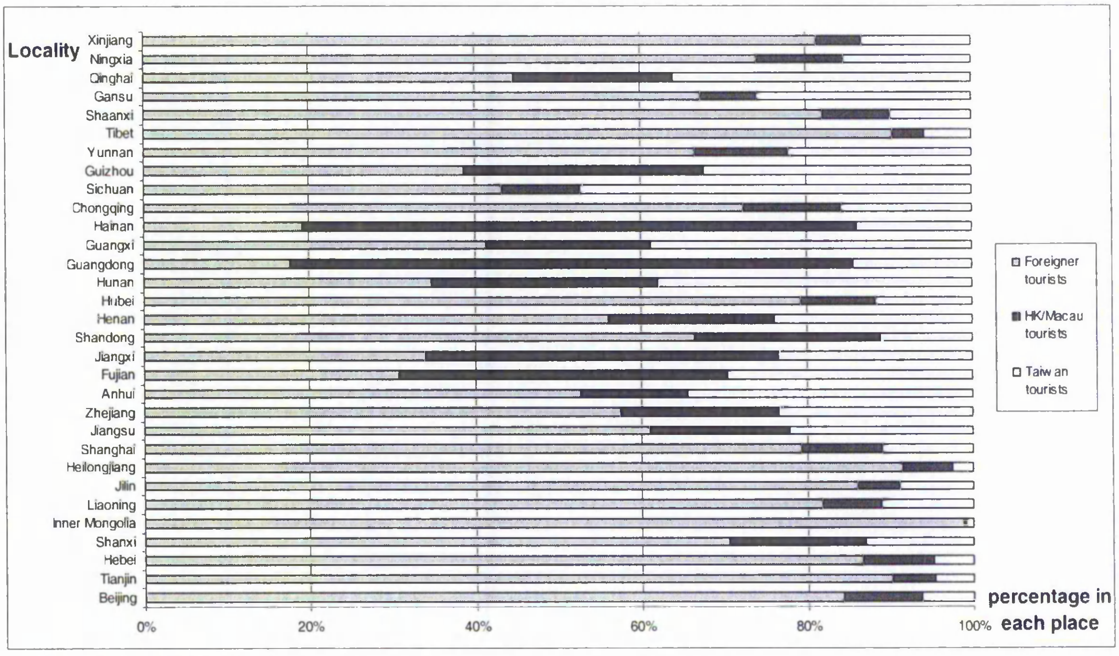
| Airport | Rank | 1998 | Rank | 1999 | % change 1998/1999 |
|---|---|---|---|---|---|
| Beijing (Capital) | 1 | 17,318,821 | 1 | 18,190,424 | 5.03 |
| Shanghai | 2 | 13,707,093 | 2 | 14,349,100 | 4.68 |
| Guangzhou | 3 | 12,412,400 | 3 | 11,899,348 | -4.13 |
| Shenzhen | 4 | 5,150,356 | 5 | 5,246,279 | 1.86 |
| Kunming | 5 | 4,924,650 | 4 | 7,626,209 | 54.86 |
| Chengdu | 6 | 4,389,987 | 6 | 4,985,883 | 13.57 |
| Xiamen | 7 | 3,495,569 | 8 | 3,380,023 | -3.31 |
| Haikou | 8 | 3,292,690 | 7 | 3,565,107 | 8.27 |
| Xi'an (Xianyang) | 9 | 2,860,351 | 9 | 3,112,812 | 8.83 |
| Chongqing | 10 | 2,352,535 | 10 | 2,453,466 | 4.29 |
| Hangzhou | 11 | 2,275,750 | 13 | 2,191,418 | -3.71 |
| Fuzhou | 12 | 2,137,816 | 17 | 2,014,476 | -5.77 |
| Dalian | 13 | 2,116,693 | 11 | 2,362,234 | 11.60 |
| Nanjing | 14 | 2,108,030 | 14 | 2,167,103 | 2.80 |
| Shenyang | 15 | 2,046,207 | 12 | 2,216,249 | 8.31 |
| Wuhan (Tianhe) | 16 | 1,981,731 | 19 | 1,608,319 | -18.84 |
| Qingdao | 17 | 1,846,603 | 16 | 2,014,476 | 9.09 |
| Guilin | 18 | 1,810,096 | 15 | 2,058,469 | 13.72 |
| Wenzhou | 19 | 1,778,786 | 20 | 1,598,757 | -10.12 |
| Changsha | 20 | 1,778,786 | 18 | 1,776,424 | -0.13 |
| Total | | 113,710,613 | | 120,016,525 | 5.55 |

Source: CAAC (2003) Civil Aviation Administration of China. www.caac.gov.cn/tjxx/

### 5.4.3.3 The SDIT in Beijing, Shanghai and Guangzhou

The distribution of international tourist in China, like in any big country, is complicated. With 31 provinces and regions, numerous cities and attractions, international tourism in one single province in China could be more complicated than in a famous tourism country, such as Singapore, or Hawaii. Every year, especially in recent years, more and more regions opened internationally. Inbound tourists are now received by all of China's 31 provinces, autonomous regions and municipalities. In 2000, there were 21 provinces, autonomous regions and municipalities receiving more than 300 thousand visitors. Guangdong province ranked the first nationwide with 11.9894 million overseas visitors received (CNTA 2001a, 2001c). Figure 5-13 is the breakdown of the international arrivals and average stays by locality in 2000.

**Figure 5 - 13 Breakdown of international tourist arrivals by locality, 2000**




Date source: CNTA (2001c).

Among them, the most important destinations are the three Chinese metropolises – Beijing, Shanghai and Guangzhou. In 2000, a total of 83,443,881 inbound tourists visited China (CNTA 2001c). Among them, 12 percent were foreigners (including a small portion of overseas Chinese, but their actual figure is unknown). The rest were all Compatriots in which 96 percent were tourists from Hong Kong and Macau SARs and 4 percent were from Taiwan. Figure 5-14a shows that among them, foreign tourists were most likely to visit Beijing and Shanghai. Their proportions reached 84 percent and 79 percent respectively in these two cities, much higher than the 12 percent national average. In contrast, foreign arrivals in Guangzhou were just slightly higher than the national average (26%), indicating that though Guangzhou is an important destination, it is less appealing to foreigners than Beijing and Shanghai are.

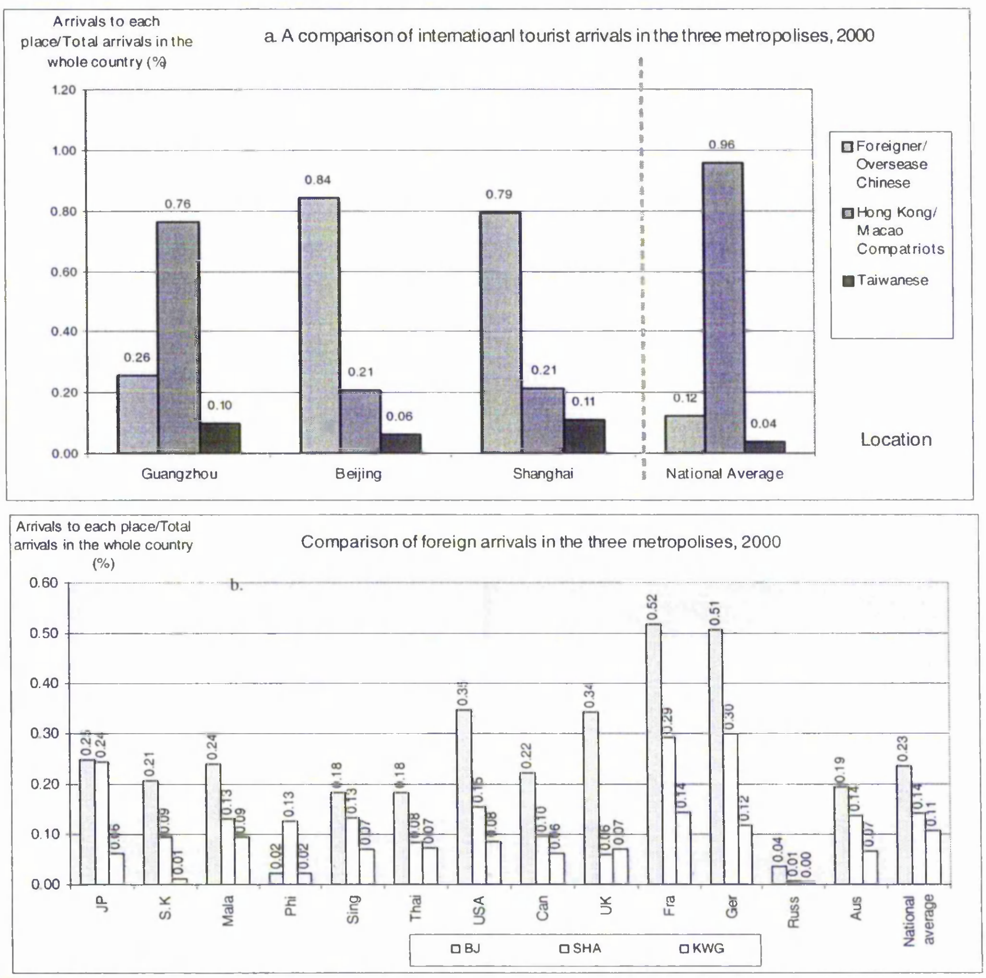
Compatriots from Hong Kong and Macau SARs showed another extreme. Considering their 96 percent market share in the whole country, only 21 percent visited Beijing and Shanghai, suggesting that they preferred Guangzhou to Beijing and Shanghai. However, Compatriots from Taiwan demonstrated a different distribution. Their shares ranged from 6 to 11 percent in these three cities *vis-à-vis* 4 percent in the whole country indicating a relatively even distribution. Though they are all ethnic Chinese, Taiwanese tourists seem to express different preference with those from Hong Kong and Macau SARs).

Further breakdown of foreign tourists in the three cities reveals another pattern of the SDIT. In 2000, about 23 percent of the total foreign arrivals visited Beijing, 14 percent visited Shanghai and 11 percent visited Guangzhou. However, individual countries varied considerably (Figure 5-14b). Tourists from inter-regional countries (Russia excluded) had exceptionally high shares in both Beijing and Shanghai, especially those from France and Germany. However, except for the Canadian tourists who had slightly higher than the national average arrivals, inter-regional foreign tourists formed much lower shares of visitors in Guangzhou. British tourists had relatively moderate arrivals in Shanghai. Russian tourists are extraordinary in that they had very low shares in all of the three cities.

On the other hand, tourists from intra-regional countries have a different distribution. Japanese tourists seemed to frequent Shanghai more than Beijing, and formed a very low share of visitors to Guangzhou. South Korean tourists favoured Beijing more, then

Shanghai, and have an extremely low share to Guangzhou. For Philippines tourists, Shanghai seemed to be the only attractive destination, as they have unusually low shares to both Beijing and Guangzhou. Guangzhou seems to be unappealing to Japanese, South Korean and Philippine tourists. But Guangzhou, together with Beijing and Shanghai, are very attractive destinations to the other intra-regional tourists.

**Figure 5 - 14 A comparison of international tourist arrivals in the three metropolises, 2000**




**Abbreviations of places of origin**

JP: Japan
SK: South Korea
MAL: Malaysia
PHI: the Philippines
SING: Singapore
THAI: Thailand
USA
CAN: Canada
UK: the UK
FRA: France
GER: Germany
AUS: Australia
RUS: Russia
For/Over: Foreigner and overseas Chinese
HK/MC: Hong Kong and Macau SARs
TW: Taiwan
Data Source: CNTA. (2001c)

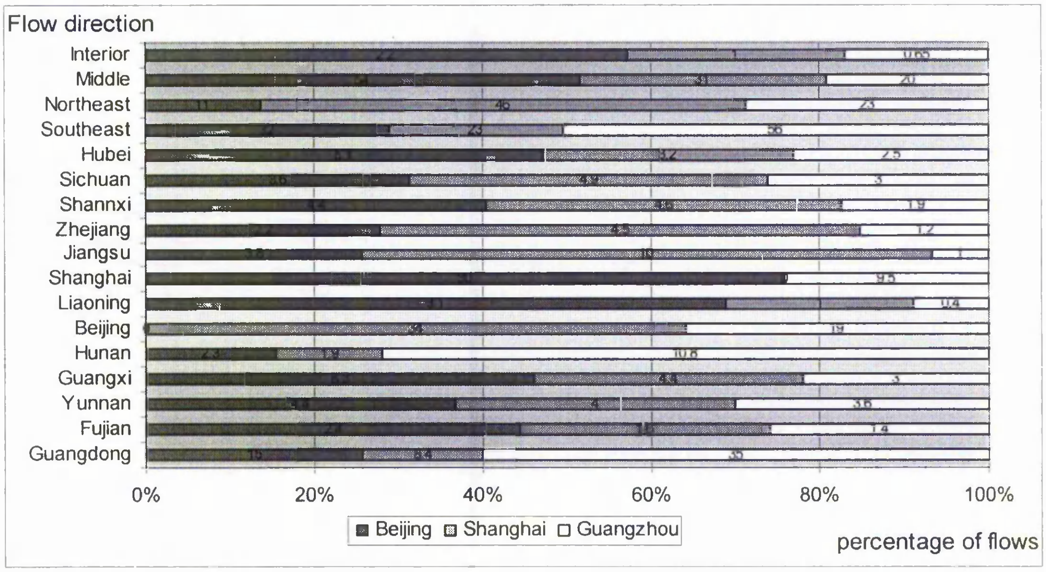
In general, though Beijing appeals to all types of foreign tourists, it is more attractive to inter-regional tourists than to intra-regional tourists. Next is Shanghai with a quite similar pattern of tourist arrivals to Beijing. Guangzhou has a rather restrained appeal to all of them. The main reason for this variation might be that the locational factors of the three places, such as their attractiveness and geographical distance, are different, therefore, they appeal to different types of tourists.

#### 5.4.3.4 The SDIT after Beijing, Shanghai and Guangzhou

Based on the annual survey conducted by CNTA on the spatial behaviours of international tourists in China, more than half of inbound tourists travel to other places on entering the country. In 2001, of the total 29,315 survey participants, 10,142 people continued their travel within China. About 15.3 percent of them travelled within the provinces or regions of their entries; 31.6 percent went to the two gateway cities - Beijing or Shanghai; and 5 percent went to the places where tourism development is advanced, such as Guangdong, Sichuan, Yunnan and Shaanxi (CNTA and CNSB 2001: 8). A trend has been noticed that tourist distribution after entry is increasingly scattered year after year. The destination choices of international tourists have extended from a few coastal regions gradually toward the Middle and Interior regions. This is a result of the fast development of tourism resources and facilities in these less developed regions.

Based on the same survey, more flow patterns can be recognised. Though the SDIT after entry has reached all over the country, the flow directions from different gateways were varied. In this survey, 20 percent of the tourists entered from Beijing, 13 percent from Shanghai and 14 percent from Guangdong province (the figure of the province is used instead of its capital - Guangzhou city, because of the lack of statistics). Figure 5-15 shows that international tourists entered at Beijing first, went to the Middle east region; then to the Southeast region. While tourists entered at Shanghai preferred to go to the Northeast region first; then stay in its nearby provinces. Tourists entered at Guangdong tended to stay in the same region; next, travel on to Beijing and the Northeast region; Shanghai and its nearby areas were the least visited places for them.

**Figure 5 - 15 Tourist flows after the three metropolises, 2000**




Date source: CNTA and CNSB (2001).

In summary, the SDIT is principally between the three major tourism regions – the Northeast, the Southeast and the Middle east regions. Particularly, it can be seen that tourist traffic is actually mainly between the three gateways. If tourists entered at one gateway, one of the other two would possibly be their second destination.

The difference in flow directions was also evident in the second tier tourism regions. In this tier, Yunnan and Shaanxi were two popular destinations for all types of tourists entering at different ports. Xi'an is the Capital of Shaanxi. The world famous 'Silk Road' starts from Xi'an. It is also famous for Terra Cotta Warriors and the Ancient Capital of Tang Dynasty. In 2000, more than 80 percent of international arrivals were foreign tourists in Shaanxi province, compared with only 47 percent of foreign tourists in the whole country. This indicates that Shaanxi has a strong appeal to foreign tourists (CNTA 2001c).

Yunnan is famous for its rich minority background and borders many countries. Its local traffic centre is Kunming. Tourists could fly directly to this city from many cities in the world, especially those from Hong Kong and Macau SARs, and Southeast Asian countries. Foreign tourists from other parts of the world are also attracted to this region, either by its tourism resources, or using it as a peripheral centre for further trips. In this province, the largest share of foreign arrivals are from Thailand. This number may even increase with the extension of the Burma Road from Kunming to Southeast Asia.

In general, tourists from Beijing tended to visit Guangxi, Hubei, Shaanxi and Yunnan. Together they brought in about 25 percent of the total arrivals from Beijing. Tourists from Shanghai were apt to visit Sichuan, Zhejiang, Shaanxi, Shanxi, Guangxi and Yunnan. They drew about 27 percent of the total tourist arrivals from Shanghai. For tourists from Guangdong, Hunan and Yunnan were attractive destinations. The spread of tourists who entered from Guangzhou was narrower than of those from other gateways.

The SDIT to the Interior region was very limited. The shares of tourist arrivals in this region ranged from merely 0.65 to 2.2 percent. However, slight differences have been noticed; tourists who entered from Beijing and Shanghai were more enthusiastic about visiting the Interior regions, such as Tibet and Xinjiang than those entered from Guangdong. This might be easily understood given that tourists embarked at Beijing and Shanghai were mostly foreign tourists, and those entered from Guangdong were mainly Compatriots and they were not keen on travelling in the whole country. The amount of foreign tourists to many Chinese provinces with famous attractions, such as Yunnan and Tibet corresponds to their greater interest in seeing more of the cultural and historical landscape of China, rather than other purposes. It suggests that the entry points of international tourists have been differentiated by their origins. It might be inevitable that their further dispersions are also shaped by their national backgrounds.

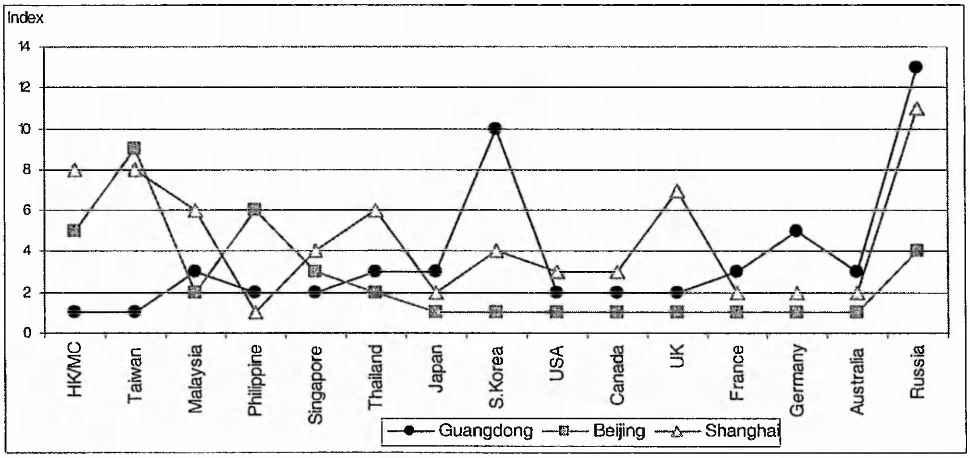
#### 5.4.3.5 Cross-national comparison of the SDIT within China

Concentrating cross-national differences in international tourists, this part further explores the SDIT in the whole country. In order to easily identify the patterns of the SDIT, a 'sequence-index' of destinations is formed. Using the Sequence-index calculated above, the pattern of the SDIT between these destinations is readily identifiable. It is derived from the rankings of the number of international tourists from different origins arriving in each of these destinations. One important reason for using this index to characterise the likelihood of the visitations of international tourists is that the index can express the preference of tourists. This is because it is a ranking system, not a simple numeral indication of tourist arrivals. Its entries in each cell in a cross-tabulation table of origins and destinations is free from interactions. This means that each cell represents one preference of tourists to a place, but does not implicate the number of tourists who might also visit other places. The use of frequency or percentage methods can not avoid this overlapping effect. Moreover, the index is easy to manipulate and interpret, especially in the situation that both row and column categories are very complicated and the magnitude of each cell could vary significantly and add difficulties in illustration.

For tourists from every origin, a string of rankings of all the destinations can be obtained. The lower the index, the higher the ranking and the more likely that the tourists from a specific origin prefer to travel to that destination. In China, there are 31 provinces, autonomous regions and municipalities receiving international tourists, and 15 major groups of international tourists (other insignificant origin countries are not considered here); so each destination has 15 indices and each index ranges from 1 to 31.

Figure 5-16 shows the 'sequence indices' of Beijing, Shanghai and Guangzhou using the statistics of international tourism in 2000 (CNTA 2001c). The results are consistent with the analysis above. Most of the indices range from 1 to 10 indicating that these three places were the primary destinations of international tourists. All three places have been preferred as the first choices by tourists from different regions. Beijing held 8 groups of them; Guangzhou and Shanghai owned 2 and 1 respectively. The range between the smallest and the largest index of Beijing is 8, Shanghai is 9 and Guangzhou is 12, indicating that tourists who favoured Beijing were more alike in their destination choices than those who favoured the other two places. Beijing's significant position was expressed in the inter-regional tourists and foreign tourists from Japan and S. Korea. The index ranges of all the three cities are primarily due to the effects of the erratic Russian tourists.

**Figure 5 - 16 Sequence indices of inbound tourists in the three metropolises, 2000**




Data source: CNTA (2001c).

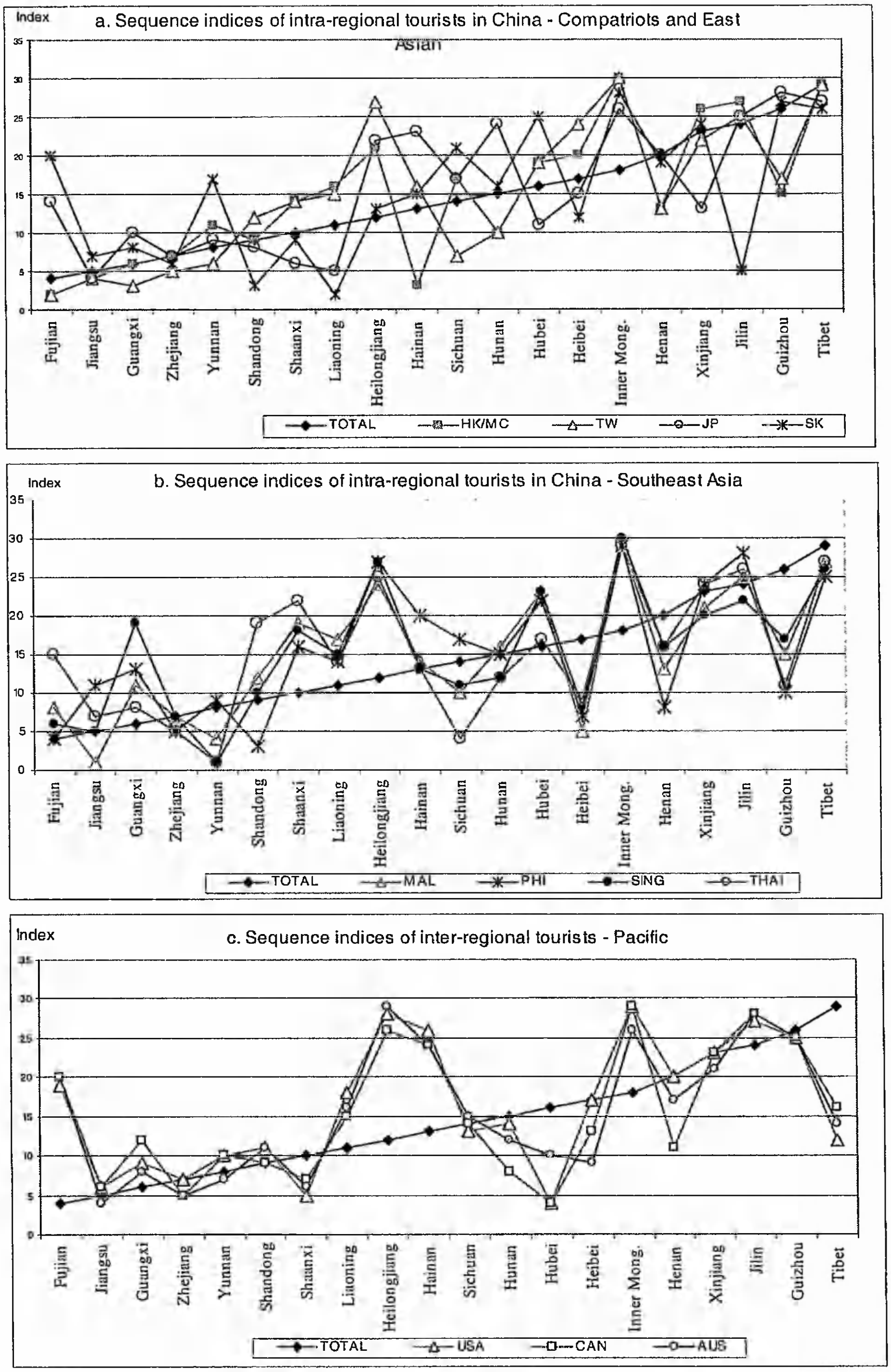
Figure 5-17 a-d depict the sequence indices of international tourists in China's 21 major destinations as compared to the indices of total national arrivals in these places. Figure 5-17 a and b are concerned with intra-regional tourists; Figure 5-17 c and d are concerned with inter-regional tourists. The almost upward straight line is the sequence indices of the total arrivals in each region. These figures show different patterns of the SDIT. First, the lines in these figures display basically similar shapes. This means that in general the two types of foreign tourists had many common destinations. Yet, if South Korean and Russian tourists were excluded, comparing Figure 5-17 a and b, to Figure 5-17 c and d are presented more narrowly. This indicates that tourists across Europe, North America and Australasia shared almost identical preferences despite being from different continents, but the intra-regional tourists demonstrated a wider within-group variation of destination choices even though they are from same the geographical regions.

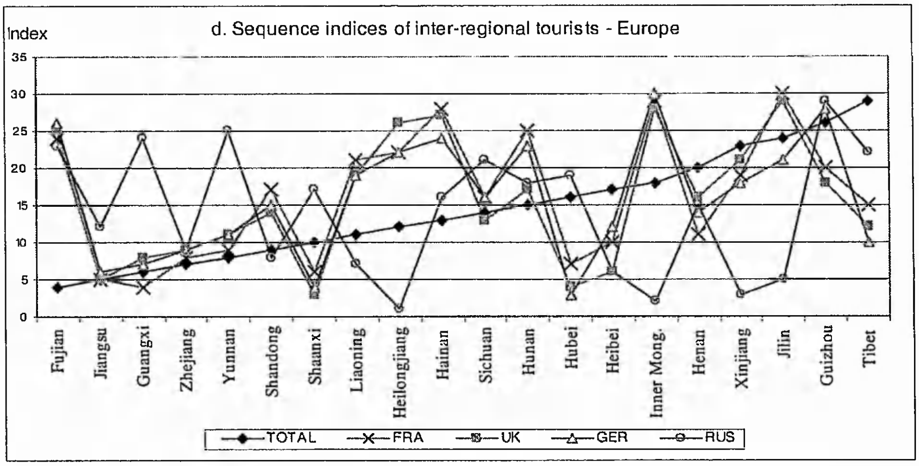
These two groups of tourists were similar in two of the world famous sightseeing places - Zhejiang and Jiangsu. Also they all frequented Jilin, Guizhou and Inner Mongolia less. The difference rests on Shaanxi, Yunnan, Hubei, Tibet and Xinjiang. For inter-regional tourists, these are common popular destinations. But for intra-regional tourists, they have either higher indices, or wider index ranges in these places. For example, although most of the tourists favoured Shaanxi, the indices range of intra-regional tourists is 16; inter-regional tourists have an indices range of 4 (Russian excluded). This difference might correspond to the greater interests of inter-regional tourists to see more of the cultural and historical landscape of China, and the more diversified purposes of intra-regional tourists in China.

Russian tourists were unusual again in two aspects. First, their most frequented destinations were those that were less frequented by others, normally close to the Sino-Russian border, such as Heilongjiang, Inner Mongolia and Xinjiang. This might be understood that their travel is greatly influenced by the border or distance effect. Most of the tourists are day-trippers and trade traffickers or VFR rather than sightseeing (Gormsen 1988; Yu 1992). However, the more unusual point is that, unlike other border tourists, they do not favour the three metropolises.

Though the overall variation of Figure 5-17d is predominantly owing to Russian tourists, the wider variation of intra-regional tourists in Figure 5-17 a and b was not caused by one group of tourists. They were alike in some unpopular places, such as Inner Mongolia and Tibet, but all of them had their own particularly favoured places. This caused their indices to depart from the general trend. South Korean tourists were unusual in that they had been the leading arrivals in Tianjin, Shandong, Shanxi and Zhejiang in the Middle east region; Liaoning, Heilongjiang, Jilin in the Northeast; and the least arrival in Fujian, Yunnan, Hainan and Guizhou in the Southeast indicating that the border effect affected these tourists as well. However, compared with Russian tourists, the border effect seems less influential to South Korean tourists. Because, except for Guangzhou, they were also attracted to Beijing and Shanghai, and some common second tier destinations, such as Jiangsu and Shaanxi.

**Figure 5 - 17 Sequence indices of 15 major groups of international tourists in China's main tourist destinations, 2000**






Note: High index represents low tourist arrivals and vice versa.
Date source: CNTA (2001c)

The distribution of Japanese tourists was fairly even across the whole country. Their preferences were similar to those of inter-regional tourists, except that they liked to visit Liaoning, which is geographically adjacent to Japan, and Xinjiang; but frequented Tibet less. Compatriots did not place identical preferences even though they are all the closely related ethnic Chinese. They differed mainly in the destinations in the Middle and Northern regions, such as Heilongjiang, Shandong, Hunan, Hubei and Sichuan; but were similar in the Interior regions, which they all frequented less, and the Southeast regions which they all liked to visit. In the South, Fujian was favoured by all types of ethnic Chinese, but the Compatriots from Hong Kong and Macau SARs preferred Hainan more – the adjoining island to Hong Kong SAR, and Taiwanese tourists preferred Yunnan more. Southeast Asian tourists were on the whole similar to each other; but they were more identical in the North and Interior regions, but more varied in the South and Middle regions. Thai and Singaporean tourists chose to visit Yunnan first; Malaysian tourists' primary destination was Jiangsu, and the Philippine tourists were keen to visit Shandong.

#### 5.4.3.6 A perceptual map of origins of tourists versus destinations

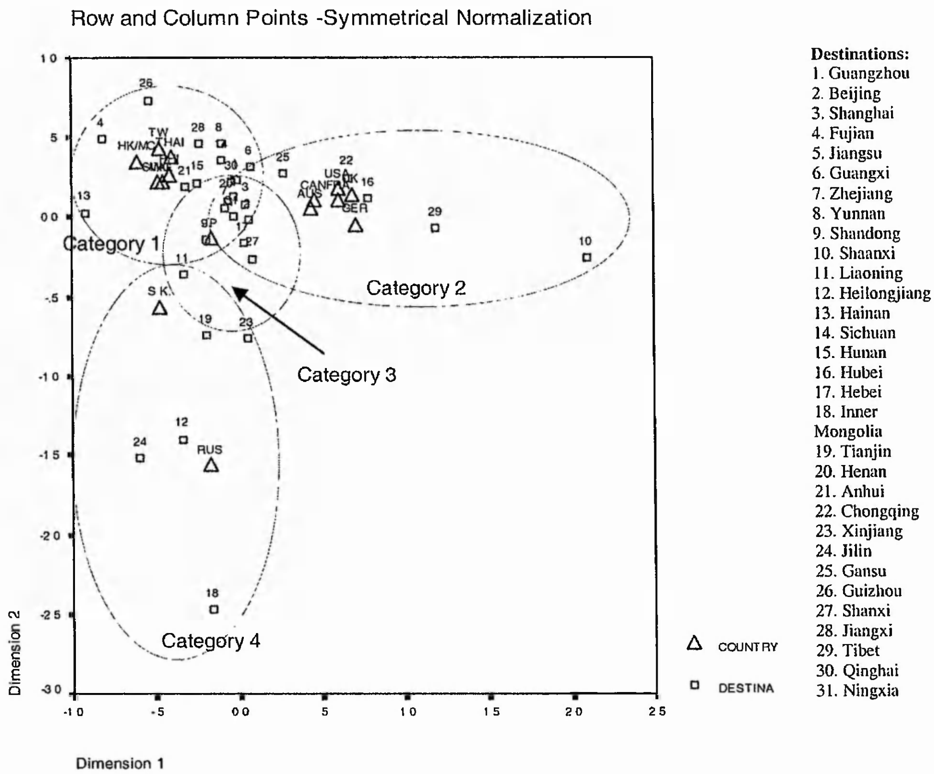
Using the sequence index, in support to the above analysis, a correspondence analysis was performed. The advantage of correspondence analysis is that it can examine the relationship between two categorical variables, identify and categorise homogeneous groups among them, and depict their relationship on a multidimensional space.

Figure 5-18 (also refer to Appendix Two) shows the result of this analysis. The column variable is 'place of origin' and the row variable is 'destination' symbolised by COUNTRY and DESTINA. It is clear that the groups of origins are associated with the groups of destinations by their proximities on the map. Four related origins and destinations are categorised into four areas with explicable characteristics. The first category contains most of the intra-regional countries and regions which are assumed to share a strong Chinese background. They are tourists from Hong Kong and Macau SARs, Taiwan, Malaysia, the Philippines, Singapore and Thailand. Close to this group are the Southern China destinations - Fujian, Guizhou and Hainan on the left, and the three metropolises - Beijing, Shanghai and Guangdong on the right; next are some of the second tier destinations - Jiangsu, Zhejiang, Yunnan, Sichuan and Guangxi; and the least visited destinations - Jiangxi, Anhui, Ningxia and Qinghai.

All inter-regional tourists are precisely classified into category two. The destinations close to this group are Gansu, Hubei, and Chongqing and, slightly further, Tibet and Shaanxi which are distinguished for appealing to inter-regional tourists. The third category contains Japanese tourists whom lie between category 1 and 2, and are surrounded by Shandong, Liaoning, Hebei and Shanxi. Although Japanese tourists share many of the destinations with both intra-regional and inter-regional tourists, they are separated as a group displayed by their location on the map.

The final group includes South Korean and Russian tourists. They are not close to each other, but are all far from the other tourist groups. This category is surrounded by the less important destinations in the Middle and Northern regions. They are Hebei, Tianjin, Shandong, Liaoning and Xinjiang, which are close to South Korea, and Jilin, Heilongjiang and Inner Mongolia which are close to Russia. Though they are the less popular destinations, they appeal to these two groups of tourists respectively.

**Figure 5 - 18 The perceptual map of the SDIT in China from a correspondence analysis, 2000**




**Abbreviations of places of origin**

| | | |
|---|---|---|
| JP: Japan | SK: South Korea | MAL: Malaysia |
| PHI: the Philippines | SING: Singapore | THAI: Thailand |
| USA | CAN: Canada | UK: the UK |
| FRA: France | GER: Germany | AUS: Australia |
| RUS: Russia | For/Over: Foreigner and overseas Chinese | |
| HK/MC: Hong Kong and Macau SARs | TW: Taiwan | |

Date source: CNTA (2001c)

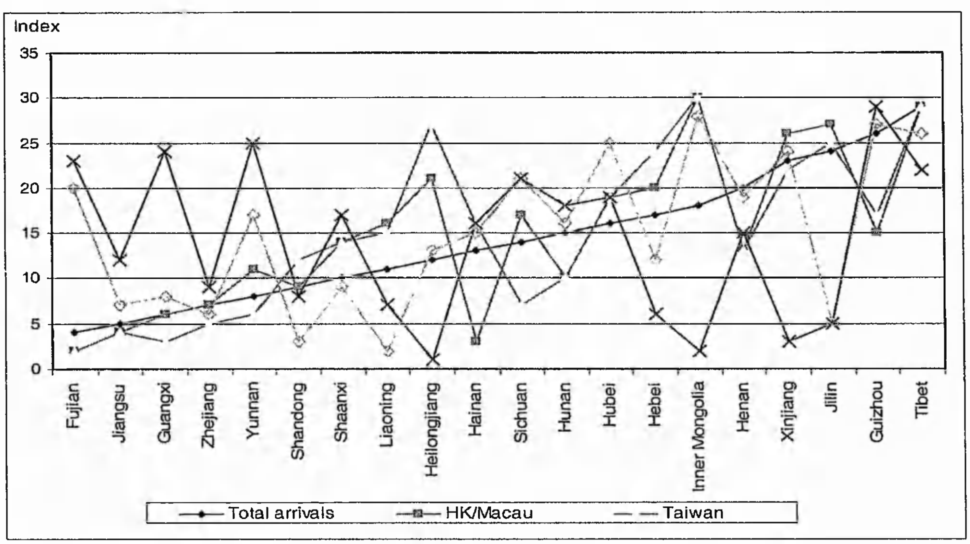
As expected, this correspondence analysis effectively verified the understanding of the patterns and regularities of the SDIT within China; and implies the possible presence of a relationship between nationality and tourists' preferences for certain destinations.

### 5.4.3.7 The SDIT in the border regions

China has a 22,800km border line and borders 15 countries and regions. The boundary regions are Guangdong (with Hong Kong and Macau SARs), Guangxi, Yunnan, Tibet, Xinjiang, Gansu, Inner Mongolia, Heilongjiang, Jilin and Liaoning. Also, Fujian is across the Taiwan Strait, Shandong, Liaoning and Jilin are coastal borders close to South Korea and Japan. Travel and trade along these borders is flourishing. The close cultural and geographic links shape the uniqueness of the border tourism in China.

Using the sequence index (see Figure 5-19), border tourism showed a consistent flow feature with the analyses above. Except for Tibet and Gansu, most of the border provinces had their top arrivals from the neighbouring countries/regions. Heilongjiang, Inner Mongolia and Xinjiang drew Russian tourists; Jilin drew South Korean and Russian tourists; Liaoning drew Japanese and South Korean tourists; Shandong and Yunnan attracted Malaysian, Singaporean and Thai tourists; Fujian and Guangdong attracted Compatriots and Guangxi attracted more Taiwanese tourists. From border tourism, we see another sign of the strong links between geographic distance and cultural difference between origins and destinations and the pattern of the SDIT. But these effects are more easily observed in inter-regional tourists than in intra-regional tourists.

**Figure 5 - 19 Border tourism and sequence indices, 2000**




Note: High index represents low tourist arrivals and vice versa.
Date source: CNTA (2001c)

#### 5.4.3.8 The SDIT after leaving the country

Though there are not enough official statistics revealing the characteristics of the SDIT from this angle, it is understood that the majority of international tourists, especially those from nearby countries/regions, return to their country of origins after travelling in China. According to surveys conducted by CNTA and CNSB (2001: 7-8), most of the inbound tourists in China are single destination travellers. In 2000, about 71.8 percent of them returned to their origins. The figure was higher for tourists from borders and nearby countries (such as Japan, North Korea, Russia and Mongolia), reaching about 85 percent. Tourists from Europe, America and Oceaniasian were more likely to continue their journey than those from Hong Kong and Macau SARs, Taiwan and Southeast Asia. In 2000, about 60 percent of Compatriots and Southeast Asian tourists and about 70-80 percent of the inter-regional tourists from Europe and USA returned home. But about 40-50 percent of Australian and Canadian tourists continued their journey. In multi-destination travel, Hong Kong and Macau SARs are treated as different destinations from Mainland China (CNTA 2001b). In 2000, about 23 percent of tourists who continued their journey actually went to Hong Kong and Macau SARs. However, this figure was 17 percent higher in 1999, indicating that the dispersion of the SDIT at the departing ports is becoming broader.

## 5.5 SUMMARY AND CONCLUSIONS

This chapter has completed two major tasks. The first is to introduce the background issues of the tourism industry in China. As previously identified, one major gap in the study of the SDIT is the limited choice of study country in terms of both diversified tourism resources and tourist arrivals. Therefore, it is important to emphasis that the issues identified in this chapter have clarified one chief advantage of this research, which is the selection of the target country, which has extensive data availability in both of these two aspects, and offers one of the best laboratories for conducting cross-cultural spatial research.

After that, the second part of this chapter launched into a preliminary examination of the SDIT within China using secondary statistics. The aim is to briefly understand the main characteristics of international tourists travelling in China, rectify the research proposal, and raise practical research questions.

In summary, the analysis in this chapter identified that in general tourists from different regions have presented themselves as contrasts in many regards. A 'distance decay effect' is observed, i.e. as the distance increases inside the country, the amount of tourists declines. Pertaining to this effect is the hierarchical central-peripheral structure of tourist flows. However, distance seems to have no dominating effect on all groups of tourists and its effect is more pronounced among the border and intra-regional tourists, whose travel patterns are more influenced by their ethnic or cultural links with China, but are less obvious amongst inter-regional tourists. This implies that the cultural element might be operating together with the distance factor. In order to rectify this conjecture, a correspondence analysis was carried out using the sequence indices of international tourists and destinations. Expected outcomes were obtained attesting that cultural or national and geographical characteristics are underlying dimensions of the groupings of the tourists and the destinations, and that they are associated with each other.

However, the effect of culture is also complicated. This can be seen from the broad in-group variations and out-group similarities. First, cultural affinity does not necessarily grant the tourists identical behaviours, such as Compatriots from Taiwan and Hong Kong and Macau SARs. It seems to defer tourists from travelling further inside the country as they are nearer to Chinese culture. Their inclination to travel inside China follows a declining succession from inter-regional tourists, Japanese tourists, Southeast Asian tourists, Compatriots, to Russian and South Korean tourists, though the succession of their cultural or ethic affinity to China is considered to be in a reverse order (Russian and South Korean tourists excluded). Furthermore, Japanese tourists are more similar to inter-regional tourists than to their Asian counterparts in some destinations, despite their assumed cultural dissimilarities to the former and their geographic and cultural affinity to the later.

Also, factors other than culture and geography might be present. This is shown in the way that the different types of inter-regional tourists are more alike in their destination preferences than intra-regional tourists are. Is this because that the former is culturally closer than the latter? This might not be completely true. Because a hidden influencing factor is that inter-regional tourists come from regions further away than intra-regional tourists do. Therefore the former might be more constrained by resource factors than the later, such as time and money, to diversify their destination choices.

From this, it is recognised that this comparative analysis of the SDIT within China is very insightful; however, it is unable to prove whether any of the patterns identified are due to chance or are real. This research is worthwhile because it uses empirical methods to identified and examine the complicated cross-cultural differences in the SDIT based on the examination conducted in this chapter. The next methodology and data analysis chapters will build up the research design. More constructive empirical research will be carried out in Chapter 7 and 8 to explain the relationship identified here between the SDIT and the exogenous attributes, and applying comprehensive theories to explain the locational phenomena, the distance element, the cultural/national background of the tourists, etc.

# 6 METHODOLOGY AND METHOD

## 6.1 INTRODUCTION

The preceding part of this thesis has justified step by step the conceptual and theoretical framework of this research. But it is also important that a researcher considers and explains the methodological and philosophical stances of a research, and links these to broader paradigmatic aspects including ontology, methodology and epistemology of knowledge development. This defines the common language (meta-language) on which a research builds up and determines if the research is a scientific piece of work and enables it to contribute to the base of knowledge in relevant subjects. This chapter therefore covers several elements related to the three paradigmatic underpinnings and will answer questions like why a research method is chosen; why it is suitable and how it will be justified and developed within this research?

As introduced in Chapter 1, a research process is a continuum from the identification of a social and theoretical problem to the resolution of the problem. However most of the time, researchers do not really find an exact solution for a problem but make contributions toward the resolution of the problem. This is the ultimate aim of this research; to identify social and theoretical problems and contribute to the resolution. (refer to Section 1.3 and 1.4).

This chapter opens with a discussion of the methodological and philosophical stances of this research. The methodological issues relevant to this research come from two sources. One issues lies in the way of scientific explanation of tourism geography, and is concerned with the debate about the paradigm dichotomy between positivist and interpretivisit views. This also links to the selection of the multiple techniques used in this research – quantitative and qualitative methods. The second issue is to justify the methodology concerning the cross-cultural paradigm of social science and some concrete approaches used for the analysis. Once these two aspects have been examined, specific research techniques and strategies can be addressed, including ways of measuring and operationalising the variables and attributes involved, the instruments and procedures of the data collection and data analysis and a preliminary test of the research strategy through a pilot study.

## 6.2 THE METHODOLOGICAL ISSUES OF CROSS-CULTURAL TOURISM RESEARCH

Tourism research has witnessed a remarkable development using geographical analysis undertaken in both positivist-empiricist and interpretivisit research manners. Social researchers have been debating about qualitative and quantitative methodologies fiercely. The origin of the debate lies in the broader issues of epistemology. It simply concerns the philosophy people taken in seeing the world. The choice of a particular epistemological base leads to a preference for a particular method on the grounds of its greater appropriateness (Bryman 1984).

In particular the discussion of methodological issues in this chapter relates to the following aspects of this research:

- the justification of the contribution to the domain of knowledge
- the paradigm
- the logic sequences and structure
- the justification of the data collection and analytical tools
- the advantage and disadvantage of making these selections

Many researchers have discussed methodology, but its exact meaning has been subject to various interpretations. Machlup (1978) summarised from official dictionaries that 'methodology' has two main meanings. It is; 1a. a body of methods, procedures, working concepts, rules, and postulates employed by a science, art, or discipline…; b. the processes, techniques or approaches employed in the solution of a problem or in doing something: a particular procedure or set of procedures…; c. the theoretical foundations of a philosophical doctrine: the basic premises, postulates, and concepts of a philosophy…; 2. the science or the body of methods (Machlup 1978: 10; Webster's Third New International Dictionary: 1971). He further (1978) stated that:

> *"methodology is neither a study of 'good methods' nor a study of 'method use', but rather a study of the reasons behind the principles on the basis of which various types of propositions are accepted or rejected as part of the body of ordered knowledge in general or of any special discipline" (p.55-56).*

Methodology is indispensable in scientific research because it is the science of method (Oxford English Dictionary 2003). It is concerned with a scientific goal in knowledge increment and a rational way undertaken in pursuit of the goal. It signifies a means of using abstract theories to bridge the views of social phenomena and social reality (Popper 1935: 53). The enquiry of social science can be seen as looking for the rules or theories of the game of science.

Differing with but also closely related to the concept of methodology is method, which is simply a particular procedure to attain a research object. Method can be specified by researchers based on their research purposes. It could be a model, a technique, a plan or an approach. It is a part of methodology, and a tool for transferring a methodology into an applicable way of doing things. Methodology directs the design of a research method and examines the coherence and clarity of various methods used by researchers. Corresponding to different methodologies, there are a variety of methods.

### *6.2.1 The debate of paradigm: positivism versus interpretivisit*

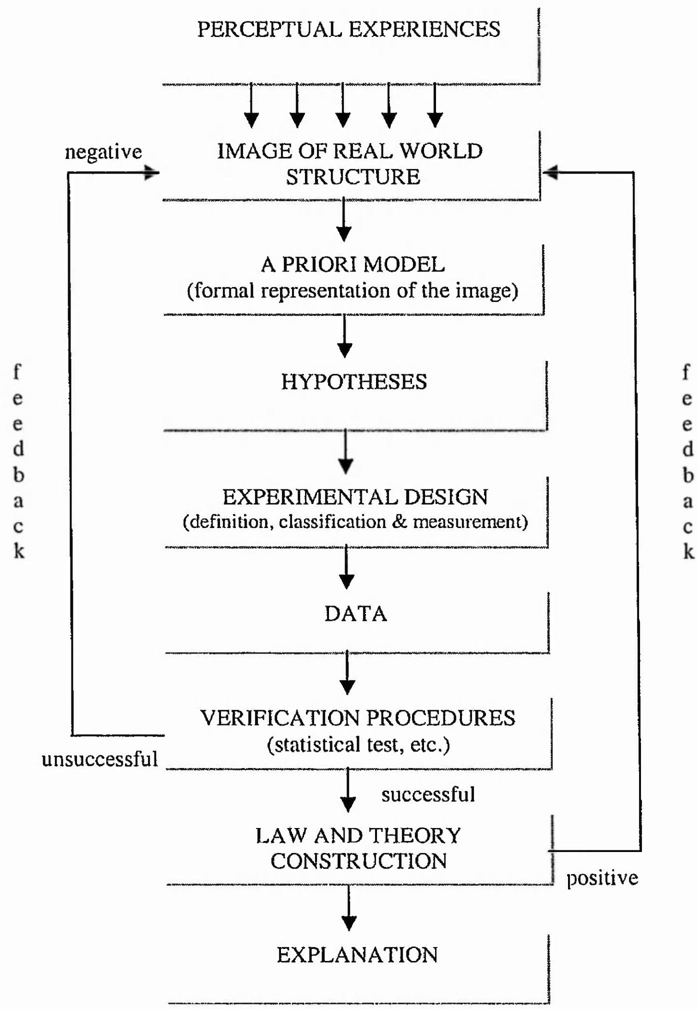
For a long time scientists have argued about which rule is scientifically correct, which can be used to judge a piece of research and how to establish the rules. This argument relates to another research issue – paradigm. A paradigm is a worldview, a general perspective and a way of breaking down the complexity of the real world. Kuhn (1962) states that paradigm is "universally recognised scientific achievements that for a time provide model problems and solutions to a community of practitioners" (p: x). A research paradigm takes account of three elements: ontology (the science of reality); epistemology (the science of knowledge of reality) and methodology (the science of knowledge increment). When a research is proposed, assessed and conducted, the three elements are operating as guidance for these activities. In a specific sense, it tells what an important, legitimate and reasonable research is. A paradigm is important because it is the framework of a methodology. Two opposite paradigms and related methodological considerations have been dominating the research sphere of social science – positivism and interpretivisit.

### 6.2.1.1 The concepts of positivism and interpretivisit

There are hardly any all-embracing definitions for different types of paradigms, i.e. the way of viewing the world and gaining knowledge. Likewise, social science research is hardly purely dominated by any extreme paradigm. Most of them lie on a continuum between strict positivist and strict interpretivisit epistemological paradigms (Walle 1997: 532). It is generally recognised that positivist philosophy of science upholds ontology that there is an absolute reality in the world. In order to reveal this reality, researchers need to be independent of that reality, and become 'outsiders'. Positivists think only that which is logically proposed and empirically verifiable is meaningful, besides these, all other observations are treated with doubts.

Based upon this thought, positivists developed a logical way, which they think could lead to scientific explanations. Harvey (1973) summarised that the scientific explanations through positivist approach usually takes the following procedure (see Figure 6-1). Much of the scientific knowledge is *a priori* in nature, established on the basis of intuitive speculation regarding the nature of the reality. A theory is postulated with the aid of the speculation. The theory will enable us to deduce sets of hypotheses, which could be tested on an empirical basis. After a process of testing and checking, if the hypothesis can be confirmed, the scientific law can be acknowledged and the explanation we are seeking ascertained (p.34-35).

**Figure 6 - 1 A route to scientific explanation**




Source: Harvey (1973: 34)

Although positivism is a powerful paradigm, one fierce criticism of positivism is that there is hardly a reality, which is completely independent from human perceptions. Technically, it is very difficult to separate them, especially in social science, where society and human behaviour are the main concerns. This determines that some social phenomena, which cannot be depicted by positive data and empirically tested, cannot be explained using positivism. Because the positivist paradigm needs to abstract the reality and relies on numerous assumptions. The complexity of the world is thus subjectively reduced. This leads to an alternative consideration, i.e. the interpretivisit paradigm.

Contrary to the positivism paradigm, the interpretivisit paradigm holds a relativistic ontology of the world, which is characterised by individual, social and cultural constraints. The observers are also active participants in the reality. Interpretivisit researchers try to depict the social reality in their own terms, concerned with an 'insiders' own experiences, understandings and explanations, through close contact with it and its participant observations. The interpretative, and consequently qualitative researchers maintain their collective ways of 'seeing the world', and each represents a unique viewpoint of the versatile world. Interpretivisit researchers treat the reality with a higher level of subjectivity.

In tourism research, one advantage of the interpretivisit paradigm is that it allows tourists and researchers to become involved into the research progress. An individual's affections, experiences, attitudes can all be subjective contributions to research, so that through research it is possible to express a human being's experience. Interpretivisit "treats the reality as a subject, and encourages it to speak for itself" (Tribe 2001: 445). On the contrary, positivism stresses logical empiricism, and encourages the facts to speak on their own. However, the common criticism of interpretivisit is that it is difficult to confirm cause-effect relationships, and thus logically generalise and predict. It makes little assumptions, but takes for granted that personal views are a true reflection of reality, and they have the ability to apprehend and explain, albeit with bias or preconception.

With respective to their different ontology and epistemology, positivists and interpretivisits use quantitative and qualitative methods as the investigative tools. Thus there are ongoing debates about the definitions and applications of these two methods. In general we can understand that the quantitative approach generalises from group behaviours, whereas the qualitative approach utilises an individual's narrative. Wright

(1996) gives qualitative techniques a working definition that "any research where number counting and statistical techniques are not the central issues, where an attempt is made to get close to the collection of data in their natural setting"(p.64). Qualitative methods include case studies, participant observations, interviews, etc. Quantitative methods refer to all these techniques, which use mathematic tools and involve statistic inferences and hypotheses. It normally has higher requirements on the quality and amount of empirical data. Kleiner and Okeke (1991) and Wright (1996) have summarised some of the different perspectives of qualitative and quantitative methods (see Table 6-1).

**Table 6 - 1 A comparison of quantitative and qualitative methods**

| QUANTITATIVE METHODS | QUALITATIVE METHODS |
|---|---|
| Independence | Interdependence |
| Linear | Linear and non-linear |
| Cumulative, additive | Multiplicative, interactive |
| Deriving realities from measures of other realities | Independent measures of the various realities |
| Deductive | Inductive |
| Ungrounded | Grounded |
| Verification-oriented | Discovery oriented |
| Confirmatory | Exploratory |
| Reductionist | Expansionist |
| Inferential | Descriptive |

Source: Adapted by Wright (1996: 70); Kleiner and Okeke (1991: 519) and Deshpande (1983).

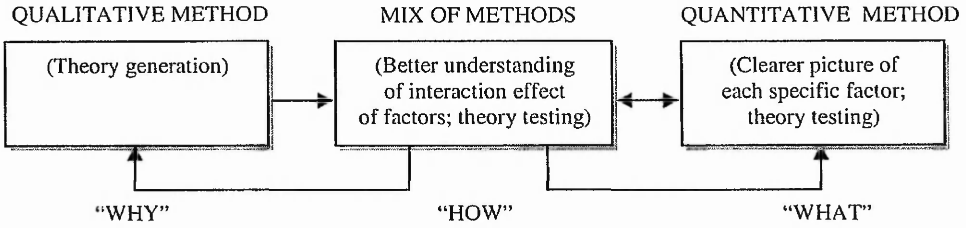
### 6.2.1.2 Is cross-paradigm research possible?

From a paradigm perspective, we can understand that it is acceptable to use the two paradigms together. This is because although a paradigm is closely associated with a methodology, it is important to recognise that the adoption of a paradigm position does not entail the adoption of a corresponding methodological position (Harvey 1973). Because methodology and paradigm are concerned with different things. The former concerns 'the logic of justification', and ensuring that the arguments of a research are rigorous, the inferences are reasonable and the method used is internally coherent. But paradigm is connected with philosophy which is concerned with value judgements, and with the philosophical underpinning of our beliefs. The separation of methodology and philosophy provides us with flexibility in tackling substantive problems. This makes positivism and interpretivisit paradigms philosophically exclusive; or quantitative and qualitative approaches operationally compatible (Howe 1985: 218). Although positivism and interpretivisit paradigms and the quantitative and qualitative methodologies are all subject to various criticisms, pragmatically their practical usefulness have not been greatly reduced as social scientists use more relaxed criteria than philosophers do. These two paradigms, and the combination of these two, have been widely used in every subject of social science research. As long as we acknowledge their limitations they can all make a contribution from their special angles to the base of knowledge (Mayer 1995).

In tourism research, researchers have advocated that like all social science theory, tourism as a subject should embrace a multi-paradigmatic discourse (Decrop 1999; Faulkner and Ryan 1999; Guba 1990; Walle 1997). In relation to this, the quantitative and qualitative methods can be used effectively in the same research project (Strauss and Corbin 1990:18). Likewise cross-cultural methodologists also promote that the use of triangulation that is using more than one method in conducting a cross-cultural research, which can generate more reliable results (Brewer and Hunter 1989; McGrath *et al.* 1982; Triandis 1976a; Wright 1996).

Therefore, it is important to emphasise that the position of this research is not against positivist *per se*, nor is it against interpretivisit. No approach is definitely better than the other, and no paradigm is superior to the other. Every method is open to use as along as we can show that its use is reasonable under the circumstances of a study (Harvey 1973: 6-8). The paradigm of this research is considered to combine the two epistemological stands. The benefit of using multiple perspectives is that it can help us to guard against many problems encountered in a problem solving. Quantitative methods are most useful for testing the generalisability of particular factors, whereas qualitative methods have greater strengths in the area of theory generation (Wright 1996: 76-77). Figure 6-2 shows the appropriate use of different approaches.

**Figure 6 - 2 Appropriate use of qualitative and quantitative methods in cross-cultural research**




Source: Wright (1996: 77).

Both the qualitative and quantitative approaches will be applied in a complementary manner because it suits the investigation best. Different techniques can be considered in different phases of this research project. For instance, elementary descriptive tools give a general description of the empirical evidence of tourist behaviour. They describe the structure of complex journeys and emphasise their various dimensions. Some travelling aspects, such as the route and pattern of the SDT, which are difficult to quantify, can be adeptly explained using qualitative techniques. They have a proven value as a preliminary step in data analysis, prior to the use of more complex quantitative techniques. Simple statistical analyses can be used to achieve more formal and reliable results. These can be used to identify basic spatial relationships among variables, and help to recognise more sophisticated cause-effect relationships. More complicated analyses, such as simple and multiple correlation and regression analyses, as well as tests of hypotheses can be used to discover the dependence among characteristics of the SDT, and to uncover factors that influence tourist travel behaviour (Thill and Thomas 1987). The distinctions between positivism and interpritivisit paradigms, as well as related qualitative and quantitative methods in this research are illustrated in the research flow chart (see Figure 1-1) and the data analysis procedure chart (see Figure 6-3). Detailed explanation will be introduced in Section 6.3 and Section 6.4.

### *6.2.2 Cross-cultural methodology*

There is a wide recognition of the importance of the cross-cultural perspective and plentiful literature dedicated to its study. However there are still plenty of methodological problems which plague this stream of research, and limit our understanding and theory development (Malhotra *et al.* 1996). Concerns mainly lie on the design of research perspectives, equivalence and comparability of comparisons across cultures, the level of cross-cultural research and the sampling and measurement methods used.

#### 6.2.2.1 Etic vs. emic approach

Cross-cultural researchers have long proposed the dichotomy of etic and emic viewpoints. The distinction between etic and emic approaches concerns the construct origin of a research. A construct refers to the basic ideas utilised in a cross-cultural research. Kaplan (1964: 55) says "constructs may be defined as terms which though not observable either directly or indirectly may be applied or defined as the basis of the observables". Basically, the etic approach examines the tourism phenomenon from a position outside of the cultural system, and evaluates the nature of an individual's experiences by an extraneous yardstick. The etic approach investigates many cultures, and the criteria adopted in doing so are considered universal or absolute. Whereas the emic approach tries to comprehend a cultural system from within, it investigates only one culture and the criteria adopted are relative to the internal characteristics of that culture (Cohen 1988: 41; Malhotra *et al.* 1996: 12). Pike (1954, 1956, 1960) interprets the two approaches as:

> *"In contrast to the etic approach an emic one is in essence valid for only one language (or one culture) at a time ... it is an attempt to discover and to describe the pattern of that particular language or culture in reference to the way in which the various elements in that culture are related to each other in the functioning of that particular pattern, rather than an attempt to describe them in reference to a generalised classification derived in advance of the study of that culture (Pike 1954: 8).*
>
> *An etic analytic standpoint ... might be called 'external' or alien' since for etic purposes the analyst stands 'far enough away' from or 'outside' of a particular culture to see its separate events, primarily in relation to their similarities and*

> *their differences, as compared to the events of other cultures, rather than in references to the sequences of classes of events within that one particular culture" (Pike 1954: 10).*

He further compared these two approaches and stated that although the emic approach allow complex attitudes, motives, interests, responses, conflicts and personality into research, it lacks rigor as it views cultures and people on their own terms. But this may help researchers to appreciate the culture or language in holistic ways, also investigate specifically the life, attitudes, motives, interests, responses, conflict, and personality of a culture. On the contrary, etic approach is more rigorous from an 'outsider's' perspective, but it hinders the ability to deal with these specific considerations (Walle 1997: 529).

This identification of the etic-emic dichotomy echoes the positivism-interpretivisit as well as quantitative-qualitative dichotomy; and it bears similar epistemological sources with the two dichotomies. However the etic-emic dichotomy is more pertinent to cross-cultural and cultural research. In tourism research as well as other social sciences, it is an increasingly common view that these two approaches should work hand in hand. Both approaches have distinctive weakness and advantages, and both have 'redeeming characteristics' (Walle 1997: 535). To suggest that research strategies should consider only one approach but reject the other "was error" imposed profound limitations (Harris 1980: 42). The emic approach or qualitative approach normally plays an important role in the initial stages of research. It helps researchers familiarise themselves with the phenomenon in question and leads to the establishment of scientific enquires. The etic approach then can be used to explore in-depth cross-cultural relationships.

Although a true etic approach should have universality and be derived from all types of culture, this is rarely the case due to practical limitations. This gives rise to the pseudo-etic approach. The paradigmatic stance of this approach lies in the middle of the etic-emic continuum (Triandis 1972), and is developed from the etic constructs of a limited number of cultures explored from the outsiders' point of view. Most of the cross-cultural research are actually of this type. This also considered in this research because there is no need to consider tourist from all over the world as the research population and it would be practically impossible to do so.

#### 6.2.2.2 Level of analysis

Although all research relating to multiple-cultural comparison could be called cross-cultural research, culture can be reflected at both individual and collective/culture levels (Hofstede 1980a; Leung and Bond 1989; Vijver and Leung 1997). In tourism studies, Ewing (1983: 126-127) states that "in analysing data on the human behaviour of a sample a fundamental decision for the analyst is whether to try to explain the different behaviour of each individual in the sample, or whether to tackle the simpler task of explaining the distribution of choices made by members of one or more groupings of the sample". Researchers need to be aware of this issue in their research designs. At the collective level, cultural constructs are compared and measured across different cultural units such as nations, which are treated as a homogenous group for analysis, and the results obtained are characteristic of the culture groups but not of individuals.

A nation is a very distinctive culture-bearing unit, and countries of origin have been conveniently used by many researchers. It has been empirically proven that cultural can be distinguished on a regional basis, nationality can influence people's 'culture learning' behaviours and their cultural orientation. One obvious limitation is that it might lead to the ecological fallacy. Nation is not necessarily able to distinguish cultural differences in all situations. In this case researchers tend to presume that culture is homogenous across a nation. Also it may lead to incorrect application of culture level characteristics to an individual (Vijver and Leung 1997).

At the individual level cultural constructs are measured and compared using individual as the unit of analysis. An individual's characteristics are not summarised into group characteristics. The advantage of using an individual-level construct is that we can link a specific aspect of culture within a given homogenous group of people, rather than relying on generalised differences attributable to citizenship status, country of origin. To a certain extent, this can help to explain the relationship between culture and the behaviour of cultural bearers within and across cultures (Leung and Bond 1989; Vijver and Leung 1997). However in this approach culture is treated to individual characteristics, but not a group phenomenon, which is at variance with the notion of culture. It is difficult to distinguish if the outcomes are based on individual personal or cultural differences.

Although research can be distinguished at these two levels, most research involves multiple levels of analysis rather than using any one of them solely. On the basis of this clarification, it is recognised that the level of analysis of this research takes this idea that a combined collective and individual levels will be involved.

#### 6.2.2.3 Equivalence and comparability

Whenever social science research crosses national boundaries, comparability and equivalence of data are the challenges of a cross-cultural methodology. When two cultures are compared they must share some features in common and differ in some features as well (Malhotra *et al.* 1996: 8). The very aim of cross-cultural research is to distinguish the similarity and differences between different cultures, and explain the reasons. These common features are the equivalence of a comparison. This requires that the meanings of key concepts and design of research strategies are equivalently defined across the cultures in question. Comparability is an interrelated concept to equivalence.

Barry (1969) has summarised three types of equivalence. Once the three types of equivalence are substantiated, comparability of cross-cultural research may be established (Harpaz 1996). The first is functional equivalence, which indicates that the phenomenon or behaviour in two or more cultures is related to the same functional problem. Or put another way, it refers to whether a given concept or behaviour serves the same role or function in different cultures (Malhotra *et al.* 1996: 19). Each cultural group has their unique way of viewing life. So in one culture, borrowing money to travel is norm, but in another it might be regarded as self-indulgence. The aim of a cross-cultural study is to find out the different views. But on the other hand, even though they are different, the functional form of the behaviour still exists in the different cultures so that comparisons can be carried on using these forms. In research designs, researchers need to consider the cultural variations of research subjects, and their ways to respond to common inquiries.

The second is conceptual equivalence, which refers to the concepts or materials used in cross-cultural research, which should have the same meanings across cultures. Imagine that people interpret 'travel' differently from country to country, how could the cross-cultural 'travel-related' behaviour be compared. One acknowledged problem in tourism research is the inconsistency of the concept of tourism and tourist statistics across cultures. This is an indication of conceptual non-equivalence. The problem is that many concepts are culture or geography bounded which creates obstacles for cultural comparisons.

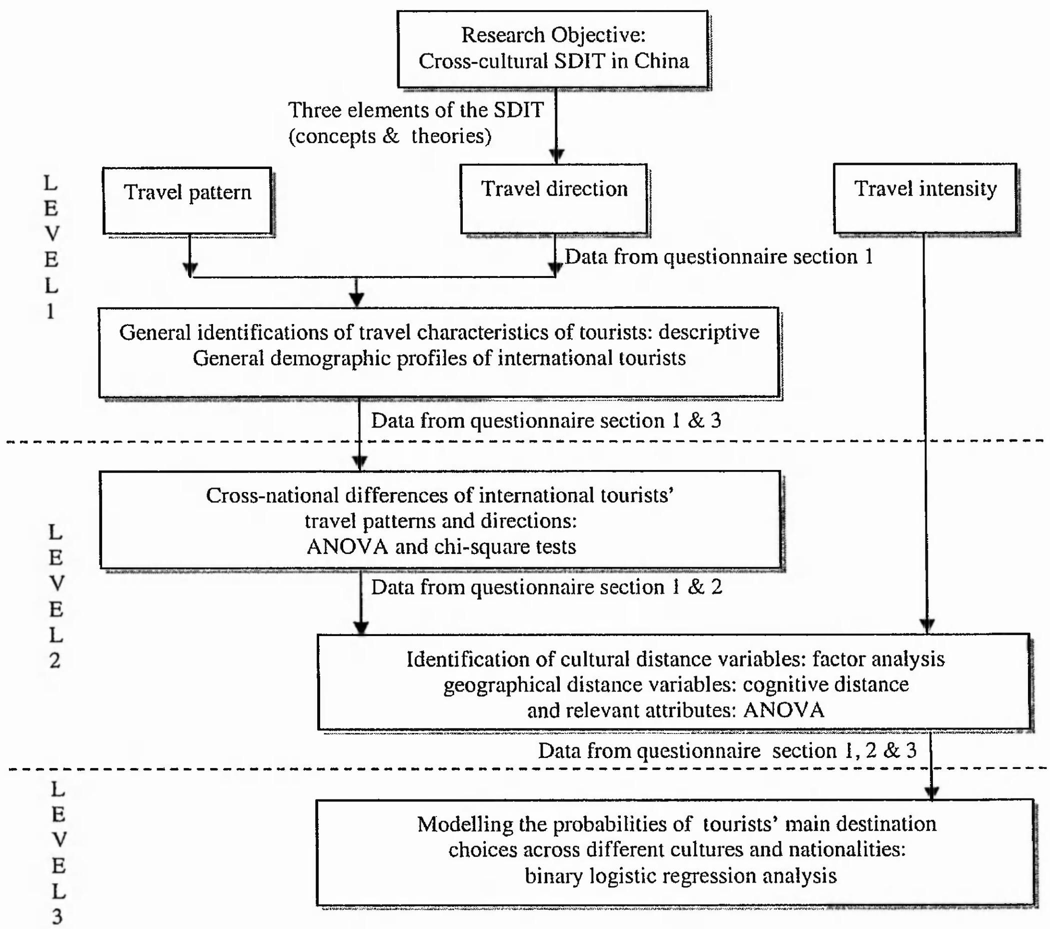
The last one is metric equivalence. It generally refers to the measurement instruments of data sets, such as scales, measures and linguistic descriptions used by different cultural groups that need to be understood by the respondents in a similar manner to the researcher. This equivalence is relevant to cross-cultural research design, questionnaire design or data collection method. It is problematic if the design of the constructs used in cross-cultural studies is not comparable. No society is purely homogeneous in all cultural aspects. The right selection could utilise the real cultural-bearing construct and avoid making problematic comparisons.

## 6.3 DATA ANALYSIS STRATEGY

The aim of the following two sections is to operationalise the concepts and theories identified as underpinning this research, so that the research objectives can be transferred into describable, measurable and testable constructs. It includes two main tasks – data collection and data analysis. As classified, the data analysis of this research involves both qualitative and quantitative techniques. Relating to this is the pseudo-etic cross-cultural research methodology at a combined collective and individual cultural level. Based on these principles the data analysis and data collection strategy can be proposed.

So far the preliminary preparation of the research as involved a qualitative literature review and simple quantitative data analysis (refer to Chapter 5) which has provided an insight of the conceptual and theoretical underpinnings and the context of this research. In the data analysis stage, this research has adopted a procedure, which involves three levels of analyses. The qualitative approach will be used when little is known about the issues in question, as the changing of the techniques, the research progresses to higher level of analyses using the quantitative approach. Figure 6-3 illustrates the procedure and the different levels of data analyses.

**Figure 6 - 3 The procedure of data analysis and questionnaire sections**



### *6.3.1 Levels of data analysis*

At the first level, the initial analysis will report the demographic profile and basic travel patterns and directions of the international tourists in China, such as the entry and departure points of the international tourists, the intervening routes of their travel, and the temporal aspects of their stay. One key aim is to observe if some of the travel regularities, such as the distance decay effect and the central-peripheral hierarchical function, are present. A focus is put on cross-national differences in tourists' travel. The data used for this analysis will stem from the questionnaire survey. Information will be mainly put in Section one of the questionnaire. Elementary descriptive tools will be used because the structure of complex journeys and the emphasis of the patterns and directions of the SDIT are difficult to quantify.

At level 2, the travel patterns of the international tourists obtained from the first level will be compared across different nationalities/ethnicities in order to assess cross-national differences in the SDIT. Simple statistical analyses will be used in identifying the basic relationships among variables such as the analysis of variance (ANOVA) and the chi-square test. These two types of statistical techniques have been widely used in cross-cultural studies and recognised as effective in comparing group behaviours. The popularity of these two techniques is due to their simplicity, availability in computer packages and robustness against violations of assumptions.

Also, at this level, some important social and cultural attributes that are considered in affecting the SDIT will be assessed so that they can be used in the subsequent cause-effect analysis. The focus of this assessment will be put on the cultural distance and the geographical distance variables because they are the key curiosity of this research. The cultural distance variables are measured using factor analysis. Factor analysis is the most frequently used method to explore the underlying constituents from the observed scores. One advantage of the technique is that it establishes construct equivalence in cultural comparison (Vijver and Leung 1997). As equivalence and comparability are the main methodological consideration in cross-cultural research, the use of factor analysis could help to identify and constitute the equivalence on the basis of statistic reasoning.

The geographical distance variable is obtained using the cognitive distance of tourists. Data needed for measuring these two variables are mainly drawn from the second section of the questionnaire. Both cultural distance and geographical distance variables are measured at individual level. The collective level of analysis is reflected by the inclusion of the places of origin and ethnicity variables of tourists into the model building.

The aim of the third level of analysis of the SDIT is to model the actual origin-destination interactions of international tourists travelling within China. The focus is on the intensity of the SDIT. This is achieved through detection of the probabilities of tourists' visitations to different main destinations, and examining their links with the attributes identified at the second levels, such as cultural and geographical distance variables, nationality and ethnicity, and some major socio-demographical variables etc. Data used in this analysis will be drawn from all sections of the questionnaire and the binary logistic models will be employed at this level.

### *6.3.2 The logistic regression model*

In model building it is frequently difficult to say, *a priori*, which type of models is better than the others? Therefore it is usually decided by a researcher which method fits the observed data most closely according to the fitting criteria he or she likes best (Beaman *et al.* 1979; Senge 1975). Since in this research the model needs to be able to explore the spatial choices of international tourists, the logistic models are considered more suitable because, as discussed in Chapter 4, they inspect the probabilities of tourists' destination choices, and are able to explore socio-economic and behavioural reasons for the choice probabilities. The binary logistic models are applied at the third level of the data analysis. Details of the model building and data analysis will be presented in Chapter 8.

Although there is a variety of multivariate statistical techniques able to predict a binary dependent variable from a set of independent variables, such as multiple regression analysis and discriminant analysis. The strengths of the logistic regression model in relation to other methods for analysing the determinant factors of choice have been put forward by many researchers (such as Agrawal and Schorling 1996; Arnold *et al.* 1980; Currim 1982; Frasquet *et al.* 2001; Gensch and Recker 1979; Hauser and Koppelman 1979; Malhotra 1984). Multiple regression analysis is powerful in analysing and predicting the contribution of potential attributes and overall estimate reliability. However the ordinary least square multiple regression analysis cannot be used to fit data involving multinomial discrete responses. The difference between logistic and linear regression models is that the outcome of the former is binary or dichotomous but the later is continuous. Also the outcome of a logistic regression model is a prediction of the probability of an event occurring, but not the number of times that it occurs. The probability that an alternative is chosen is defined as the probability that it has the greatest utility among the variable alternatives (Ben-Akiva and Lerman 1997). It answers the question of the choice probability, thereby allowing an assessment of how much one destination is preferred to others by tourists, rather than how many of them go to the destination. Its main advantage is that it takes individual behaviour into consideration and aims to explain the decision-making processes of tourists but not simply their final decisions.

Another related technique is discriminate analysis. This analysis is also appropriate when the dependent variable is nonnumeric. However, it has been suggested that when the dependent variable has two or more than two groups, logistic analysis may be preferred. This is because the use of multivariate discriminate analysis is very strict in meeting some of the important assumptions, such as multivariate normality and equal variance-covariance matrices across groups. But logistic regression models are more robust when these assumptions are not met. Also, mathematically, it is very flexible and more easily used than discriminant analysis. The explanation of logistic regression model is more straightforward and more meaningful to (Hair *et al.* 1998; Hosmer and Lemeshow 1989). Though the model is subject to some criticism, especially concerning its fundamental assumptions, applications of this model in recreation and leisure studies have been developing quickly.

### *6.3.3 The initial consideration of the alternatives and choice sets of the dependent variable in the logistic regression model*

In model building for tourist demand, there are usually two types of choice sets in dependent variables. One type is the continuous choice set. It is normally used in many of neo-classical microeconomics demand analyses. The other type is the discontinuous choice set, which is used in the logistic regression models. To appropriately define the alternatives in a choice set of a dependent variable is one difficulty associated with the discrete choice model (Ben-Akiva and Lerman 1997; Richards 1979; Slagmolen 1979). A principle is that the alternatives do not need, and are sometimes unable to cover all the possible choices. It is possible that some of the tourists do not consider all the alternatives in their decision-making. Also it is possible that not all the alternatives allowed are realistic alternatives, namely, they are not of equal status to other choices. Practically, it is usually impossible to include all the alternatives into a choice set. Empirically, research results have shown that the inclusion of too many alternatives puts a heavy claim on the model's discriminatory capacity. The more the alternatives, the less the choice probability of each of them, and the more difficult it is to reveal the true estimation. Models containing only abstract alternatives suffer less from this deficiency (Richards 1979; Ruijgrok 1979; Van der Goot 1978). Therefore, one good way to alleviate the problem is to condense the alternative set to reflect the most effectively chosen or the most realistic alternatives. For example, the use of a zoning system that defines the spatial alternatives in a destination choice research produces a more effective choice set.

Another point of consideration in choosing the choice set is that, as discussed in Chapter 4, the logistic regression model is characteristic of the independence-from-irrelevant-alternatives (IIA) assumption. That is that change in one irrelevant destination does not affect the magnitude of the difference of changes occurred in the other alternative destinations. The criticism of this assumption is that it is difficult to hold in reality, such as the utility of visiting one destination will remain invariant regardless of whether or not other destination(s) are visited. It is not easy to define a distinct alternative and it is believed that a fairly high degree of non-independence exists between alternative tourism destinations. The simplest way to avoid the failure of the IIA assumption is to carefully define truly independent alternatives, and make sure that they have a sound degree of independence. On the other hand, although the assumption is overly strict it is one of the strengths of the logistic regression model. This is because it makes the model statistically tractable and permits new choice alternatives to be easily added without re-estimating the model (Stynes and Peterson 1984: 303).

In this study, the main purpose of the use of the logistic regression model is to predict how likely a tourist is to choose from the set his/her travel destination. The collection of the alternatives of destination choice is all the available sites for a tourist to choose from in a particular trip. However, in this case, the number of the choices could be very large as there are so many destinations in China. Therefore the potential destinations can be greatly condensed into a few choices using the three major tourism regions in China, which are identified in Chapter 5 (refer to Section 5.3.4; Section 8.4), i.e. the Northeast, Middle east and the Southeast tourism regions. With relation to these three regions, three important tourism sites are chosen as the place to represent the three choice alternatives in the choices set of the dependent variable – Beijing, Shanghai and Guangzhou. One category of 'Other' is added to cover all the rest of the destination choices of the tourists. The advantages of using this method to form the choice alternatives in the dependent variable are fourfold:

1. The model will be studied in the unit of region not in the unit of site; by regionalising the sites, the regions will become identifiable entity as a tourist attractions rather than various different sites with diverse identities;
2. With too many destinations in a country like China, this will reduce the complexity of model building;
3. The centres or the key sites in each region which attract the most international tourists are used as the surrogate for the regional destination, so that the data collection of the survey can be conducted in these three sites, and the data will be less broad and more representative;
4. These three tourism regions are representative of the three important tourism destinations in China, in which a variety of differences in attributes and

attractiveness to diverse tourist types as choice alternatives can be present for the logistic regression model estimation.

### *6.3.4 The initial consideration of the explanatory variables in the logistic regression model*

The flows of tourists from one origin to a destination are a function of many factors. Zins (1998) has categorised these factors into observable variables (e.g. demographic characteristics, activities, consumption patterns) and unobservable variables (e.g., interests, opinions, attitudes, personality traits). Cesario (1973) also clarified them into destination characteristics, such as attractiveness of destination; origin characteristics; and spatial separation costs, which refer to the interaction factors between origins and destinations. All these classifications are slightly different, but have overlapping effects. Given the resource constraints of this research, it is not practical to include many variables. Based on the literature reviewed in Chapter 2 to 5, and revised on the basis of a pilot study, this research incorporates three groups of explanatory variables into logistic regression analysis. They are locational attributes; socio-demographic characteristics and trip characteristics. Among all the three groups of explanatory variables, the analysis pays particular attention to the effects of the cultural and geographical distance variables.

Locational attributes represent the attributes of a destination. Geographical distance is an important attribute in this category, which is designed to measure the distances between the main destinations of tourists in China and tourists places of origin. In empirical research, geographical distance has been given different definitions. Many travel decision models have incorporated actual distance measurements using miles (Durden and Silberman 1975; Richardson and Crompton 1988b) or average distance (Freund and Wilson 1974). However, the utility of using actual distance in such models is debatable, because different tourists do not necessarily perceive real distance as a constraint for their travel with equal magnitudes. Also, real distance is very difficult to measure, especially in the situation of international travel. Instead of using real distance, in some cases the number of 'intervening opportunities' (Ewing 1980: 11) , such as the travel cost between origin and destination and the elements of time and effort of tourists' travel, have been used. However, travelling cost and time are not precisely distance specific, because for example, if there is a stopover, distance might not be in proportion with travelling time. On the other hand, it might be that although travelling time is long, as long as it is convenient, tourists may not feel it is that long. In the situation that origins and destinations are multiple, the zonal method has been widely proposed. However, the problem with the zonal approach is that there is no natural way to divide a territory into zones. The parameters estimated in a model using zonal data will vary depending on where zone boundaries are drawn or number of zones used. This is because zone-to-zone distance values change with the zoning scheme used (Ewing 1983: 126-127). Taking account of these points, this research considers the use of the cognitive distance in the logistic regression model building.

Instead of using real distance or distance proxies, the behavioural approach has been widely used to define distance. It is claimed that cognitive distance rather than actual distance may best depict individuals' decision-making (Ankomah and Crompton 1992; Walmsley and Jenkins 1992a, 1992b; Ankomach *et al.* 1996; Cook and McCleary 1983). Cognitive distance is the "mental representation of actual distance moulded by an individual's social, cultural and general life experience" (Harrison-Hill 2001: 3). Researchers have confirmed that there is a distortion of tourists' cognitive distance and the real distance; and cognitive distance is the more direct influence of tourists' spatial decision making (Ankomah *et al.* 1996; Ankomah and Crompton 1992; Brown and Broadway 1981; Cadwallader 1981; Canter and Tagg 1975; Harrison-Hill 2001; Lloyd and Heivly 1987; Walmsley and Jenkins 1992a, 1992b). The use of cognitive measures also makes it possible to include attributes or characteristics of which direct measures do not exist, and to account for differences between the subjective evaluation of alternatives of tourists and the subjective reality (Koppelman and Hauser 1978).

Another widely researched variable in the category of locational attributes is destination attractiveness, because it is the major push factor for tourists travel (Dann 1977; Phelps 1986; Uysal and Jurowski 1993). They are mainly the man-made or natural or social-cultural based attractions. There are many aspects which could represent the attractiveness of a place; such as the preference of tourists (Hu and Ritchie 1993; Piperoglou 1966); a combined feature of the tourist attractions (Ferrario 1979a, 1979b). In the same way as the formation of geographical distance variable, most of the attractiveness has incorporated the behavioural elements and significant impact has been identified. For instance, Husbands (1983) used data on tourist flows, and individual's expressions of choice/preference for the destination visited to form an attraction scale. Based upon these, this research uses a perceived notion of the attractiveness of the destination because "the attractiveness of a travel destination reflects the feeling, beliefs and opinions that an individual tourist has about a destination's perceived ability to provide satisfaction in relations to his or her special vacation needs" (Hu and Ritchie 1993).

The second category is socio-demographic attributes which represent the characteristics of the supply side, mainly tourists themselves, such as cultural distance, ethnicity, income and gender. The influence of the socio-economic variables upon tourist spatial behaviour has been researched extensively. Each tourist group has a unique socio-demographic background. People from these backgrounds have different styles and variety in their spatial distribution patterns. Demographic variables, such as social status, age, gender etc. have been confirmed to affect the spatial behaviour of tourists (Cooper 1981). For instance, Pearce (1978) examined tourist flows focusing on the demographic variations of tourists from different nations. He accounted for the variation of tourist destination preferences in terms of not only nationality but also the demographic characteristics of the tourists, such as age and gender of tourists. He proposed the terms of "male- or female-oriented destinations, and destinations that attracted predominantly youthful, middle-aged or elderly travellers" (Pearce 1978: 7). His findings have been supported by studies from other researchers (such as Collins and Tisdell 2000; Haahti 1986; Oum and Liemire 1991).

Culture is one of the most important socio-economic factors. The difficulties of measuring cultural variables have been experienced by many tourism and cross-cultural researchers alike. Researchers tend to use cultural proxies, such as nationality, of ethnicity, or country of origin; indirect measurement of culture or cultural distance has been very rare. As clarified in Chapter 3, the use of the relative cultural distance variable is a key emphasis of this research, the measurement of the cultural distance variable need to be carefully designed. Cultural distance relates to tourists' preference, opinion, and knowledge of the destination culture in contrast to their own cultural backgrounds. Based on this notion, the cultural distance variable is represented by a combination of tourists' subjective perceptions of the cultural differences between their own culture and Chinese culture which is underpinned using Confucian value dimensions. The simplest and most obvious method of representing tourists' perceptions is by individual ratings for an exhaustive list of comparative cultural attributes. It is assumed that underlying cognitive dimensions exist and that tourist ratings of attributes include a common component attributable to these cognitive dimensions. This can be found by factor analysis of these attributes. The advantage of factor analysis is that it identifies a simpler perceptual structure that can provide clearer insight into how tourists perceive alternatives (Koppelman and Hauser 1978).

The third category is the trip characteristics of tourists including duration of stay, travel group, entry point and travel expense, etc. Trip characteristics are the result of socio-behavioural constraints themselves. For example, the use of travel group might be a result of marketing arrangements. Therefore it represents the influence of market forces on tourists' travel. Trip expenses represent the social and economic statues of travellers. The incorporation of these attributes can help to identify the interrelationships between various spatial choices and trip characteristics.

Based upon this data analysis strategy, data collection strategy can be designed accordingly. Questionnaire design will incorporate all these requirements regarding the information needed in the data analysis

## 6.4 DATA COLLECTION STRATEGY

All empirical research needs a data collection strategy, the ultimate objective is to create a cost-efficient data collecting strategy, and gather effective empirical data which are suitable for the analytical techniques selected. Data collection strategy defers from research to research and normally involves complicated survey instrument design, survey method design and sampling method design.

All empirical research has strict data requirements such as data should be drawn at random; there should be ample sample size. However, the practice imposes difficulties, and there is a rising cost of data collection if all these requirements have to be met. On the other hand data collection needs to consider the operational method of a research so that the information collected is suitable for designed type of data analysis. This requires that a data collection strategy should be efficient, accurate, logical and impartial under all the resource constraints. It must reflect the range of potential uses for the data collected and should take into account the possible difficulties associated with the sampling method. There are some inevitable theoretical compromises under all these requirements, because the practical problems of implementing different sampling strategies, such as no-response to various questions, data reliability, or extremely high costs, may often outweigh theoretical issues (Ben-Akiva and Lerman 1997).

### *6.4.1 Survey instrument – questionnaire design*

Since this research involves quantitative techniques and behavioural studies, it plans to use a questionnaire survey in order to obtain first hand empirical data. The importance of the design of the survey instrument therefore, is critical to the research in providing rational and reliable data. There are many methods to collect data, such as interviews, or using secondary data. The advantages of using a questionnaire over the other types of method are fourfold. First, this can lead to the direct access of first hand data. A carefully tailor made survey strategy can also directly aim at solving specific research questions. It is also cost-effective because most other methods have rigours requirements with regard to the database and enormous size of resources needed. The data will also be more consistent, because if second hand data is used, such as national statistics from different countries, it might not be consistent or equivalent. A carefully designed questionnaire can be drawn from respondents from a range of origins, but still retain a higher consistency. It can also reduce the need for a variety of human resources across diverse geographical locations and therefore reduce administrative bias.

Before the sets of questions that address the three main inquires into the SDIT in China, the questionnaire has a brief introduction explaining the purpose of the research. All the important questions regarding tourist spatial behaviour and their cultural identity are based upon a literature review, as well as discussions with some tourist specialists in China. The questions have been pre-tested and revised following a pilot study.

Questions cover both structured and unstructured elements and employ two basic methods of questionnaire administration, in order to elicit the maximum amount of information desired. Questionnaires can be self-completed as the questions are simple to follow with the majority requiring only a tick or a circle. After completion, respondents mail back the questionnaire to the appointed address. Unstructured questions have been carefully limited because their answers would reduce translations as more than one language is involved in the survey. Translating different languages is not as simple as code-reading and is both tedious and can produce bias. Also in the pilot study the responses to this type of questions were low, so limited applications of them are employed in the final questionnaire.

Part one of the questionnaire investigates the general spatial behaviour of international tourists travelling in China. Questions cover topics such as frequency of tourists' travel, activity preferences, modes of travel, routes of travel, entry and departure points, travel arrangements, motivations and purposes, means of arrival, and main destination choices. This part also provides the respondents with a map of China to illustrate the spatial patterns of the tourism regions in China. Respondents are asked to sketch their trips directly onto the map, indicating the actual routes taken from their entry points in China to other places visited and to the departure points. In order to further clarify the route taken by tourists, questions are asked about their route so that answers are in words as well as in pictures.

In the second part of the questionnaire, questions relate to tourists' understanding of Chinese culture, their perceptions and opinions about the culture difference between their own and the destination culture, as well as the attractiveness of the destination. Questions are structured so that an individual can rank quantitatively his/her preference, attitude and opinion pertaining to these attributes. A total of 14 items were designed, and the aim of these questions is to elicit the information about the tourist's cultural identity and their cultural distance with the Chinese culture for the purpose of an adequate comparative analyses. These attributes are measured on a 5-point Likert scale with 1 representing the least magnitude and 5 representing the most magnitude. The use of proper scales is important because they might cause equivalence problem if they are not comparable across nations. An example of this is the term 'not at all', which with regard to speaking Chinese, can vary in understanding from country to country. The five-point Likert scale has gained wide acceptance for its ability to overcome this potential problem, because it is more sensitive than a four-point scale in measuring attitudinal and preferences, yet more easily understood by respondents than a higher point scales (Barry 1969; Garland 1990).

Finally the third part makes standard inquiries into the demographic, social and economic profiles of tourists, such as nationality, education, income and trip expenses. A scaled method is applied to sensitive topics, such as age categories and income levels. The whole questionnaire will normally take about 5 minutes to complete, this is considered not too long a period of time and will not turn respondents away (refer to Appendix Three and Four).

### *6.4.2 Questionnaire translation*

Attempts at translation in cross-cultural research impose another challenge in survey design. The task relates to the language or metric equivalence of a cross-cultural research (refer to Section 6.2.2.3). Faulty translation can be a source of bias and the failure of the research (Lloyd and Dicken 1972: 24). This is especially so in tourism studies where linguistic diversity is a main phenomena peculiar to international travel. This issue has received a great deal of attention in the cross-cultural literature (Brislin 1976; Ronen 1986; Warwick and Lininger 1975; Triandis 1976b; Harpaz 1996). Werner and Campbell (1970) and Lloyd and Dicken (1972: 24) summarised some rules in questionnaire design in order to facilitate cross-cultural communications and control false translation and misunderstanding. They are (1) the use of simple sentences; (2) the repetition of nouns rather than their replacement by pronouns; (3) the elimination of metaphors and colloquial expressions, (d) the use of the active rather than passive tense and (e) the avoidance of the subjunctive and of hypothetical phrasing.

In this research the questionnaire was initially written in English and then translated into Chinese by the researcher and Japanese and South Korean by professional translators for the use in the pilot study and the fieldwork. (The South Korean tourists were considered initially, and tried in the pilot study, but were decided to drop out in the analysis (refer to Section 6.4.3.2 and 6.5). The researcher's bilingual ability of both Chinese and English, her ability to understand part of Japanese and her familiarity with these three cultures helped to maintain the translation equivalence. Cares were put into reducing possible sources of misunderstanding across nations, especially on some cultural-related questions. Some of the phases are defined and described in plain language, such as 'face' and 'the main destination'. Simple sentences, nouns, and graphs are intentionally applied in order to avoid vague understandings. Questions were repeated in different words in order to enhance the chance that the respondents would better understand the intention of the questions (Harpaz 1996).

### 6.4.3 Sampling strategy

Sampling strategy in cross-cultural SDT research involves complicated decision making regarding sample size and frame, nations involved, sampling location, sampling method, etc. An inappropriately designed sampling strategy could have lead to the failure of the whole research.

#### 6.4.3.1 Sampling frame

The sampling frame is the statistical universe from which the sample population is drawn (Smith 1985). The essential consideration of a sampling strategy is the statistical representativeness of the sample – i.e. the degree to which the sample resembles the entire population. In this research this involves the consideration of the three aspects – the purpose of tourists in travelling to China, their places of origin (refer to Section 6.4.3.2), and sampling locations (refer to Section 6.4.3.3). Qualified samples for this research will be evaluated based on these three frameworks.

As discussed in Section 6.2.2.1, this research is a pseudo-etic cross-cultural research; there is no need to consider tourists from all over the world as the research population and it would be also practically impossible to do so. Most of the pseudo-etic cross-cultural researchers draw their target populations from convenience sources. The population size in this research therefore is finally defined as the international leisure and VFR tourists travelling in China from four places of origin. They are American, British, Japanese tourists and tourists from the GCRs. A detailed explanation of making of these choices is elaborated in Section 6.4.3.2. Although the population size is confined, it is still large enough; and the population can be treated as including an infinite number of members.

Regarding the unit of the sampling frame, it is claimed that the sampling unit of a research should be defined to be mutually exclusive, and must collectively exhaust the population (Ben-Akiva and Lerman 1997: 219). In this research, an individual tourist from the four selected tourism origins is treated as the definition of the sampling unit. It is very unlikely that a tourist is selected to answer the questionnaire twice, and this effect could be ignored. They collectively constitute the sampling frame of this research and they are fairly mutually exclusive.

Potential tourists are categorised into two main groups - travel for business, conference and trade; and travel for leisure, VFR and holiday purposes. The research will limit to the second group of tourists, i.e. leisure and VFR tourists. The reason for only paying attention to this group of tourists is that only these tourists' spatial behaviours are more likely to be affected by a variety of social, economic and cultural factors specifically applicable to this research.

#### 6.4.3.2 The choice of places of origin of international tourists

Normally the selection of places of origin in a cross-cultural research depends on the research questions addressed, and the accessibility of the materials and data for the analysis. It has been mentioned that the tourists from four origins are chosen as the subjects for this study. The choice of these four origins is not random. It is based on a pragmatic, and theoretical and methodological consideration.

Drenth and Groenendijk (1984) proposed two criteria for choosing countries in cross-cultural research. The first one is the maximum similarity approach. Under this approach, the countries selected for comparison preferably have the largest differences in the specific attributes of study, but with as many similarities as possible in the rest of the variables. This approach is preferred for testing the effect of a certain independent variable such as the same nationality to a different ethnicity. The second criterion is the maximum differences approach which is preferred when a theoretical or causal relationship is examined. Both approaches are appropriate depending on the research objectives. This research is considered to combine these two criteria because the places or origin selected are perceived as having either the minimum cultural differences such as Japanese, and ethnic Chinese tourists from the Neo-Confucian culture group, and

American and British tourists from Western culture group; and the maximum cultural differences such as the cultural differences between these two cultural groups.

The sample for this survey was initially decided to be drawn from a population of international tourists from America, the UK, Japan, South Korea and tourists from the GCRs. However, in the pilot study, the questionnaires answered by the South Korean tourists were limited, and considering the resource constraints in terms of the language involved and time spent, this group of tourists were eliminated from the field work (refer to Section 6.5). Tourists from some other origins have also be tested in the pilot study, but it is finalised that the places of origin of tourists selected for this research are the America, the UK, Japan and the GCRs (refer to Section 6.5.5). International tourist population is thus divided into four strata; each stratum is a subdivision of the population which is determined by their places of origin. Samples will be selected within each stratum. This can be seen as a multistage stratified sampling method (Beiley 1982: 104; Saunders *et al.* 1997).

The benefits of using this method are threefold. First, it ensures that each sub-group of the population being studied will be represented equally in the sample. There is no over representation or under representation of any groups. Each stratum will present sufficient sample size for study. These groups also differ with each other in ways that are important for the analysis. Secondly, the use of this method can help to improve population estimates, provided that the variable used for the stratification is related to the subject of the study (Dixon and Leach 1977). That is that it tends to maximise the differences between groups but maximise the similarity within groups. Finally, this approach increases the efficiency of sampling method without diminishing the randomness, which is ideal for acquiring efficient samples for good population estimations. The samples can be collected within each stratum; as a result, the total sample size required can be reduced.

Other points were also considered in making these choices. Geographic diversity is an element of consideration because some of the origins are geographically far from, whilst other are geographically close to China. As discussed in Chapter 5, the four origins are from four of the continents in the world and represent the most important tourists' generating markets for China from their respective regions. These two facts mean that different cultural and geographic varieties have been widely represented in this research.

#### 6.4.3.3 Sampling locations

For a spatial research, spatial considerations of sampling are important. Sampling over a large area or from a much dispersed population could produce a very precise sample though it could be very costly. But theoretically, the use of a large locational set is not necessarily efficient because tourists may not consider all the alternatives (Ben-Akiva and Lerman 1997). A common solution is to use a sample which is deliberately grouped in a convenient and representative number of small areas, i.e. to divide the sampling locations into different groups and decided that the sample will only be drawn from a representative site in each group. This method is called geographic 'cluster sampling' (Dixon and Learch 1977). In order to obtain an efficient sample, clusters should be selected to be as internally heterogeneous as possible, and representative of the characteristics of the population.

Based on this principle, the questionnaires will be distributed in Beijing Shanghai and Guangzhou which represent the three non-overlapping geographical clusters – the Northeast, Middle east and Southeast tourism regions. As the interior region is an insignificant tourism market, no sampling location is considered there. Additionally most of the information relating to tourists' travelling propensities to this region can be obtained from the data collected in the three main tourism regions. Approximately equal numbers of respondents needed to be selected from each of the three geographical strata so that the sample will not be biased toward any of the stratum. In each of the three sites, a set of popular tourist attractions also need to be selected for distributing questionnaires.

The advantage of using this sampling approach is that the three locations are the main tourism destinations representing a diversity of tourism resources and tourist arrivals. It is also based on the same consideration for the choice alternatives for the dependent variables of the logistic regression model. It is also less expensive to obtain a stratified random sample in comparison to a simple random sample. It is a method to control bias in case a particular group of tourists, from a particular location, responded more than those from other groups or locations.

#### 6.4.3.4 Estimation of the sample size

Generally, the sample sizes of most survey research is determined by known or accepted theoretical practice or research experience. There are some basic principles in determining sample size for tourism studies. The first principle is the traditional statistical model. The formula used for calculating sample size takes the following form (Dixon and Leach 1977):

$$n = \frac{Z^2\sigma^2}{e^2}$$

Where

$n$= estimated sample size

$e$ = the allowable error term

$Z$ = the level of confidence in the sampling process

$\sigma^2$ = the variance in the population.

The limitation is that although the variance could be estimated on the basis of previous research or a pre-test from a small sample of the target population, it is usually not easy to estimate the appropriate sample size without the knowledge of the population variance. Dixon and Leach (1977) have proposed a table for estimating suitable sample size (see Table 6-2).

**Table 6 - 2 Estimated sample size**

| Confidence Limit (±%) | Confidence level 99% | Confidence level 95% |
|---|---|---|
| 1 | 16587 | 9604 |
| 2 | 4147 | 2401 |
| 3 | 1843 | 1067 |
| 4 | 1037 | 600 |
| 5 | 663 | 384 |
| 6 | 461 | 267 |
| 7 | 339 | 196 |
| 8 | 259 | 150 |
| 9 | 205 | 119 |
| 10 | 166 | 96 |
| 15 | 74 | 43 |
| 20 | 41 | 24 |

Note: Sample sizes needed to estimate population values with given levels of confidence, assuming a variability of 50%, i.e. the standard deviation is 50% of the mean, and a very large population. For a complex sample design, the confidence limit can be set to about ±6%; and confidence level as 95%.
Source: Dixon and Leach 1977.

Another principle that can be applied to estimate a sample size is to use the qualitative approach, which has been widely used to make an approximation to the desired sample size. The following factors based on relevant research experiences are normally considered:

1) the nature and objectives of a research
2) the types and numbers of variables used (Malhotra *et al.* 1996)
3) the types of analyses designed
4) the response rate
5) research resource constraints
6) the pre-test results
7) the number of cultural groups in comparison

Item seven in the above list relates to a special consideration in estimating sample sizes for a cross-cultural research. There is a required sample size for each demographic 'cell' of cross-cultural data in order to guarantee a balanced sample size from each of the cells. A rule of thumb of about 50 to 100 cases per cell has been suggested depending upon the importance of the category (Baker *et al.* 1994: 4).

It is normally accepted that the larger the sample size, the more the confidence in any inference. Therefore, research tries to collect as many samples as possible under the resource constraints. However, increasing sample size will not necessarily increases the validity of a research and could be very costly. There is a diminishing effect as sample size increases, i.e. the increase in reliability decreases quite rapidly with increasing sample size (Richards and Ben-Akiva 1975; Richards 1979; Baker *et al.* 1994). Also, it has discovered that in cross-cultural comparison, when sample sizes are too large, even extremely small differences can be statistically significant (Albers-Miller 1996). Based on these points, and considering the suggestion made by Dixon and Leach (1977) that, for a complex survey design, the confidence limit can be set to about ±6%; and confidence level as 95% (see Table 6-2), the target sample size is set about 300. Data will be collected from the three locations in the three main tourism regions, and from international tourists of the four places of origin, i.e. about 100 samples from each region and less than 100 from each tourist group.

#### 6.4.3.5 Sampling method

The objective in considering sampling method is to find a sampling strategy that minimises the variance of some estimators subject to implicit or explicit cost constraints. The sampling method of the SDT studies normally includes en-route, destination-based and origin-based sampling. Destination-based sampling is a more cost efficient procedure for collecting point-to-point travel data because by sampling at destinations, only participants in the relevant activities are surveyed but their origins are likely to be spatially diffused. En-route and origin-based approaches cannot guarantee a precise concentration of a type of tourists. Also sample sizes can be large and the cost of collecting efficient cross-cultural samples in different geographical locations enormous.

Sample will be collected in Beijing, Shanghai and Guangzhou. Tourists will be sampled by their places of origin. The sampling method of this research can be seen as a multistage stratified and geographically clustered random sampling method (Bailey 1982; Dixon and Learch 1977; Saunders *et al.* 1997). In order to assure administration equivalence of the research, the researcher will be the distributor of all the questionnaires because multiple administrators can cause distribution bias in the research instruments during data collection. All the main summer-autumn months should be sampled because the tourist peak season in China is from August to October each year. Self-completion questionnaires will be distributed to tourists by the researcher, and then mailed back to the appointed address.

## 6.5 THE PILOT STUDY

Before a research is finally implemented, a researcher usually faces an uncertain and unknown situation. Therefore in the sample design phases the researcher's judgement plays a significant role and biases might be easily introduced. However, a preliminary small-scaled pilot study can assist significantly by detecting these uncertainties and unknowns and exploring and reducing the influence of various method biases. This research has employed a pilot study to satisfy the following three objectives – to assess the techniques for holding the survey instrument as well as the survey and make amendments as necessary; to provisionally understand the profile and the general spatial characteristics of international tourists' travelling within China; and to evaluate the data analysis strategy.

### *6.5.1 Survey method*

The pilot study was initially designed in English, and then translated into Chinese, Japanese and Korean. Tourists were given the chance to choose from all the options the most comfortable language to use. The sample was stratified by five places of origin – America, the UK, Japan, the GCRs and South Korea. The pilot questionnaires were distributed to tourists travelling within China. The survey took place during the winter time of January to February 2001. Although it was not the peak tourism season, it was the Chinese Lunar New Year festival, which is similar to Christmas in Western countries; tourist traffic were relatively high during this period. The field work was carried out by the researcher herself at three different types of location in the capital of China – Beijing. They were a tourist accommodation, a travel agency and a well-known tourist resort – the Forbidden City. Each questionnaire was accompanied with an addressed and stamped enveloped in which a requirement was stated on the cover page of the questionnaire to return the answers preferably before tourists returned to their origin. Tourists travelling in small group were approached individually. Tourists travelling with a large tour group were approached with a control on the number of people answering the questionnaires, so that homogeneous answers from one group were avoided. It normally took about 5 minutes for the respondents to answer the questionnaire, but could also be dependent upon the respondents' own capabilities. The researcher was also present when some of the questionnaires were completed at the site. This has helped to investigate the vague or unclear questions and assess the ability of tourists to interpret the questionnaires.

The target sample size was set at 100 respondents for the pilot study. A total of 130 copies of the questionnaires were distributed, and 70 mail-back copies were returned. However, some cases were finally rejected and 29 usable questionnaires were left resulting in an overall 22 percent return rate. The reasons for eliminating some of the cases were as follows:

1) Travel other than leisure and VFR purposes;
2) Too many missing answers and gap and inconsistency in the information answered;
3) Non-study origins: Because in the pilot study, one purpose is to test the choice of tourists' places of origin, questionnaires have been given to tourists other than the pre-considered types, in order to inspect the feasibility of involving more groups of tourists. Some Australasian tourists were given questionnaires because they could answer in English; however their number is too limited. Some European tourists were also involved using English questionnaires, but for precise data collection, they need to answer the questionnaires using their own languages.

### *6.5.2 Tourists' profile*

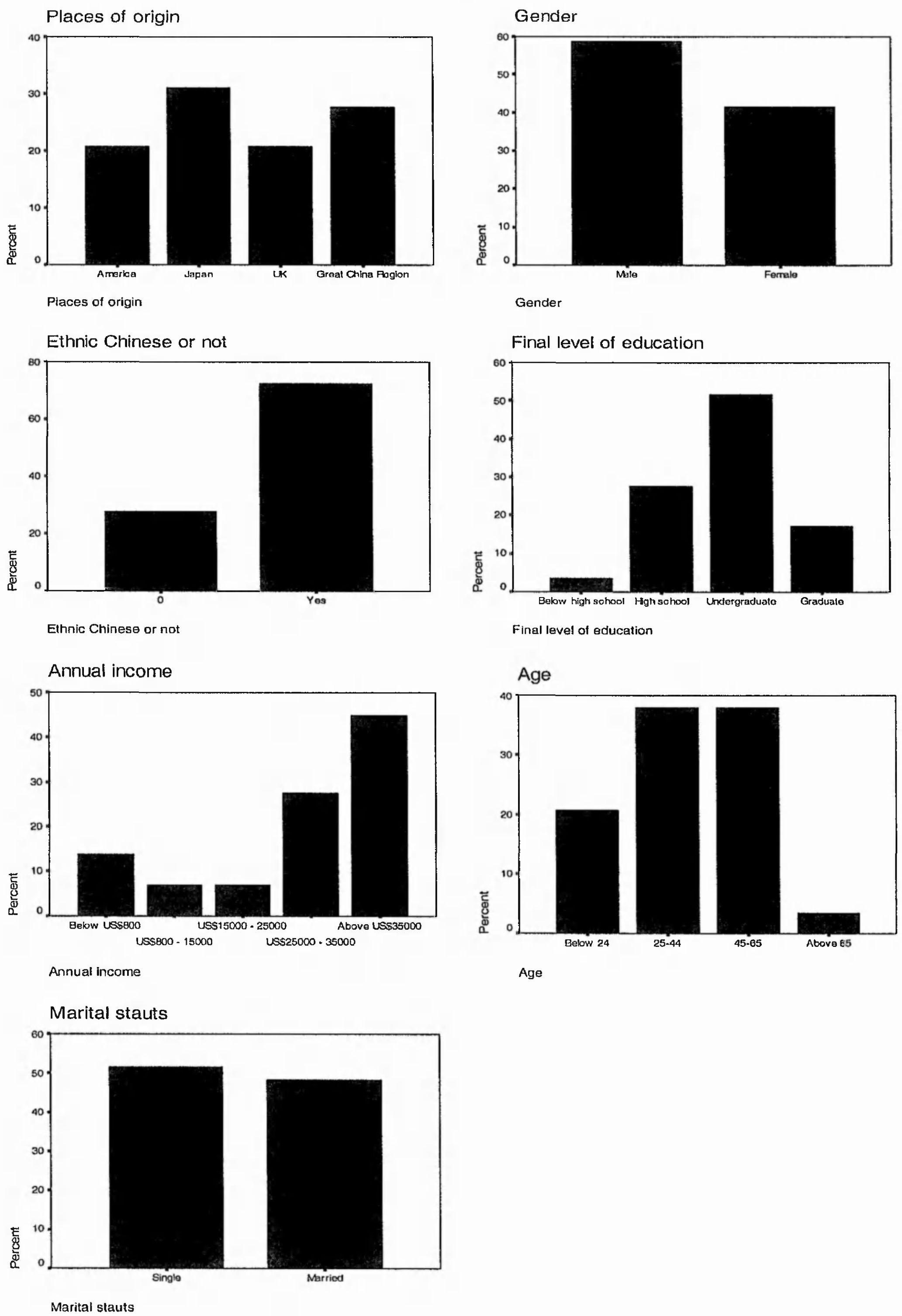
The respondents were not very balanced with regard to their gender. Based on CNTA's (2003a) survey, China normally attracts more male (about 64.5%) than female (about 35.5%) tourists, and more middle and up aged people than youth (see Table 6-3). Therefore the share between male and female respondents is considered acceptable. In the same vein, the percentages of the tourists of different age categories are not at odds with the national average. Also, about equal number of tourists are single and married. Age, income and educational level showed balanced results. The majority of the tourists had higher than high school education (73%). Income levels are concentrated on above US$25,000.- (72.4%). Among all the 29 usable questionnaire respondents, 20.7 percent are American and British tourists respectively, 31 percent of Japanese tourists and 27.6 percent of tourists from the GCRs. Among them, about 72.4 percent are ethnic Chinese and 27.6 percent are non-ethnic Chinese. That means most of the respondents have an ethnic Chinese background despite their nationality. This suggests that cross-cultural research using nationality can be dubious. Figure 6-4 shows the profile of the respondents.

**Table 6 - 3 Foreign visitor arrivals by age and gender, 2000**

| ITEM | Visitor arrivals | % total |
|---|---|---|
| TOTAL | 10 196 930 | 100.0 |
| UNDER 14 years | 357 167 | 3.5 |
| 15-24 years | 834 065 | 8.2 |
| 25-44 years | 4 965 831 | 48.7 |
| 45-64 years | 3 440 020 | 33.7 |
| OVER 65 years | 599 847 | 5.9 |
| MALE | 6 576 864 | 64.5 |
| FEMALE | 3 620 066 | 35.5 |

Source: CNTA (2003a).

## Figure 6 - 4 Profile of the questionnaire respondents

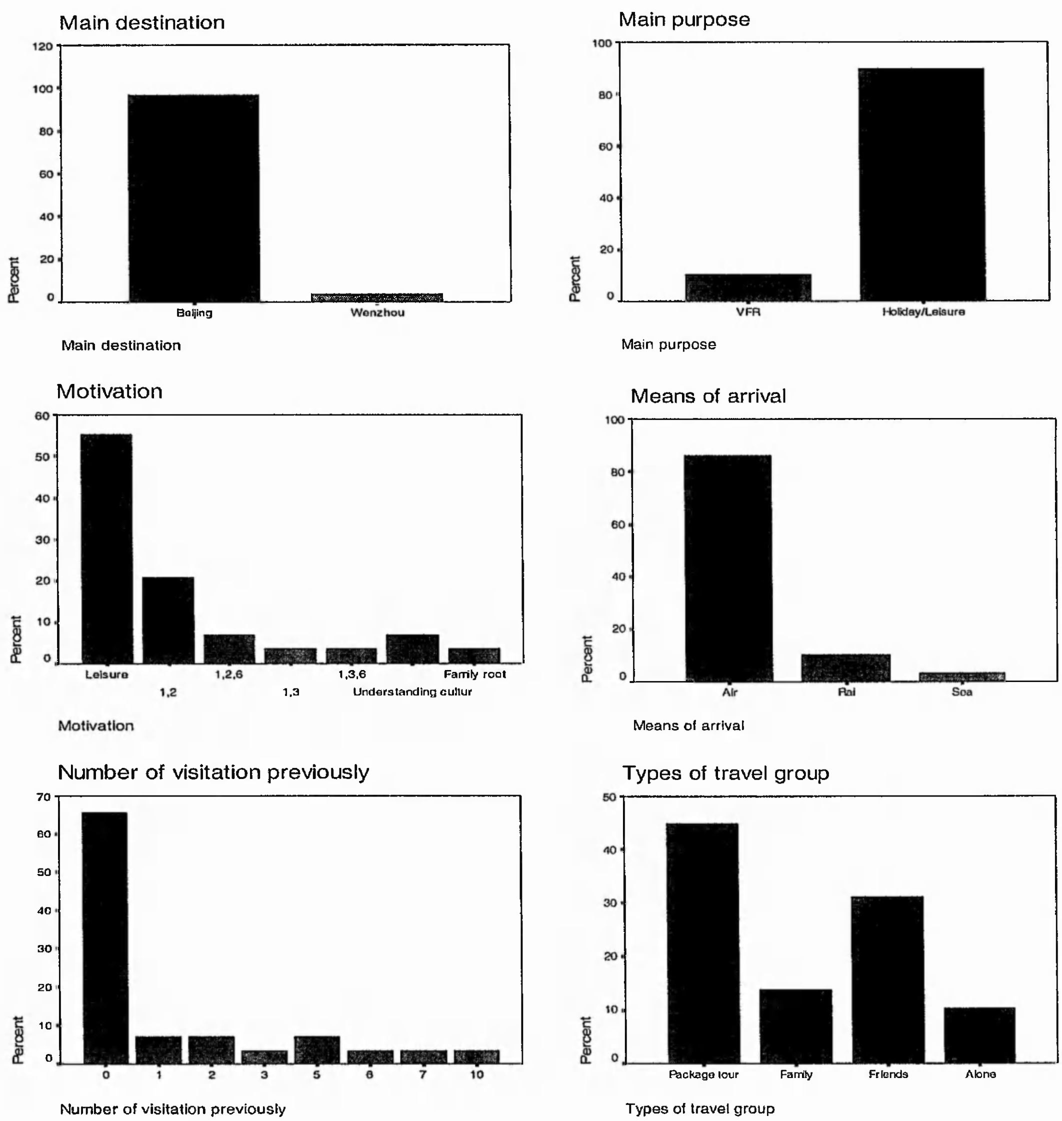


### *6.5.3 Trip characteristics*

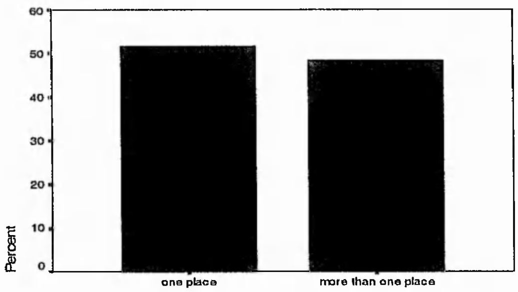
Among the total 29 usable questionnaires, about 89.7 percent of the tourists travelled for the purpose of holiday/leisure; about 10 percent were for the purposes of VFR. Similar to this attribute is the motivation for tourists travel which is coded as 1 = Leisure, 2 = Understanding culture; 3 = Family root; 4 = Business; 5 = Education; 6 = Shopping; 7 = Sports; 8 = Others. The majority of the respondents undertook their journey for the purposes of leisure and understanding culture; shopping and seeking family roots had relatively significant proportions as well. The majority of them arrived by air (86.2%). Linking this figure to the figure of people who chose Beijing as their entry point (75.9%), the high percentage of the tourists using air travel might be explained. Shanghai, Tianjin (in Hebei province, near Beijing) and Guangxi (Guilin) held a relatively high proportion (6.9% respectively). Another entry point is Guangzhou. Relating to this feature of Beijing is that almost all of the respondents selected Beijing as their major destination in China (96.6%). This clearly suggests that entry points and the major destination choices are linked to each other. With regard to the types of travel group tourists used, tourists' choices were not concentrated on one type of method. About 44.8 percent of them arrived by packaged tour, a similar percentage of tourists arrived with friends and relatives (44.8% altogether); and less then 10 percent of tourists travelled alone.

The average stay of the tourists in their first entry point is 3.93 and average stay in the whole country is 7.90 days. About equal numbers of tourists chose single and multiple destination travel (51.7 and 48.3% respectively) with the former slightly higher. If the entry places and the main destination choices could not show strong characteristics because they are too biased toward Beijing, the 2$^{nd}$ places visited by the tourists showed some patterns. After entry points, tourists liked to visit Xi'an most (20.7%). Other 2$^{nd}$ destinations visited include Beijing (all came from Tianjin), Guangzhou, Shanghai, Harbin, Henan and Zhejiang. Despite Guangzhou and Shanghai, the other destinations are all 2$^{nd}$ tier tourism provinces rich with tourism resources (refer to Section 5.3.4). The departure points of the tourists are very concentrated. The majority of them exited from Beijing (75.9%), then Shanghai (13.8 %) and Tianjin of Hebei province (6.9%).The average number of place visited is 2.10. Figure 6-5 shows the trip characteristics of the respondents. The majority of the tourists have not visited China before (65.5%). The highest proportion of trip expense is above US$1,000.-, the 2nd highest is between US$500.- to US$ 800.-.

**Figure 6 - 5 Trip characteristics of the questionnaire respondents**

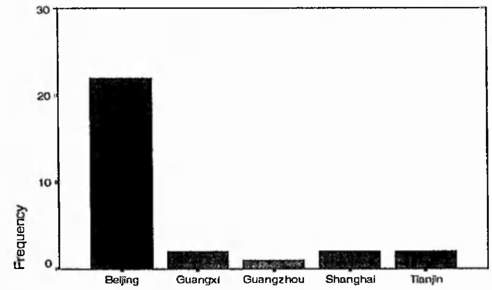


Single versus multiple destination



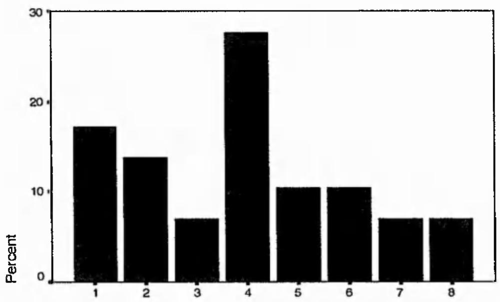

Single versus multiple destination

Entry points



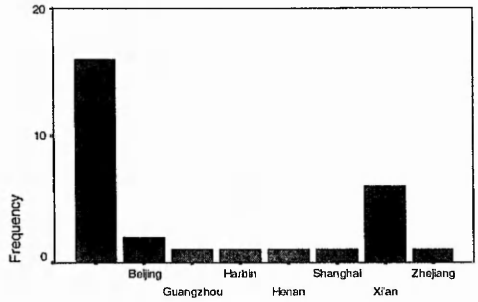

Entry points

Duration of stay in the 1st place



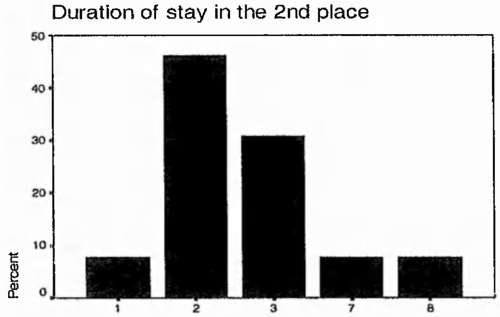

Duration of stay in the 1st place

2nd place visited



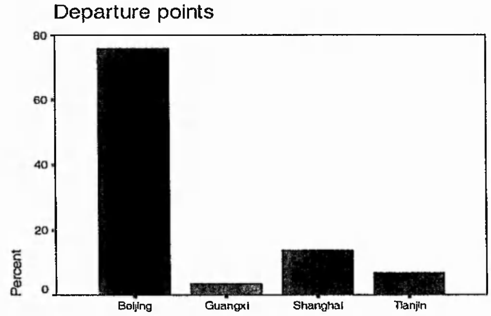

2nd place visited

Duration of stay in the 2nd place




Duration of stay in the 2nd place

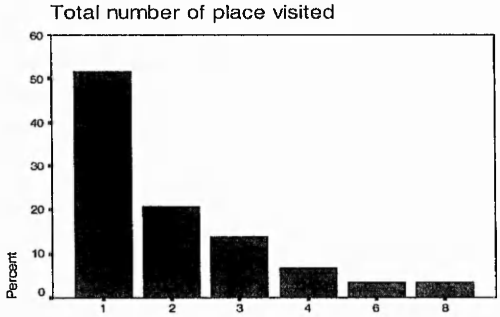
Departure points




Departure points

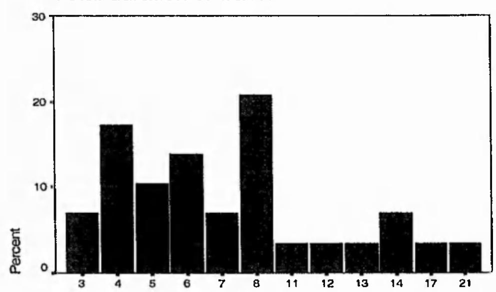
#

Total number of place visited

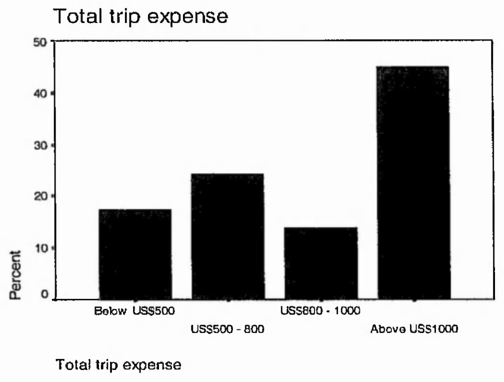



Total number of place visited

Total duration of travel




Total duration of travel




### 6.5.4 Cultural characteristics

Except for question 13, from question 9 to 14 in the questionnaire, all the questions ask about the tourists understanding of Chinese culture and their perception about the cultural differences between their own and Chinese culture. Factor analysis was then conducted on these 5 questions with 8 attributes in order to summarise the underlying dimensions between these questions. The analysis revealed three factors that are representative of the cultural characteristics of the tourists (see Table 6-4 and Figure 6-6). In factor 1, the attributes loaded into it are all questions about tourists' understanding of Chinese culture, and their perceived differences between Chinese and their own culture. Factor 2 and factor 3 contain all the questions regarding tourists' perceptions about Confucian cultural dimensions. They are 'respect for authority' and 'protect face value' in Factor 2; and 'maintaining harmony' and 'adhere to social norm' in Factor 3. The eight attributes are all neatly loaded into proper factors. They reflect the three attitudes which can be named by the attributes loaded into them – 'Culture', 'Respect' and 'Harmony'. The factor analysis revealed a reasonable result and testified that the design of the cultural and cultural differences questions is feasible, and can be used in the fieldwork without any significant changes.

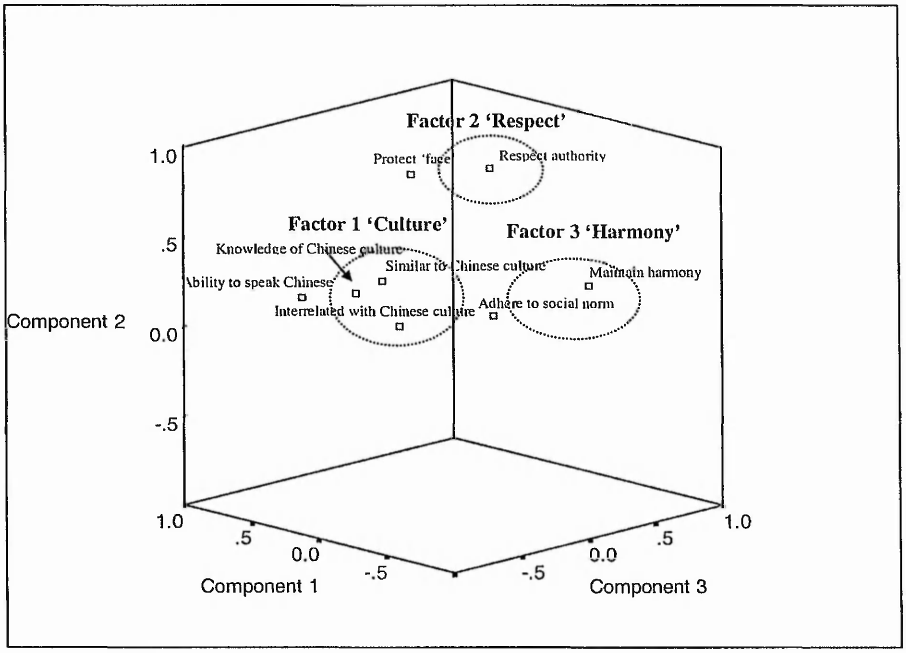
**Table 6 - 4 Component matrix of factor analysis**

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Ability to speak Chinese | **.888** | 3.719E-02 | -.237 |
| Know Chinese culture | **.710** | 5.313E-02 | -1.458E-02 |
| Similar to Chinese culture | **.789** | 5.352E-02 | .263 |
| Interrelated with Chinese culture | **.725** | -.198 | .330 |
| Respect for authority | -.179 | **.901** | 9.584E-02 |
| Protect 'face' | .196 | **.836** | -.113 |
| Maintaining harmony | -.126 | 8.678E-02 | **.883** |
| Adhering to social norm | .382 | -.136 | **.678** |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

**Figure 6 - 6 Component plot in rotated space of factor analysis**

Component Plot in Rotated Space




## *6.5.5 The feasibility of the survey and data analysis strategy*

The final aim of the pilot study is to test the feasibility of the survey strategy, assess the techniques and instrument for holding the survey and to predict the difficulties and to find out solutions. The location considerations of the data collection were the main concern. Though Beijing was the only location in the pilot study due to resource constraints, it was recognised from the examination in Section 6.5.3, that the three sampling locations designated were essential for this research because questionnaires collected from one collection in the pilot study are clearly biased.

Also, a variety of tourist attractions in each of three cities selected had initially been considered as feasible sampling sites. However the pilot study identified that some of them could not be easily used to obtain balanced types of tourist information. For example tourist hotels normally only give information about packaged tourists, or tourists who have relatively higher incomes in China. Due to similar reasons the choice of travel agency was not satisfactory either. Tourist resorts of different types proved to be the best way to collect the best balanced responses, and some of them were kept as survey locations for the real fieldwork.

Another purpose of the pilot study is to test the survey instrument. Necessary amendments are to be made based on the pilot information. The questionnaire questions and scales were evaluated with respect to their applicability for the populations of tourists, their reliability, consistency, equivalence, and respondents' understanding and interpretation of the questions, terminologies, etc. The focus was put on checking if there was bias in the information provided by the tourists or not. The pre-test of the questionnaire has greatly detected and corrected the difficulties of cross-cultural comprehension.

The design of the questionnaire (see Appendix Four) in the real fieldwork was basically the same as the one used in the pilot study. However as the result of the pilot study, some alternations have been made to the final questionnaire as well as the technique used to carrying out the survey. The basic length of the questionnaire was not reduced. The most important alternations were as follows:

1) Survey conducted only in one city was confirmed to be not enough, the field survey needed to be in more than one locations;

2) Cultural attribute questions have been tested, and it has been confirmed that there were no significant misunderstandings of them. The research discovered that some glossary terms, such as 'face value' have reached commonly accepted understanding which was quite unanticipated. However, in order to further clarify the term, a supplement containing a concise explanation was attached to final version of the questionnaire. Rephrasing and some necessary explanations of some of the cultural terms were given to assist understanding;
3) A geographical question was added in order to elicit a cognitive distance between tourists' origins and the main destination choices within China. This was because from the pilot study, it was realised that zonal distance is difficult to measure in the real tourism situation; for tourists from abroad it is easier, but for distances travelled within China it is difficult. In order to depict a more objective measurement of distance, obtain relative rather than absolute distance, a behavioural approach was considered. It was numbered question 15 and put into Part Two in the questionnaire and has a 5-point Likert scale as well; 1 = very far; 2 = far; 3 = medium; 4 = not very far; and 5 = not far.
4) Demographic questions, such as income levels, educational levels, and age groups were regrouped;
5) Some minor changes in the wording and structure of the questionnaire were conducted.

The response rate in the pilot study was about 22 per cent, although it was not very high, this was able to give an idea of the number of the questionnaires required for future fieldwork. The pilot study also helped to evaluate the feasibility of the data analysis techniques. The methodology of the research was reviewed. The pilot study tested the plausibility of the choices of the tourist groups for the cross-cultural study. Because of some practical considerations, such as language barriers, and locational considerations, some of the original choices of the origins of the international tourists were removed from the fieldwork, namely the South Korean tourists. Extending the survey to include some other types of tourists such as Russian, and some European tourists was pre-considered at the initial stage of the survey design. However, this was considered impracticable because of practical and theoretical difficulties due to similar reasons for the elimination of the South Korean tourists. The final version of the survey design thus finalised includes tourists from America, the UK, Japan and the GCRs. The time frame of the fieldwork was also decided to be the months from August to September, which is known to be the high tourism season in China. Because the pilot study data was collected in the off-peak tourism season it is likely that the choices of international tourists might not be broadly represented.

Due to the lack of qualified and sufficient samples, the tests using more complicated techniques could not be carried out. Overall, the pilot study satisfied the three objectives. It helped to revise the questionnaire, to readjust the research design in terms of the cultural groups involved, and help to rectify the sampling method of the data analysis.

Three tourism regions in China represented by the three gateway cities – Beijing, Shanghai and Guangzhou have been finalised as survey locations. The destination choice is then treated as a region instead of a set of individual destinations. This makes the choice set more condensed in facilitating the discrete data analysis (refer to Section 6.3.3). It is also helpful in data collection, because the data could not really be collected in the whole country in this research.

## 6.6 SUMMARY AND CONCLUSIONS

It is important that the researcher needs to consider the methodological choices available in social science research and the links between ontology, methodology and social practice. This chapter therefore covers several elements related to the methodological and philosophical justification of the research design. In summary, this research contributes to the body of knowledge on the conceptual and empirical results of the cross-cultural SDT within a destination country, and contributes to tourism regional studies in China. An attempt has been made to paradigmatically explain that the stance of this research is not in any extreme view, but in the middle of the interpretivist and positivism views. Relating to this is the choice of quantitative and qualitative approach of data analysis and pseudo-etic approach in cross-cultural perspective. Both paradigms are acknowledged as having their own strengths and weaknesses, but a complementary understanding achieved through these two perspectives could strengthen a research's scientific value considerably. Based upon this justification the research process is considered as abiding by the rule of scientific research. The second part of this chapter embarked on a rigorous and detailed explanation of the design of the data collection and data analysis strategies. The basic method of data collection is a questionnaire survey. The principle of data analysis method incorporates three levels progressing from an exploratory analysis of basic characteristics of the cross-national differences of the SDIT, to a causal analysis of the cross-cultural differences of the SDIT.

A detailed examination of the pre-test through a pilot study was presented. It was recognised that the pilot study was valuable in making amendments to the research strategy, questionnaire design, the choices of tourists' places of origin and the adjustment of the survey and data analysis methods. On account of all these, the research work can be carried forward to the final stage – the empirical study of this research. The next two chapters – Chapter 7 and Chapter 8 will be dedicated to this. The detailed discussion of the research findings will be presented in Chapter 9.

# 7 DATA ANALYSIS OF CROSS-NATIONAL DIFFERENCES IN THE TRIP CHARACTERISTICS OF TOURISTS

## 7.1 INTRODUCTION

The aim of this chapter is to provide the details of the fieldwork survey, give a general and preliminary examination of cross-national differences in the trip characteristics of tourists travelling within China. It answers some research questions and raises more issues. The survey was conducted based upon the design described in Chapter 6. This is explained in Section 7.2 which takes account of the sampling frame and survey method, locations, time, distribution channels, etc.

Following the introduction of the survey details, this chapter will provide a factual summary of information of the data collected including the age, gender, marital status, ethnicity, places of origin, income levels and final levels of education of the respondents (refer to Section 7.2). This gives readers a general understanding of the data quality, and the insight into the characteristics of the survey respondents.

Next, a basic data analysis of the general characteristics of the SDIT within China is conducted. It focuses on the relationship between a variety of trip attributes of tourists and their places of origin. These trip attributes are discussed from fifteen aspects, including main destination choices in China, main motivation for travelling to China, types of transport on arrival, types of travel group, entry points, single or multiple destination travel, travel route, 2$^{nd}$ place visited, termination of travel, durations in the entry point, main destination and the whole country, number of places visited, number of previous visitations and travel expenses (refer to Section 7.3). These points are considered to represent the main characteristics of the patterns and directions of a tourist's travel and are important in understanding the cross-national/cultural differences of the SDIT within a destination country – China. The data analysis also includes an examination of certain basic theoretical notions of cross-national SDIT within a country, such as central-peripheral theory, distance decay function and cross-cultural theories. Various descriptive, univariate and bivariate statistical techniques are used. The results of the research are based upon various functions of the SPSS software programme version 11.

Overall, this chapter will serve only as the first stage of the data analysis of this research. Its main aim is to observe the patterns and directions of the SDIT, and identify relationships between variables in interest, primarily national and geographical distance variables. The findings will be of use to develop more thorough and in-depth analysis in the following chapter. In the next chapter, some of the trip and tourist' social demographical attributes will be used in the discrete analytical models introduced in Chapter 6 (refer to Section 6.3.4) so that the interactions and the collective effect of them on the SDIT can be examined. It also has theoretical implication and practical purpose of its own. Together, Chapter 7 and Chapter 8 will serve as the essential empirical investigations of this research. This chapter will end with a concluding remark, but vigorous discussion of the key findings will be presented in Chapter 9.

## 7.2 THE SURVEY AND PROFILE OF THE RESPONDENTS

Surveys are probably the most important ways of obtaining information for tourism analysis (Smith 1995). There are many possible ways of carrying out a survey. This research has used a mail back self-completion questionnaire survey. This type of survey is a common method of data collection, especially where attitudinal and behavioural data are required. The main advantages of this survey method are that it is less costly, efficient and easy to control (refer to Section 6.4.1 and 6.5.5).

The survey was executed following the strategic design in the research methodology in Chapter 6. It was a destination-based sampling method. The questionnaires were distributed to the respondents while they were travelling within China. The data derived from the research survey is based upon a multistage stratified and geographical clustered sampling method. The tourists were sampled by the four nationalities/ethnicity of this research choice in three locations – Beijing, Shanghai and Guangzhou. Within each survey group and study location, the samples were selected within each stratum at each location. The justification of the sampling method is to be found in Chapter 6 (refer to Section 6.4 and 6.5).

During summer-autumn tourist peak months in China, from the end of July to the end of September 2001, the survey took place and the questionnaires were administrated by the researcher to the tourists for self-completion. About one to two weeks were spent in each of the three sampling cities to distribute the questionnaires. The questionnaire required approximately 5-10 minutes to complete and elicited information on a variety of designed questions addressed by this research. Some important tourist resorts in each of the three locations were used as sampling sites. In Beijing, they were the Forbidden City, Yong He Buddha Temple and Chaoyang Acrobatic Theatres. In Shanghai, they were the Huangpu River and the Bund Street, the Yuyuan Garden and the Nanjing Road; in Guangzhou, they were the Colony Island and the Ancestral Temple of Chen Family. These places are the most popular tourist resorts attracting tourists of the most dispersed types in each of the three cities.

An initial target sample size of about 300 was chosen (refer to Section 6.4.3.4). In the final fieldwork, a total of 921 questionnaires were distributed, 386 in Beijing, 301 in Shanghai and 234 in Guangzhou. The balance of the numbers of the questionnaires distributed in each study location is satisfactory considering that each of the cities has different levels and varieties of international tourist arrivals. The survey also took account of the fact that Beijing has the widest and most balanced variety of foreign arrivals; it is followed by Shanghai; Guangzhou that has the most biased tourist arrivals, mainly Compatriots and/or ethnic Chinese tourists. A slight difference between the numbers of the questionnaires distributed in each of the cities was accepted in order to obtain more balanced responses from each of the locations.

A total of 315 questionnaires were returned producing an overall response rate of around 34 percent; a higher response rate than expected based on the pilot study. The main reason might be that the survey method has been altered after the pilot study in order to obtain the most cost-effective responses. Respondents who were not within the designed survey frame were not given questionnaires, such as the European tourists and South Korean tourists. Also questionnaires reached a wider variety of international tourists in the real fieldwork than in the pilot study, their different attitudes toward being involved in the survey might have helped to increase the response rate.

Two background questionnaire questions are used to screen for appropriate research subjects. The first criterion is the purposes of travel of the tourists. Two types of respondents are considered in the research. They are those who travelled for the purpose of holiday/leisure and/or visiting family/friends (VFR). Answers other than these two categories were eliminated. The second criterion is places of origin. Four places of origin are the focus of this study – America, the UK, Japan and the GCRs. The three tourist groups from Hong Kong and Macau SARs, Taiwan and Southeast Asian countries were categorised as one category because almost all of them were ethnic Chinese. These three regions were summarised as tourists from the GCRs (refer to Section 5.4.1.4). The reason for combining them is that all of the tourists from the three origins answered 'Yes' to the question of 'Do you think you are ethnic Chinese?' except for one from a Southeast Asian country who answered 'No' to this question. However he still answered 'Yes' to another ethnic related question 'Do you have any ancestors or relatives who are/were Chinese?' Therefore all tourists from these regions as well as their exceptional one are treated as ethnic Chinese tourists under the rationale that they were familiar with and/or had a Chinese cultural background. However, it should be born in mind that places of origin can not completely represent tourists' cultural backgrounds.

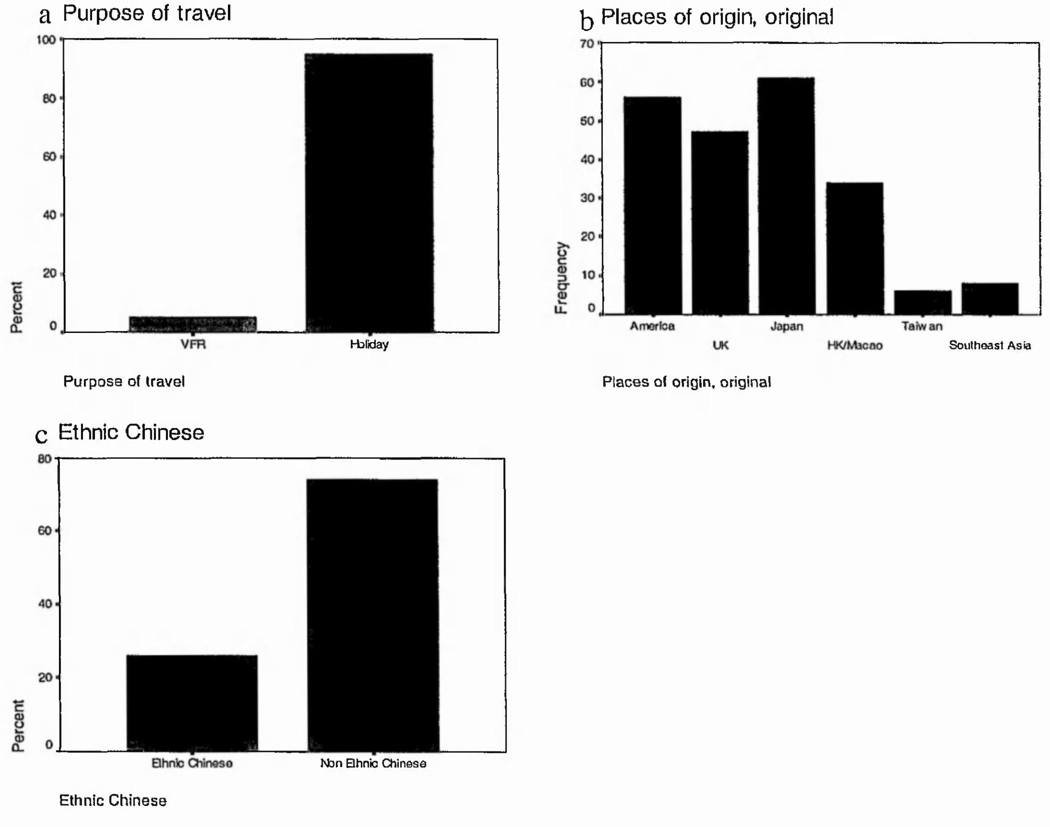
Although the distribution of the questionnaires has been constrained by these two criteria, some unusable questionnaires were still returned. Questionnaires with incorrect answers (95 respondents) and significant missing answers (8 respondents) were eliminated from the data analysis. The final usable questionnaires are 212 reaching a 23 percent actual response rate. Although this figure is lower than initial expectation, it is acceptable considering that the ordinary response rate to mail surveys normally varies between 20 to 40 percent (Bourque and Fielder 1995; Nachmias and Nachmias 1992; Seddighi *et al.* 2001). Also the total number of questionnaires received exceeds the designed level of 300. In total, the shares of the two categories of tourists divided by their travel purposes were 94.8 percent travelling for holiday/leisure, and 5.2 percent for VFR (see Figure 7-1a).

Regarding the response rate of each of the tourist groups, it has been noticed that, in the fieldwork, tourists from different origins did not answer questionnaires with equal enthusiasm. American and British tourists were most willingly to be involved in the survey. They were followed by Japanese tourists; and tourists from the GCRs were the least likely to answer and/or return questionnaires. Therefore, although more questionnaires have been distributed to the last two groups of tourists; almost equal numbers of questionnaires were returned across all groups. Adding those from the regions other than the GCRs, of the total respondents 55 are ethnic Chinese (25.9%) and 157 are non-ethnic Chinese (74.1%). All together, the questionnaires were answered by 61 tourists from Japan, 56 from America, 47 from the UK and 48 from the GCRs. From these 55 ethnic Chinese respondents, 48 are from the GCRs, 3 from the America and 3 from Japan (see Table 7-1, Figure 7-1 b and c).

**Table 7 - 1 Ethnicity of the respondents by places of origin**

| Ethnicity | Places of origin | | | | Total |
|---|---|---|---|---|---|
| | America | UK | Japan | GCRs | |
| Ethnic Chinese | 5 (2.4%) | | 3 (1.4%) | 47 (22.2%) | 55 (25.9%) |
| Non Ethnic Chinese | 51 (24.1%) | 47 (22.2%) | 58 (27.4%) | 1 (.5%) | 157 (74.1%) |
| **Total** | **56 (26.4%)** | **47 (22.2%)** | **61 (28.8%)** | **48 (22.6%)** | **212 (100.0%)** |
| Have Chinese ancestor | 5 (2.4%) | | 3 (1.4%) | 48 (22.6%) | 56 (26.4%) |
| Not have Chinese ancestor | 51 (24.1%) | 47 (22.2%) | 58 (27.4%) | | 156 (73.6%) |
| **Total** | **56 (26.4%)** | **47 (22.2%)** | **61 (28.8%)** | **48 (22.6%)** | **212 (100.0%)** |

**Figure 7 - 1 Main profile of the survey respondents**




A break-down of the 212 respondents by all the other demographic variables shows that the sample is basically satisfactory and there is not a strong bias which can be seen as preventing further analyses. This is compared with the national average which is obtained from CNTA's (2003a) annual survey (see Table 7-2). Among the 212 respondents, 57.2 percent are male, and 42.8 percent are female. The majority of respondents have high school to postgraduate education. And 25-65 is the common age category of the tourists (77.8%). Regarding their marital status; 68.4 percent are married and 31.6 percent are single (see Table 7-3). Separating tourists' age, gender and martial status by their places of origin, it seems that tourists from the GCRs tend to be younger than those from America, Britain and Japan. In terms of gender, there is no major variance across the four groups, except that there are slightly fewer female tourists from the UK and the GCRs. In general, there is no evident inequality between female and male respondents. Although it seems that more respondents are married (68.4%), the balance of married and single tourists across the four places of origin is acceptable.

**Table 7 - 2 Foreign visitor arrivals by age, sex and occupation, 2000**

| ITEM | 2000 year | % total |
|---|---|---|
| Total | 10 196 930 | 100.0 |
| Under 14 years | 357 167 | 3.5 |
| 15—24 years | 834 065 | 8.2 |
| 25—44 years | 4 965 831 | 48.7 |
| 45—64 years | 3 440 020 | 33.7 |
| Over 65 years | 599 847 | 5.9 |
| Male | 6 576 864 | 64.5 |
| Female | 3 620 066 | 35.5 |
| Technician | 771 742 | 7.6 |
| Official | 488 351 | 4.8 |
| Clerk | 479 486 | 4.7 |
| Businessman | 1 742 138 | 17.1 |
| Server | 549 412 | 5.4 |
| Farmer | 34 363 | 0.3 |
| Worker | 490 635 | 4.8 |
| Others | 5 006 880 | 49.1 |
| Freeman | 633 923 | 6.2 |

Source: CNTA (2003a).

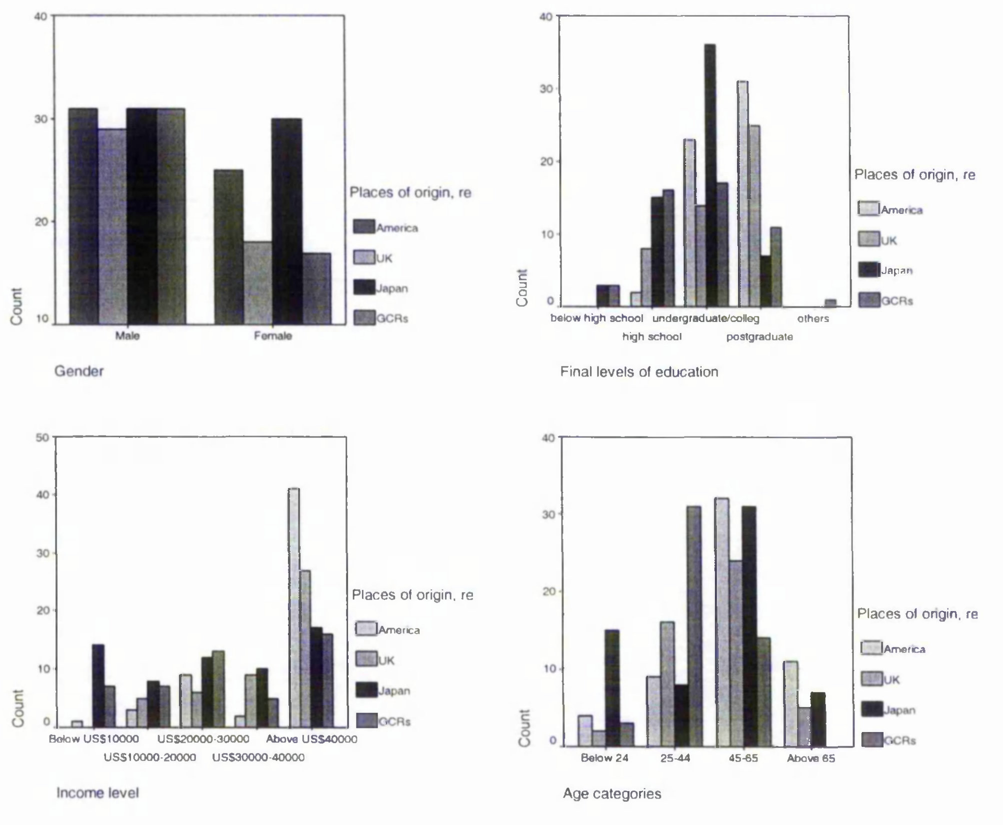
**Table 7 - 3 Demographic characteristics of the survey respondents**

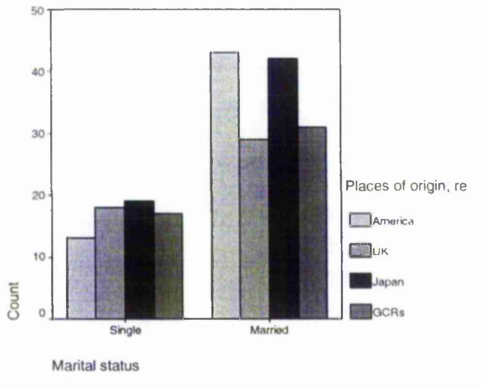
| *Categorical profiles* | *Description* | *Frequency* | *Percent* |
|---|---|---|---|
| Purpose of travel | Holiday and leisure | 201 | 94.8 |
| | VFR | 11 | 5.2 |
| Places of region | Japan | 61 | 28.6 |
| | America | 56 | 26.3 |
| | UK | 47 | 22.1 |
| | the GCRs | 48 | 22.6 |
| | - Hong Kong and Macau SARs | 34 | 16.0 |
| | - Southeast Asia | 8 | 3.8 |
| | - Taiwan | 6 | 2.8 |
| Ethnic Chinese | Yes | 55 | 25.9 |
| | No | 157 | 74.1 |
| Final levels of education | Below high school | 6 | 2.8 |
| | High school | 41 | 19.3 |
| | Undergraduate/College | 90 | 42.5 |
| | Postgraduate | 74 | 34.9 |
| | Others | 1 | .5 |
| Income levels | Below US$10000 | 22 | 10.4 |
| | US$10000-20000 | 23 | 10.8 |
| | US$20000-30000 | 40 | 18.9 |
| | US$30000-40000 | 26 | 12.3 |
| | Above US$40000 | 101 | 47.6 |
| Age categories | Below 24 | 24 | 11.3 |
| | 25-44 | 64 | 30.2 |
| | 45-65 | 101 | 47.6 |
| | Above 65 | 23 | 10.8 |
| Gender | Male | 122 | 57.5 |
| | Female | 90 | 42.5 |
| Marital status | Single | 67 | 31.6 |
| | Married | 145 | 68.4 |

Note: Valid number of samples is 212.

Pertaining to the respondents' income levels and final levels of education; they do not seem well balanced across the four places of origin. American tourists have the highest income levels followed by British tourists. This is reasonable considering that for these groups of tourists China is a long haul destination and therefore, it is more expensive for them to come than for tourists from Japan and the GCRs. Related to this are higher levels of education of American and British tourists. Japanese tourists are relatively high in their level of undergraduate/college education; whereas tourists from the GCRs have relatively low levels of education. The sample seems adequate between the respondents from different origins further data analysis can be conducted (see Figure 7-2).

**Figure 7 - 2 Comparison of respondents' age, gender, income levels and final levels of income by places of origin**






## 7.3 GENERAL TRAVEL PATTERNS OF INTERNATIONAL TOURISTS

The data analysis, as justified in Chapter 6, involves both qualitative description and quantitative exploration. It is divided into three levels. The first task is, at the first level of data analysis, trip characteristics such as entry and departure points of the international tourists, the intervening routes they follow, travel mode and motivation, and the temporal aspects of their stays, are examined. It aims to identify some key regularities of the SDIT, such as distance decay function, and central-peripheral hierarchical pattern. Elementary descriptive tools will be used because the structure of complex journeys and the emphasis of various dimensions of the SDIT are difficult to quantify. Some of the main trip attributes of the respondents are summarised in Table 7-4.

The analyses were conducted along a continuum of tourists' movement, starting from their main destination choices, entry points, transport on arrival, to their travel directions within the country. Unless specifically mentioned, all statistical tests were conducted at an alpha level of 0.05. Analyses at the second level are mainly cross-group exploratory analyses aiming to reveal relationships between the SDIT and the national/ethnic and geographical distance of tourists. This chapter deals with the first two levels of analysis.

## Table 7 - 4 Trip profile of the respondents

| Profile | | Frequency | Percent |
|---|---|---|---|
| Main destinations | Beijing | 129 | 60.8 |
| | Shanghai | 23 | 10.8 |
| | Guangzhou | 23 | 10.8 |
| | Yangtze | 15 | 7.1 |
| | Guangxi (Guilin) | 5 | 2.4 |
| | Shaanxi (Xi'an) | 4 | 1.9 |
| | Tibet | 3 | 1.4 |
| | Jiangsu (Nanjing) | 2 | .9 |
| | Yunnan | 2 | .9 |
| | Others (Frequency less than 2) | 6 | 2.8 |
| Main motivation | Leisure/Holiday | 195 | 53 |
| | Culture | 116 | 31.5 |
| | Seeking family roots | 7 | 1.9 |
| | Business | 7 | 1.9 |
| | Education | 11 | 3 |
| | Shopping | 27 | 7.3 |
| | Sports | 5 | 1.4 |
| | Others | 0 | 0 |
| Transport on arrival | Air | 191 | 90.0 |
| | Rail | 11 | 5.2 |
| | Motor | 6 | 2.8 |
| | Sea | 4 | 1.9 |
| Types of group of travel | Packaged tour | 129 | 60.8 |
| | Family | 37 | 17.5 |
| | Friends | 37 | 17.5 |
| | Alone | 9 | 4.2 |
| Entry points | Beijing | 105 | 49.5 |
| | Shanghai | 53 | 25.0 |
| | Guangzhou | 24 | 11.3 |
| | Others | 30 | 14.2 |
| Single vs. multiple destinations | Single | 59 | 27.8 |
| | Multiple | 153 | 72.2 |
| Main 2nd places visited | Shaanxi (Xi'an) | 33 | 22.3 |
| | Beijing | 22 | 14.9 |
| | Jiangsu | 20 | 13.5 |
| | Shanghai | 16 | 10.8 |
| | Guangxi | 13 | 8.8 |
| | Yangtze | 9 | 6.1 |
| | Northern China | 9 | 6.1 |
| Termination of travel | Beijing | 51 | 24.1 |
| | Shanghai | 50 | 23.6 |
| | Guangzhou | 27 | 12.7 |
| | Others | 25 | 11.8 |
| | Single destination | 59 | 27.8 |
| Travel route | Single destination | 58 | 27.4 |
| | Linear pattern | 95 | 44.8 |
| | Full orbit | 56 | 26.4 |
| | Partial orbit | 2 | 0.9 |
| | Abroad | 1 (Single destination as well) | 0.5 |
| Trip expense | Below US$500 | 26 | 12.3 |
| | US$500-800 | 34 | 16.0 |
| | US$800-1000 | 29 | 13.7 |
| | Above US$1000 | 123 | 58.0 |
| ***Continuous profiles*** | ***Mean*** | ***Mode*** | ***Range*** |
| Durations in the main destination | 4.49 | 3 | 29 |
| Durations in the country | 10.16 | 5 | 89 |
| Durations in the entry point | 3.83 | 3 | 29.5 |
| Number of previous visitations | 3.80 | 0 | 70 |
| Number of places visited | 3.11 | 1 | 12 |

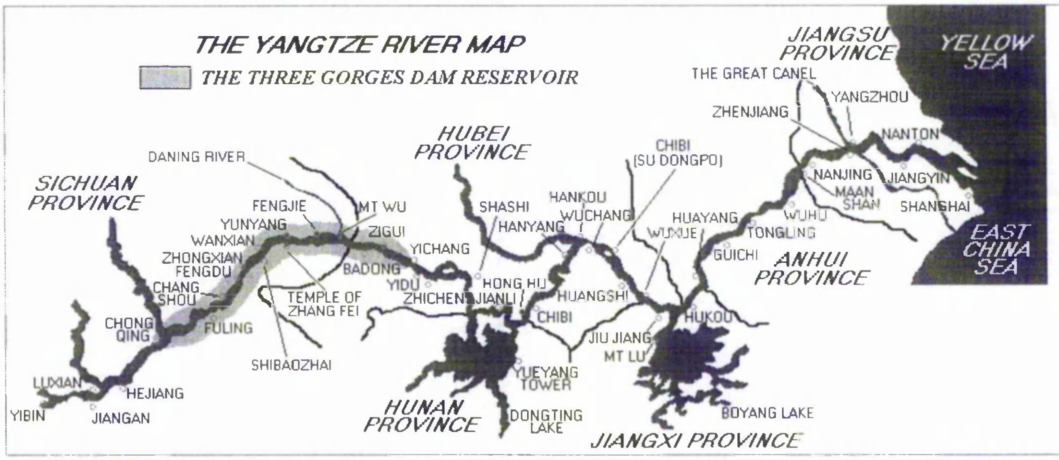
Note: 1. Number of valid cases is 212.
2. Total frequency of motivation: 368.

The third level of analysis which is a cause-effect analysis of cross-cultural differences in the SDIT within China is mainly hypothetic testing. It specifically aims to use the binary logistic models to identify the actual origin-destination configurations of international tourists and to detect the probabilities that tourists visit various destinations and the dependence of these visits on the cultural and geographic distance variables. The report of this analysis will be in the following chapter. The main working variables for the data analysis of these two chapters are listed in Appendix Five.

### *7.3.1 Main destination choices*

Regarding the main destination choices; each respondent was asked to name one destination as their main destination. However, they did not give answers in a consistent way in terms of the geographical scales of destinations. Some of them used provincial names of the destination; some of them used the names of a tourist city or a resort, such as Suzhou and Nanjing cities instead of Jiangsu province. Some also used the name of tourism resorts, such as Dunhuang instead of Gansu province; also Yangtze and Wuhan have been used interchangeably to represent the Yangtze River cruise tour through the heart of China between Chongqing (in Sichuan Province) and Wuhan (see Figure 7-3). For some tourists who answered Wuhan it has been recognised that this city was used as the starting point of their Yangtze River tour based upon their subsequent answers of other places they visited. Therefore, some alterations have been made in order to unify the answers.

**Figure 7 - 3 The Yangtze River cruise tours**

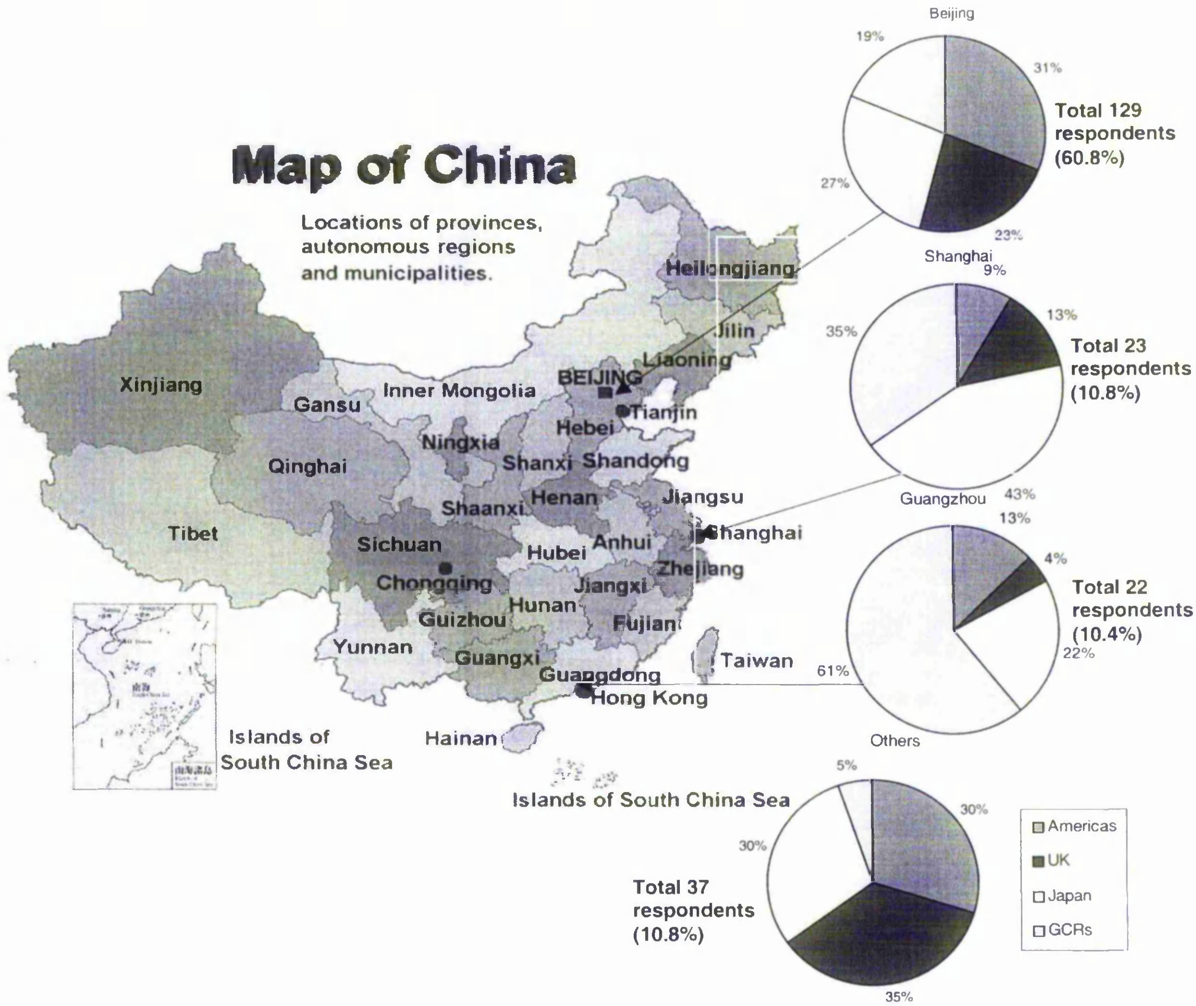



Map source: http://www.solidsoftware.com.au/Yangtze/map1.html

It was decided that all the answers to the question of main destination were represented by the provincial names except the three gateways. They were then categorised into four groups representing the three gateways which are respondent to the three tourism regions and one 'Others' representing all the main destination choices other than the three gateways (refer to Section 5.3.4 and 6.3.3). A variable was created and named DESTINAT. It was coded as 1 = Beijing, 2 = Shanghai, 3 = Guangzhou and 4 = Others.

As many as 60.8 percent of the total of 212 respondents chose Beijing as their main destination making this city the most visited place. It is followed by Shanghai (10.8%) and Guangzhou (10.8%). It is clear that Beijing is the most visited city compared to Shanghai and Guangzhou. All together the three gateways have 82.4 percent of the main destination choices of the respondents (see Figure 7-4, Table 7-5). This supports the important position of the three cities as the three major tourist attractions in China and not just simply as the international gateways.

## Figure 7 - 4 Market shares of international tourist arrivals in the three metropolises




## Table 7 - 5 Crosstabulation and chi-square of main destination choices by places of origin

| Main destination choice (Count & %) | Places of origin, regrouped: America | UK | Japan | GCRs | Ethnic Chinese from the GCRs: Hong Kong and Macau SARs | Taiwan | Southeast Asia | Total |
|---|---|---|---|---|---|---|---|---|
| Beijing | 40 (71.4%) | 30 (63.8%) | 35 (57.4%) | 24 (50.0%) | 14 (41.2%) | 5 (83.3%) | 5 (62.5%) | 129 (60.8%) |
| Shanghai | 2 (3.0%) | 3 (6.4%) | 10 (16.4%) | 8 (16.7%) | 5 (14.7%) | | 3 (37.5%) | 23 (10.8%) |
| Guangzhou | 3 (5.4%) | 1 (2.1%) | 5 (8.2%) | 14 (29.2%) | 13 (38.2%) | 1 (16.7%) | | 23 (10.8%) |
| Others | 11 (19.6%) | 13 (27.7%) | 11 (18.0%) | 2 (4.2%) | 2 (5.4%) | | | 37 (17.5%) |
| Total | 56 (100.0%) | 47 (100.0%) | 61 (100.0%) | 48 (100.0%) | 34 (100.0%) | 6 (100.0%) | 8 (100.0%) | 212 (100.0%) |
| ***Chi-Square Tests*** | Value | df | Asymp. Sig. (2-sided) | | | | | |
| Pearson Chi-Square | 36.891 | 9 | .000 | | | | | |
| Likelihood Ratio | 36.611 | 9 | .000 | | | | | |
| ***Symmetric measures*** | Value | | Approx. Sig. | | | | | |
| Phi | .417 | | .000 | | | | | |
| Cramer's V | .241 | | .000 | | | | | |
| Contingency Coefficient | .385 | | .000 | | | | | |

Note: 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.10. Number of valid cases: 212.

In order to further explore the data a chi-square test of the three gateway cities by the places of origin of tourists is provided (see Table 7-5). The hypothesis for the chi-square test was that international tourists from the four places of origin are likely to visit different destinations. Both of the two-sided chi-square statistics are smaller than 0.05, meaning that it is quite certain that the differences between each related category are not due to chance. These results imply that there is a relationship between places of origin and the main destination choices of tourists. In addition, symmetric measures show that the strength of the relationship is quite strong. Tourists from America and the UK are more alike; they prefer Beijing most (71.4% and 63.8% respectively), and they all have quite high shares in Others as well (19.6% and 27.7% respectively). British tourists seem to like to visit Others the most than any other groups of tourists. To compare with these, their shares in Shanghai and Guangzhou are unexpectedly low (range from only 2.1% to 6.2%). Different from them are Japanese tourists who prefer Beijing most (57.4%), they have quite high shares in Shanghai (16.4%) and relatively high share in Guangzhou (8.2%). Shanghai seems to have special appeal for Japanese tourists.

Tourists from the GCRs tell another story. Beijing is undoubtedly their most frequented destination (50.0%), they have similar share there as Japanese tourists, but lower than for American and British tourists. In the meantime, Guangzhou is their second most favoured main destination (29.2%). This is also the highest figure of tourists from among the different origins to choose Guangzhou. Shanghai has a high enough share as well (16.7%), while the category of Others seems to attract very little attention from this group of tourists (4.2%). The findings here confirm the discussion made in Chapter 5 (refer to Section 5.4.2) that the percentages of tourists who visit Beijing are disproportionately high across all tourist groups. Shanghai attracts much fewer tourists but is not well balanced across different groups. It appeals to Japanese tourists the most, then to tourists from the GCRs, but has limited appeals to American and British tourists. Shanghai and Guangzhou have a similar number of tourist arrivals as well as comparably biased tourists' choices. Except for tourists from the GCRs, all the other groups of tourists made a low number of visits to Guangzhou. Opposite to this, except for tourists from the GCRs, are the other groups of tourists have high shares in Others.

Further analysis, within the category of tourists from 'the GCRs', preferences are also varied. Taiwanese tourists are mainly attracted to Beijing, and to a lesser extent Guangzhou. Tourists from Southeast Asian countries prefer both Beijing and Shanghai. Compatriot tourists from Hong Kong and Macau SARs have the highest percentages in Beijing (41.2%) and the lowest percentages in Others (5.4%), and a high share in Guangzhou (38.2%). Very few ethnic Chinese tourists from these three regions chose to visit Others.

Apart from the three 1st tier tourism gateways, the next groups of most preferred main destinations are the Yangtze River (7.1%), Guilin in Guangxi Zhuang Autonomous Region (2.4%), Xi'an in Shaanxi province (1.9%), Yunnan province and Nanjing in Jiangsu province (0.9% respectively). All of these destinations are in the 2nd tier of tourism regions. Tourists also like to visit some 3rd tier tourism destinations, but their counts are too limited to allow any meaningful analyses. Although the counts of each destination against places of origin do not vary a great deal, the total count is capable of indicating the general preferences of tourists. Those who visited these 2nd and 3rd tier destinations were mainly non-ethnic Chinese tourists from America, the UK and Japan. The shares of these three groups of foreign tourists were basically the same in these two tiers (5.2%, 6.1% and 5.2% respectively) (see Table 7-6).

**Table 7 - 6 2nd and 3rd tier main destination choices by places of origin**

| Tourism regions | Main destinations | Places of origin (count and% of total) | | | | Total |
|---|---|---|---|---|---|---|
| | | America | UK | Japan | GCRs | |
| 2nd tier | Yangtze | 4(1.9%) | 11(5.2%0 | - | - | 15(7.1%) |
| | Guangxi | - | - | 5(2.4%) | - | 5(2.4%) |
| | Shaanxi (Xi'an) | 3(1.4%) | 1(.5%) | - | - | 4(1.9%) |
| | Tibet | 2(.9%) | - | 1(.5%) | - | 3(1.4%) |
| | Jiangsu | - | - | 2(.9%) | - | 2(.9%) |
| | Yunnan | 1(.5%) | - | 1(.5%) | - | 2(.9%) |
| 3rd tier | Gansu | - | - | 1(.5%) | - | 1(.5%) |
| | Inner Mongolia | - | - | 1(.5%) | - | 1(.5%) |
| | Jilin | - | - | - | 1(.5%) | 1(.5%) |
| | Shandong | 1(.5%) | - | - | - | 1(.5%) |
| | Sichuan | - | 1(.5%) | - | - | 1(.5%) |
| | Anhui | - | - | - | 1 (.5%) | 1 (.5%) |
| Sub total | | 11(5.2%) | 13(6.1%) | 11(5.2%) | 2(.9%) | 37 (17.45%) |
| Total | | - | - | - | - | 212 (100.0%) |

Note: Number of valid cases: 212

One exception among the major destination choices is Tibet. It can be recognised that amongst the 2nd tier major destinations, Tibet is one of them. However, based on the regionalization of tourism resources in China (refer to Section 5.3.4), Tibet should not be categorised into the 2nd tier of most preferred tourism regions because unlike most of the other more frequented destinations, such as Xi'an and Jiangsu, it is in the Interior Region of China. In this survey, about 1.4 percent of the respondents selected Tibet as their main destination. Given its remote location, this figure is quite high. This point proves the discussion made in Chapter 5, that the uniqueness of Tibet surpasses its remoteness. The two respondents who chose Tibet as their main destination are from America and Japan. Although it is not necessarily very convincing due to the small sample size, it does not reject the understanding either, that tourists who like to visit remote areas are those from the origins other than the GCRs. Adding to this point, none of the tourists from the GCRs chose their main destinations from the 2nd tier of tourism regions. They only made two choices from the 3rd tier of tourism regions - Jilin and Anhui. Although the 2nd tier tourism destinations are not in a position to compete with the three gateway cities in attracting international tourists, all of them are characterised as unique world famous cultural and natural attractions.

### *7.3.2. Main motivations*

Many researchers have studied the motivation of tourists' travel (such as Goodrich 1978; Crompton 1979; Dann 1981; Um and Crompton 1990, 1992). As explained in Section 7.2, although only leisure and VFR tourists are considered in this analysis, it is likely that they have a variety of motivations for travelling to China. The respondents were provided with eight choices and one open-ended question in the questionnaire regarding their main motivations for travelling to China. They could choose more than one answer. This variable was named MOTIVAT and was coded as: 1 = Leisure; 2 = Culture; 3 = Seeking family roots; 4 = Business; 5 = Education; 6 = Shopping; 7 = Sports; and 8 = Others.

Table 7-7 shows the crosstabulation table of tourists' motivations against their places of origin. It tells that across the four tourist groups, the most commonly expressed motivations for travelling to China refer to Leisure and Culture. In total, 85 respondents answered Leisure as their sole motivation; and 9 respondents answered Culture as one their motivations. The four groups of tourists do not show obvious bias in choosing these two motivations. The majority of the respondents answered with more than one motivation. Shopping and Education are comparatively high and, 11 of the respondents chose Education and 27 of them chose Shopping as one of their motivations for travelling to China. Seeking family roots did not seem to be a major motivation for tourists; 9 respondents selected this as a motivation; but it was mentioned by all of the four groups of tourists. It is expected that this motivation would normally connected with a Chinese background. Among the 7 respondents who mentioned this motivation, 1 is American, 1 is British, 1 is Japanese and 4 are tourists from the GCRs.

**Table 7 - 7 Main motivations for traveling to China by places of origin of tourists**

| Motivation | Places of origin | | | | Total |
|---|---|---|---|---|---|
| | America | UK | Japan | GCRs | |
| 1 | 21 | 18 | 32 | 14 | 85 |
| 12 | 18 | 18 | 19 | 16 | 71 |
| 14 | | | 1 | 1 | 2 |
| 15 | 1 | | 1 | | 2 |
| 16 | 1 | | 1 | | 2 |
| 17 | | | | 2 | 2 |
| 123 | | | 1 | 1 | 2 |
| 124 | 1 | | | | 1 |
| 125 | 3 | | 1 | | 4 |
| 126 | 6 | 5 | 1 | 7 | 19 |
| 136 | | | | 1 | 1 |
| 1236 | | | | 1 | 1 |
| 1246 | | 1 | | | 1 |
| 1256 | | | 1 | | 1 |
| 12345 | 1 | | | | 1 |
| 123456 | | | | 1 | 1 |
| 2 | 4 | 1 | 2 | 2 | 9 |
| 5 | | | 1 | | 1 |
| 23 | | 1 | | | 1 |
| 24 | | 1 | | | 1 |
| 27 | | | | 1 | 1 |
| 67 | | | | 1 | 1 |
| Total | 56 | 47 | 61 | 48 | 212 |
| % of Total | 26.4% | 22.2% | 28.8% | 22.6% | 100.0% |
| Total 1 | 52 | 44 | 58 | 44 | 195 |
| Total 2 | 33 | 29 | 25 | 29 | 116 |
| Total 3 | 1 | 1 | 1 | 4 | 7 |
| Total 4 | 2 | 2 | 1 | 2 | 7 |
| Total 5 | 5 | 0 | 4 | 1 | 11 |
| Total 6 | 7 | 6 | 3 | 11 | 27 |
| Total 7 | 1 | 0 | 0 | 4 | 5 |
| Total 8 | 0 | 0 | 0 | 0 | 0 |

Note: 1 = Leisure; 2 = Culture; 3 = Seeking family roots; 4 = Business; 5 = Education; 6 = Shopping; 7 = Sports; and 8 = Others.

Although there are no big differences in tourists' main motivations for travelling to China across the four groups, relatively speaking, tourists from the GCRs are higher on the motivations for Seeking family roots, and Shopping and Sports. Tourists from America, the UK and Japan are higher on Leisure and Culture; and Education and Shopping also appeal to some of them. From a motivation point of view, it seems difficult to propose that the farther away tourists are from, the more likely they are to be motivated by the cultural aspects of the destinations and vice versa.

### *7.3.3 Transport on arrival*

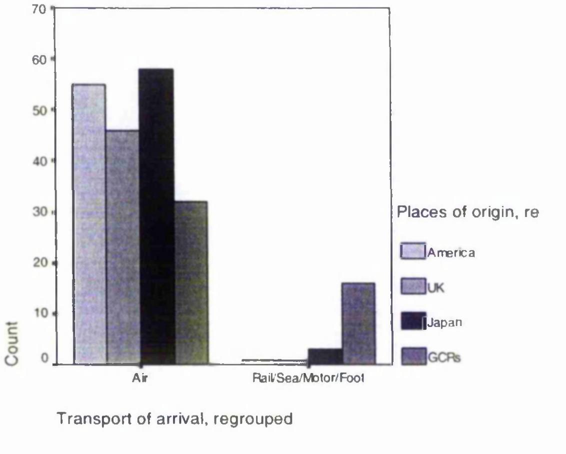
The mode of arrival is an important attribute for representing tourist's spatial behaviour. The symbol of this attribute is TRANSPOR and was coded as 1 = Air; 2 = Rail; 3 = Sea; 4 = Motor; and 5 = Foot. Among the 212 respondents the majority of them arrived by air (90.1%); the rest of them arrived by rail (5.2%), by sea (1.9%) and by motor (2.8%). No one arrived by foot. Although the final three types of travel mode hold only a small portion of the respondents, some patterns are visible. No Japanese tourists arrived by rail and motor meaning that they do not prefer to embark in China via land, normally from the border regions such as Russia, Mongolia, and Hong Kong and Macau SARs (see Table 5-15). Except for arriving by air, Japanese tourists also accounted for a small proportion of sea arrivals (1.4%). This is because they can take advantage of convenient sea transport from Japan. The three entry points are, two from Shanghai and one from Tianjin. Both cities have sea links with Japan. Almost none of the American and British tourists chose to use rail, sea and motor transport. About 10 percent of tourists from the GCRs use means of transport other than air which is normally for short haul and cross-border travel (see Table 7-8).

In order to further understand if tourists' places of origin are related to this attribute, a chi-square test was conducted (see Table 7-8, Figure 7-5). Before the test, the four categories were condensed into two, because category two to four generate a very small proportion of the respondents. The variable was then re-coded as 1 = Air and 2 = Rail/Sea/Motor/Foot. The test results show that the choices of transport on arrival are strongly linked to tourists' places of origin. Air arrivals are the commonly used means of arrivals no matter where the respondents are from, and the further away tourists are from (American and British tourists as opposed to Japanese tourists and tourists from the GCRs), the more likely they are to use air transport. Tourists from the GCRs are relatively high in Rail/Sea/Motor/Foot arrivals. This is expected considering that most of the American and British tourists are long haul tourists; and most of the Japanese tourists and tourists from the GCRs are medium to short haul travellers.

**Table 7 - 8 Crosstabulation and chi-square test of transport on arrival by places of origin**

| Transport on arrival, regrouped | Places of origin, regrouped | | | | Total |
|---|---|---|---|---|---|
| | America | UK | Japan | GCRs | |
| Air | 55 (25.9%) | 46 (21.7%) | 58 (27.4%) | 32 (15.1%) | 191 (90.1%) |
| Rail | 1 (.5%) | 1 (.5%) | - | 9 (18.8%) | 11 (5.2%) |
| Sea | - | - | 3 (1.4%) | 1 (2.1%) | 4 (1.9%) |
| Motor | - | - | - | 6(12.5%) | 6 (2.8%) |
| Total Rail/Sea/Motor/Foot | 1 (.5%) | 1 (.5%) | 3 (1.4%) | 16 (7.5%) | 21 (9.9%) |
| Total | 56 (26.4%) | 47 (22.2%) | 61 (28.8%) | 48 (22.6%) | 212 (100.0%) |
| ***Chi-Square Tests*** | Value | df | Asymp. Sig. (2-sided) | | |
| Pearson Chi-Square | 38.544 | 3 | .000 | | |
| Likelihood Ratio | 32.214 | 3 | .000 | | |
| Linear-by-Linear Association | 24.613 | 1 | .000 | | |
| ***Symmetric Measures*** | Value | | Approx. Sig. | | |
| Phi | .426 | | .000 | | |
| Cramer's V | .426 | | .000 | | |
| Contingency Coefficient | .392 | | .000 | | |

**Figure 7 - 5 Transport on arrival by places of origin**



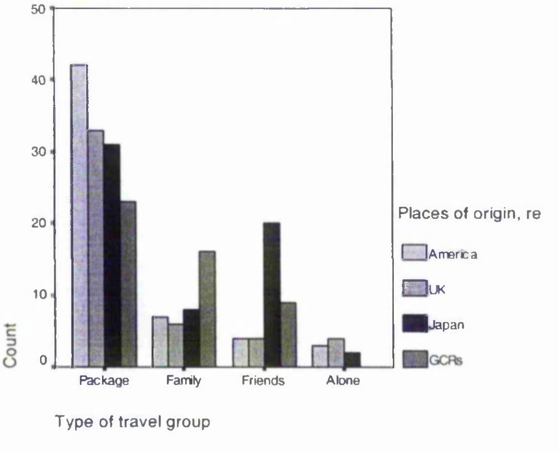
### *7.3.4 Types of travel group*

Packaged tours have been widely used, especially in medium to long haul travel. In this research, the packaged tour travel refers to tourists' travel organised by tour operators, including return transport from origin to destination country, accommodation during travel, arranged travel itinerary, and transport within the destinations (Pearce 1987; Force and Pearce 1984). This variable was named GROUP and was coded as 1 = Packaged tour; 2 = Family; 3 = Friends; and 4 = Alone. The following crosstabulation table (see Table 7-9, Figure 7-6) shows that packaged tours have the highest share (60.8%). Travelling with family and friends share the same percentages (17.5% each). Travelling alone has only a 4.2 percent share.

**Table 7 - 9 Crosstabulation and chi-square test of types of travel group by places of origin**

| Types of travel group | Places of origin | | | | Total |
|---|---|---|---|---|---|
| | America | UK | Japan | GCRs | |
| Packaged tour | 42 (75.0%) | 33 (70.2%) | 31 (50.8%) | 23 (47.9%) | 129 (60.8%) |
| Family | 7 (12.5%) | 6 (12.8%) | 8 (13.1%) | 16 (33.3%) | 37 (17.5%) |
| Friends | 4 (7.1%) | 4 (8.5%) | 20 (32.8%) | 9 (18.8%) | 37 (17.5%) |
| Alone | 3 (5.4%) | 4 (8.5%) | 2 (3.3%) | | 9 (4.2%) |
| Total | 56 (100.0%) | 47 (100.0%) | 61 (100.0%) | 48 (100.0%) | 212 (100.0%) |

**Figure 7 - 6 Types of travel group by places of origin**




A further examination against tourists' places of origin suggests that types of tourists' travel group are linked to the tourists' places of origin. American and British tourists prefer packaged tour travel most; this is followed by Japanese tourists; tourists from the GCRs have the lowest share of packaged tour travel.

On the other hand, Japanese tourists and tourists from the GCRs are more alike in that although they have high shares of package tour travel, different from the other two types of tourists, Japanese tourists also prefer to travel with friends (32.8%); and in a slightly different way, tourists from the GCRs prefer to travel with family (33.3%) and friends (18.8%). This seems to support the statements made by many other researchers that Japanese travellers, like some of their Asian counterparts, prefer to travel in-groups or with family rather than individually (such as Ahmed and Krohn 1992; Dace 1995; Cha *et al.* 1995; Iverson 1997a, 1997b; Sheldon and Fox 1988; Reisinger and Turner 1998a; Business Korea 1991; Yarmy 1992) (refer to Section 3.5).

Another noticeable pattern is that, 1.4 percent of American tourists, 1.9 percent of British tourists and 0.9 percent of Japanese tourists travel alone. There is no one from the GCRs who chose to do so. This is unanticipated considering that most of this group of tourists travel much shorter distances to their destinations and presumably have more cultural connections and more knowledge about China than their American, British and Japanese counterparts. It seems to validate the presumption that the further away tourists are from the more likely they use packaged tour. But the absence of travel alone of tourists from the GCRs suggests that cultural characteristics might be at work, and its effects outshine the effect of the geographical distance.

### *7.3.5 Choice of entry points*

The name of this attribute is ENTRY. Tourists were asked to choose one from the four choices as their entry points. They are 1 = Beijing; 2 = Shanghai; 3 = Guangzhou and 4 = Others. The final category contains all the entry points other than the three gateway cities. Almost half of the tourists entered from Beijing (49.5%). Shanghai and Guangzhou have 25 percent and 11.3 percent respectively. Others has 14.2 percent.

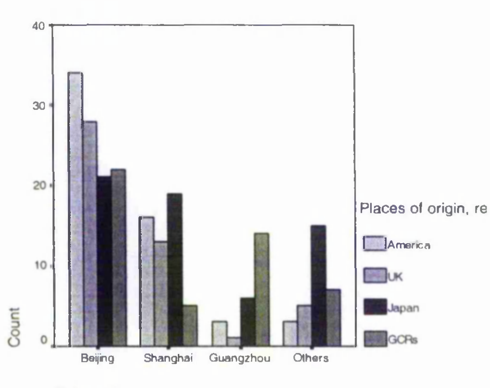
A chi-square test indicates that tourists' origins are linked with their choice of the entry points. The strength of the relationship is strong. In this aspect, American and British tourists are similar again. For them, Beijing is the most used entry point (60.7 and 59.6% respectively). Shanghai is their second choice (28.6 and 27.7% respectively). Guangzhou and Others hold only small portion of tourists' choices. For Japanese tourists, Beijing and Shanghai have equal importance as entry points (34.4 and 31.1% respectively); they also have very high share in Others (24.6%). However, their 34.4 percent share in Beijing is the lowest of all tourist groups. This is largely because that Shanghai and Others share quite high proportions, whilst Guangzhou has only a low share of Japanese tourists. In contrast, tourist from the GCRs prefer to enter from Beijing (45.8%) firstly; and secondly Guangzhou (29.2%) (see Table 7-10, Figure 7-7).

**Table 7 - 10 Crosstabulation and chi-square test of entry points by places of origin**

| Entry points | Places of origin (Count and% of Total) | | | | Total |
|---|---|---|---|---|---|
| | America | UK | Japan | GCRs | |
| Beijing | 34 (60.7%) | 28 (59.6%) | 21 (34.4%) | 22 (45.8%) | 105 (49.5%) |
| Shanghai | 16 (28.6%) | 13 (27.7%) | 19 (31.1%) | 5 (10.4%) | 53 (25.0%) |
| Guangzhou | 3 (5.4%) | 1 (2.1%) | 6 (9.8%) | 14 (29.2%) | 24 (11.3%) |
| Others | 3 (5.4%) | 5 (10.6%) | 15 (24.6%) | 7 (14.6%) | 30 (14.2%) |
| Total | 56 (100.0%) | 47 (100.0%) | 61 (100.0%) | 48 (100.0%) | 212 (100.0%) |
| ***Chi-square tests*** | | Value | df | Asym. Sig. (2-sided) | |
| Pearson Chi-Square | | 37.802 | 9 | .000 | |
| Likelihood Ratio | | 37.299 | 9 | .000 | |
| Linear-by-Linear Association | | 12.593 | 1 | .000 | |
| ***Symmetric measures*** | | Value | | Approx. Sig. | |
| Phi | | .422 | | .000 | |
| Cramer's V | | .244 | | .000 | |
| Contingency Coefficient | | .389 | | .000 | |
| Number of Valid Cases | | 212 | | | |

Note: 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.32.

**Figure 7 - 7 Choices of entry point by places of origin**



Despite the three gateway cities, tourists also used other less important ports of entry (see Table 7-11). They can be categorised into three classes. Despite the 1st class gateway entries, the 2nd class entry points include the points which were chosen by more than two respondents; and the 3rd class contains those which were chosen by less than two respondents. The differences of the choices of the three classes are clearly presented. As discussed above, the three gateway cities are used by the majority of the respondents. About 85 percent of them chose to enter from one of the three gateways. The 2nd class has 12.2 percent share, and is mainly composed of dispersed and less important entry points. Some of them are coastal cities, such as Tianjin, Shenzhen, Zhuhai and Dalin, which have convenient international connections, and are mainly used as entry points. Some of them are major tourism cities, such as Yunnan (Kunming), Guangxi (Guilin) and Zhejiang (Hangzhou), which tourists use as both entry points and main destinations. A close examination of the 2nd class of entry points shows that Japanese tourists use it more than the other three groups of tourists. For them Hebei (Tianjin) and Yunnan (Kunming) are the two most favoured 2nd class entry points. Heibei (Tianjin) is close to Beijing with direct international links by air and sea (see Table 5-15). However, it does not have significant tourism scenery of itself, therefore mainly serves as a pass-through city. On the other hand, although Yunnan (Kunming) is situated in the remote region, it is famous for its tourism scenery and has convenient international air and road links, therefore it is likely to be used as the starting point and one of the main destinations by tourists.

**Table 7 - 11 Three classes of entry points by places of origin of tourists**

| Type of entry points | Entry points | America | UK | Japan | GCRs | Total | Total shares |
|---|---|---|---|---|---|---|---|
| Gateway cities | Beijing | 34 | 28 | 21 | 22 | 105 | 85% |
| | Shanghai | 16 | 13 | 18 | 5 | 52 | |
| | Guangzhou | 3 | 1 | 6 | 14 | 24 | |
| Class 2 | Hebei (Tianjin) | - | - | 8 | - | 8 | 12.2% |
| | Guangdong (Shenzhen & Zhuhai) | 1 | 2 | - | 2 | 5 | |
| | Yunnan (Kunming) | - | - | 5 | - | 5 | |
| | Guangxi (Guilin) | - | 2 | 1 | - | 3 | |
| | Liaoning (Dalian) | 1 | - | 2 | - | 3 | |
| | Zhejiang (Hangzhou) | - | - | - | 2 | 2 | |
| Class 3 | Anhui (Huangshan) | - | - | - | 1 | 1 | 2.35% |
| | Guizhou | - | 1 | - | - | 1 | |
| | Heilongjiang (Harbin) | - | - | - | 1 | 1 | |
| | Jiangsu (Nanjing) | - | - | - | 1 | 1 | |
| | Shandong (Qingdao) | 1 | - | - | - | 1 | |
| Total | | 56 | 47 | 61 | 48 | 212 | 100% |

Note: names inside the parenthesises are the cities used for entry within associated provinces.

The 3rd class of entry points represent only 2.35 percent of tourists' choices. It seems that tourists from the GCRs are more likely to use the 2nd and 3rd class entry points than the other three types of tourists. The reason for tourists from the GCRs, especially Compatriots from Hong Kong and Macau SARs, and Taiwan, having relatively more dispersed entry points is because it is convenient for them to fly directly from their origins to many regional cities in China. Non-ethnic Chinese tourists, who chose entry points other than the three gateways, such as Guangdong or Guangxi, are normally those who embarked in Hong Kong SAR first.

It seems natural to make the assumption that the choice of entry points of tourists might relate to the types of travel group they use. It is recognised that marketing arrangements are a significant factor that affect many aspects of tourists' travel. A chi-square test was conducted and the result does not support this assumption (see Table 7-12). Although the chi-square test is hampered by the presence of small frequency cells, the results suggest that choice of entry points of tourists is not linked to the type of travel groups tourists travelled with.

**Table 7 - 12 Crosstabulation and chi-square test of entry points by types of travel group**

| Entry points | Types of travel group | | | | Total |
|---|---|---|---|---|---|
| | Packaged tour | Family | Friends | Alone | |
| Beijing | 68 (52.7%) | 13 (35.1%) | 51.4% | 5 (55.6%) | 105 (49.5%) |
| Shanghai | 36 (27.9%) | 9 (24.3%) | 6 (16.2%) | 2 (22.2%) | 53 (25.0%) |
| Guangzhou | 8 (6.2%) | 9 (24.3%) | 6 (16.2%) | 1 (11.1%) | 24 (11.3%) |
| Others | 17 (13.2%) | 6 (16.2%) | 6 (16.2%) | 1 (11.1%) | 30 (14.2%) |
| Total | 129 (100.0%) | 37 (100.0%) | 37 (100.0%) | 9 (100.0%) | 212 (100.0%) |
| Chi-Square Tests | Value | df | Asymp. Sig. (2-sided) | | |
| Pearson Chi-Square | 13.180 | 9 | .155 | | |
| Likelihood Ratio | 12.610 | 9 | .181 | | |
| Linear-by-Linear Association | .906 | 1 | .341 | | |
| Symmetric Measures | Value | | Approx. Sig. | | |
| Phi | .249 | | .155 | | |
| Cramer's V | .144 | | .155 | | |
| Contingency Coefficient | .242 | | .155 | | |
| Number of Valid Cases | 212 | | | | |

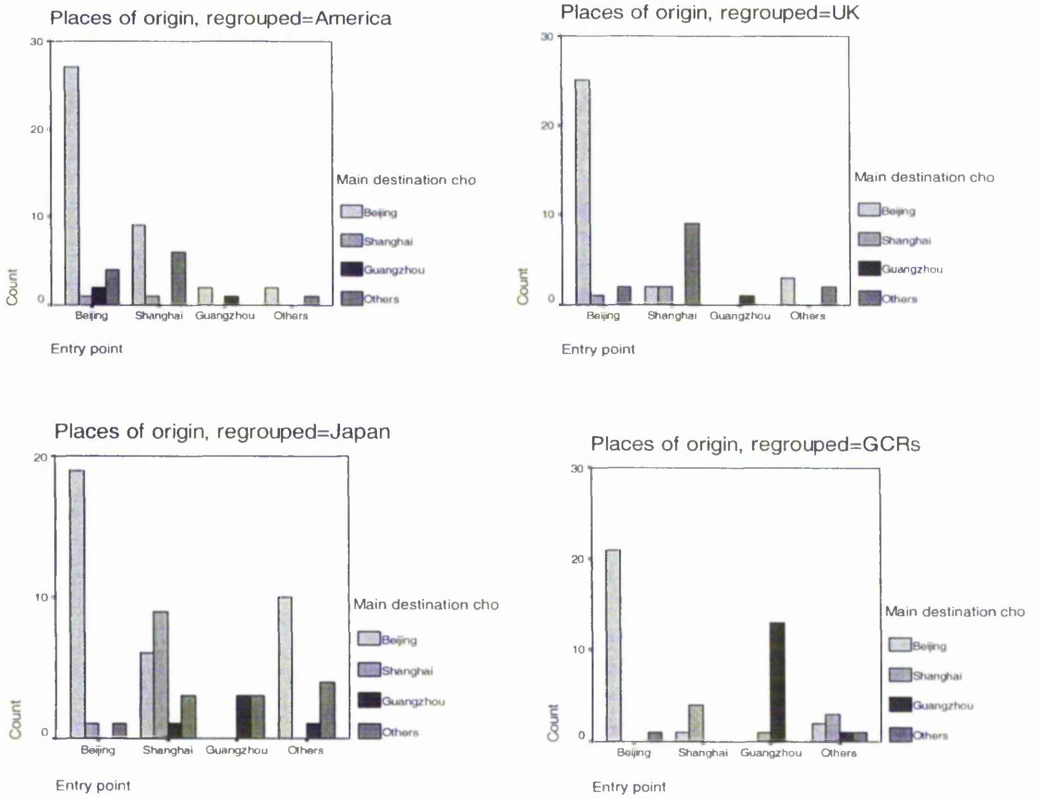
Note: 6 cells (37.5%) have expected count less than 5. The minimum expected count is 1.02.

Furthermore, Figure 7-8 examines how entry points are linked to the main destination choices of the tourists. For all four groups of tourists, the main destinations are more likely to be used as their entry points; this phenomenon is most obvious for Beijing. For

American and British tourists Beijing is their main entry point no matter where they chose as their main destination. Shanghai is their second major entry point. However, they tend to enter from Shanghai more than Beijing if they chose Others as their main destination. They do not tend to use entry points other than these two cities.

For Japanese tourists a wider variety of entry points is available. They prefer to enter from Beijing, Shanghai and Others if they chose Beijing as their main destination. They are most likely to enter from Shanghai if Shanghai is their main destination and they choose Guangzhou and Others as their main destinations. They are likely to have entered from any ports other than Beijing. This may be connected to their wider choice of transport on arrival, variety in travelling groups, and their locational adjacency to China. For tourists from the GCRs Beijing and Guangzhou are the two main entry points and this is linked, as for other tourists groups, to their main destination choice.

**Figure 7 - 8 Entry points versus main destination choices by places of origin**



### *7.3.6 Single versus multiple destinations*

Tourists' travel can be of two basic types – single destination and multiple destinations (such as Lue *et al.* 1993; Oppermann 1995) (refer to Section 4.3). In this research, single destination travel describes that tourists visit one destination within Mainland China and leave Mainland China immediately after the visit. The name of the attribute is SINVMULT; and it was coded as 0 = Single; and 1 = Multiple destinations.

Among the 212 respondents, 27.8 percent were single destination travellers; the majority of them were multiple destination travellers (72.3%). From Table 7-13 and Figure 7-9 some clear patterns of tourists' choices are identified. Tourists from the GCRs have the highest percentage of single destination choice and to a lesser extent, so do Japanese tourists. These two groups of tourists also have quite high proportions of multiple destination travel. Both American and British tourists are high in multiple destination travel and very low in single destination travel.

A chi-square test (see Table 7-13, Figure 7-9a) confirmed that tourists' choices of single or multiple destination travel and their places of origin are strongly associated with each other. It might be assumed that the degree of cultural familiarity of the tourists to the destination country determines whether they will travel to more then one places. However, geographical distance seems operational as well. In order to confirm that the relationship between geographical distance and the tourists' choices of single or multiple destinations are not due to chance a chi-square test was conducted. The results confirmed this assumption (see Table 7-14, Figure 7-9b).

Although the statement that "the further away tourists are from, the keener they will be to expand their experience and benefits by incorporating more destinations into their travel" is observed in this situation (Buchanan 1983; Fesenmaier and Lieber 1988; Lue *et al.* 1996). It seems that cultural and geographical factors connect with each other; it is difficult to identify their individual effects on tourists' trip characteristics and difficult to distinguish which factor is the real or more dominant one.

**Table 7 - 13 Crosstabulation and chi-square test of single versus multiple destination travel by places of origin**

| Types of travel | Places of origin (Count and% of Total) | | | | Total |
|---|---|---|---|---|---|
| | America | UK | Japan | GCRs | |
| single | 5 (8.9%) | 4 (8.5%) | 22 (36.1%) | 28 (58.3%) | 59 (27.8%) |
| multiple | 51 (91.1%) | 43 (91.5%) | 39 (63.9%) | 20 (41.7%) | 153 (72.2%) |
| Total | 56 (100%) | 47 (100%) | 61 (100%) | 48 (100%) | 212 (100%) |
| ***Chi-Square Tests*** | Value | df | Asymp. Sig. (2-sided) | | |
| Pearson Chi-Square | 42.991[a] | 3 | .000 | | |
| Likelihood Ratio | 44.705 | 3 | .000 | | |
| Linear-by-Linear Association | 38.279 | 1 | .000 | | |
| ***Symmetric Measures*** | Value | | Approx. Sig | | |
| Phi | .450 | | .000 | | |
| Cramer's V | .450 | | .000 | | |
| Contingency Coefficient | .411 | | .000 | | |
| Number of Valid Cases | 212 | | | | |

Note: 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.08.

**Figure 7 - 9 Single versus multiple destination travel by places of origin**

a. by places of origin b. by geographical distance

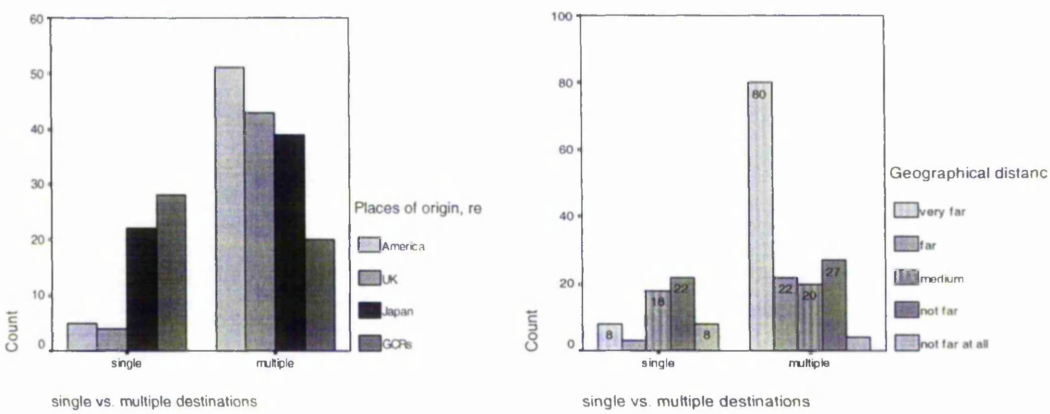


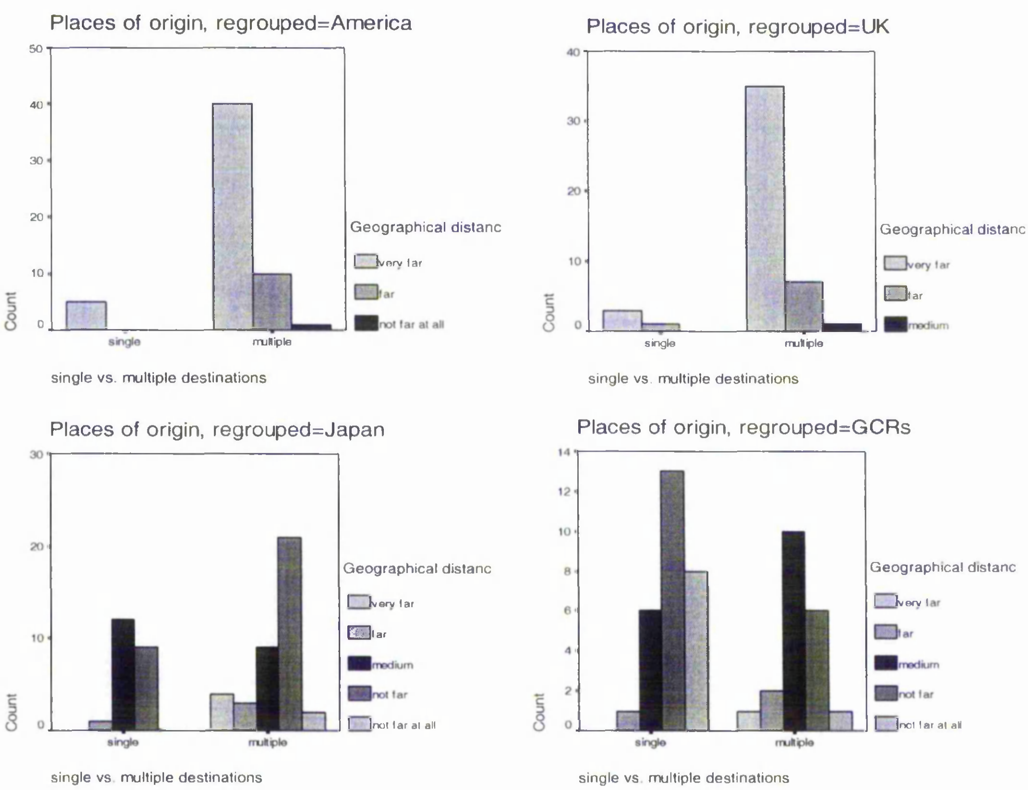

**Table 7 - 14 Crosstabulation and chi-square test of geographical distance by single or multiple destination travel**

| Types of travel | Geographic distance (Count and% of Total) | | | | | Total |
|---|---|---|---|---|---|---|
| | very far | far | medium | not far | not far at all | |
| Single | 8 (9.1%) | 3 (12.0%) | 18 (47.7%) | 22 (44.9%) | 8 (66.7%) | 59 (27.8%) |
| multiple | 80 (90.9%) | 22 (88.0%) | 20 (52.6%) | 27 (55.1%) | 4 (33.3%) | 153 (72.2%) |
| Total | 88 (100%) | 25 (100%) | 38 (100%) | 49 (100%) | 12 (100%) | 212 (100%) |
| ***Chi-Square Tests*** | Value | df | Asymp. Sig. (2-sided) | | | |
| Pearson Chi-Square | 44.845[a] | 4 | .000 | | | |
| Likelihood Ratio | 43.499 | 4 | .000 | | | |
| Linear-by-Linear Association | 37.268 | 1 | .000 | | | |
| ***Symmetric Measures*** | Value | | Approx. Sig. | | | |
| Phi | .444 | | .000 | | | |
| Cramer's V | .444 | | .000 | | | |
| Contingency Coefficient | .406 | | .000 | | | |
| Number of Valid Cases | 212 | | | | | |

Note: 1 cell (10.0%) has expected count less than 5. The minimum expected count is 3.34.

A series of clustered bar charts of tourists' single and multiple destination choices against both their origins and their perceived geographical distance are presented (see Figure 7-10). The bar chart suggests, that no matter which group, tourists tend to perceive a longer distance if they visited multiple destinations and vice versa. This further confirmed that both the national background of tourists and the geographical distance between their origins and the destinations are at work together to influence tourists' choice of single or multiple destinations. More rigorous cause-effect explanation needs to be used to further look into the effects of these two factors.

**Figure 7 - 10 Single versus multiple destination against places of origin and geographical distance**



### *7.3.7 2nd places visited*

After entering China and leaving entry points, tourists' movements are direction specific. The direction of the movement of tourists is reflected in the origin-destination configurations, and also thereafter. The examination focuses on tourists' 2nd destination choices, routes followed and departure points. Among the 212 respondents, 153 (72.2%) are multiple destination travellers. Table 7-15 shows the number of tourists who visited 2nd place and the choices of these 2nd places. Among the 2nd places visited, Xi'an (Capital of Shaanxi province), which is situated in the Northern part of the Middle tourism regions, is at the top of the choices (24.8%). Although all located in the 2nd tier of tourism regions, in comparison to other important tourism places, such as Yunnan, Jiangsu and Guangxi, the significance of Xi'an is clearly indicated.

After Xi'an, although Beijing is mostly selected as a entry point and main destination, it also attracts many tourists as their 2nd major destinations (14.4%). Shanghai is another important 2nd destination (9.8%). Guangzhou attracts only 3.3 percent of the tourist arrivals. Clearly, Beijing and Shanghai have a more important tourism position than Guangzhou. They are not only important gateways used by a variety of international tourists, but are also major tourist attractions in their own rights. In contrast, Guangzhou seems to lack this strong tourism appeal. It is either used as the main destination in single destination travel or as a major pass-through city specifically for tourists from areas conveniently close to Guangzhou. Combining its appearances in Section 7.3.1 and 7.3.5, its international gateway position seems not very strong. It might be more accurate to regard it as a regional gateway for the GCRs.

Despite the three gateways, tourists also like to visit other places. One of the most attractive is Jiangsu province. Tourists are actually attracted to different tourist cities in this province, such as Suzhou, Nanjing, Wuxi, Yangzhou and Zhenjiang. Altogether they attract 13.1 percent of tourists. Together with Zhenjiang (5.2%), Anhui (1.3%) and Shanghai, the whole Greater Shanghai Region (GSR) is treated by tourists as the most attractive 2nd destination (29.4%). Following this region are Guangxi (Guilin) (7.8%) and the Yangtze River tour (5.9%). All these places are situated from the Middle to the

Southern part of China. In contrast, the whole Northern China excluding Beijing attracted only 5.9 percent of the tourists. This is not a very high figure for an entire region. It is clear that in general, tourists prefer the Middle and Southern tourism regions to the Northern region of China as their 2nd destinations. Among these regions, the GSR attracts most of the tourists. As a single destination, Xi'an (Shaanxi) is inarguably the most important 2nd place to visit.

**Table 7 - 15 Profile of 2nd places visited**

| 2nd place visited | Frequency | Percent (%) |
|---|---|---|
| Shaanxi (Xi'an) | 38 | 24.8 |
| Beijing | 22 | 14.4 |
| Jiangsu | 20 | 13.1 |
| - Suzhou | 10 | |
| - Nanjing | 7 | |
| - Wuxi | 1 | |
| - Yangzhou | 1 | |
| - Zhenjiang | 1 | |
| Shanghai | 15 | 9.8 |
| Guangxi (Guilin) | 12 | 7.8 |
| Yangtze | 9 | 5.9 |
| Northern China | 9 | 5.9 |
| - Hebei (Chengde) | 2 | |
| - Liaoning (Dalian, Shenyang) | 2 | |
| - Inner Mongolia | 2 | |
| - Heilongjiang (Harbin) | 1 | |
| - Jilin (Changchun) | 1 | |
| - Henan | 1 | |
| Zhejiang (Hangzhou) | 8 | 5.2 |
| Sichuan (Chongqing) | 8 | 5.2 |
| Guangzhou | 5 | 3.3 |
| Hunan | 2 | 1.3 |
| Yunnan | 2 | 1.3 |
| Anhui (Huangshan Mountain) | 2 | 1.3 |
| Wuhan | 1 | 0.7 |
| Total number of tourists who visited 2nd place | 153 | 100 |

A crosstabulation of tourists' major 2nd places visited against their places of origin shows the following pattern of travel directions of tourists (see Table 7-16). It is noticeable that, Shaanxi (Xi'an) is the number one 2nd destination choice for American (44%) and British (35%) tourists. After it, other 2nd destinations have much lower shares than Xi'an. American tourists also like to visit the GSR (Jiangsu, Shanghai and Zhejiang), the Yangtze River and Guangxi. Their choices of 2nd destinations are the widest among the four groups of tourists. This is reflected in their relatively equal percentages in most of the major 2nd destinations. Beijing is reasonably low given that most of the American tourists (60.7%) used this city as their entry point.

For British tourists, the GSR, Sichuan and the Yangtze River are their next favourite 2nd destinations after Xi'an. The high volume of arrivals of British tourists in these destinations is similar to the patterns experienced by American tourists. The main difference is that they have a quite high rank in Sichuan. It seems unexpected because this province is not a major tourism destination in China for most of the international tourists. However, Sichuan can be a peripheral gateway to Tibet; it is also a starting point of the Yangtze River tour. Considering these factors, the high rank of British tourists in Sichuan might be explained. In addition, British tourists are less scattered than American tourists. They tend to concentrate in the Middle and toward Southern tourism regions of China.

**Table 7 - 16 Crosstabulation of major 2nd destinations by places of origin**

| 2nd Places visited: count and% of Places of origin | America | % | UK | % | Japan | % | GCRs | % | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|
| Shaanxi | 22 | 44% | 15 | 35% | 1 | 3% | | | 38 | 25% |
| Beijing | 2 | 4% | 2 | 5% | 15 | 38% | 3 | 15% | 22 | 14% |
| Jiangsu | 4 | 8% | 7 | 16% | 4 | 10% | 5 | 25% | 20 | 13% |
| Shanghai | 4 | 8% | 2 | 5% | 6 | 15% | 3 | 15% | 15 | 10% |
| Guangxi | 3 | 6% | 3 | 7% | 6 | 15% | | | 12 | 8% |
| Yangtze | 4 | 8% | 5 | 12% | | | | | 9 | 6% |
| Northern China | 1 | 2% | 2 | 5% | 2 | 5% | 4 | 20% | 9 | 6% |
| Sichuan | | | 7 | 16% | 1 | 3% | | | 8 | 5% |
| Zhejiang | 3 | 6% | | | 2 | 5% | 3 | 15% | 8 | 5% |
| Guangzhou | 3 | 6% | | | | | 2 | 10% | 5 | 3% |
| Anhui | | | | | 2 | 5% | | | 2 | 1% |
| Hunan | 2 | 4% | | | | | | | 2 | 1% |
| Yunnan | 2 | 4% | | | | | | | 2 | 1% |
| Wuhan | 1 | 2% | | | | | | | 1 | 1% |
| Total | 51 | 100% | 43 | 100% | 39 | 100% | 20 | 100% | 153 | 100% |

Japanese tourists are quite scattered as well. Different from American and British tourists, they prefer to visit Beijing first, then Guilin (Guangxi province) and the GSR. Although, as discussed in Section 7.3.5, they like to use Beijing and Shanghai as their entry points, these two cities are also their top 2nd destination choices. It can be assumed that their major movements are between the two gateway cities; and to a wider extent, between

Beijing and the GSR. But Japanese tourists have very low share in Shaanxi (Xi'an) and Yangtze. A common point between all these three groups of tourists is that none of the Japanese tourists and British tourists chose Guangzhou as their 2nd destination, and only few American tourists chose it.

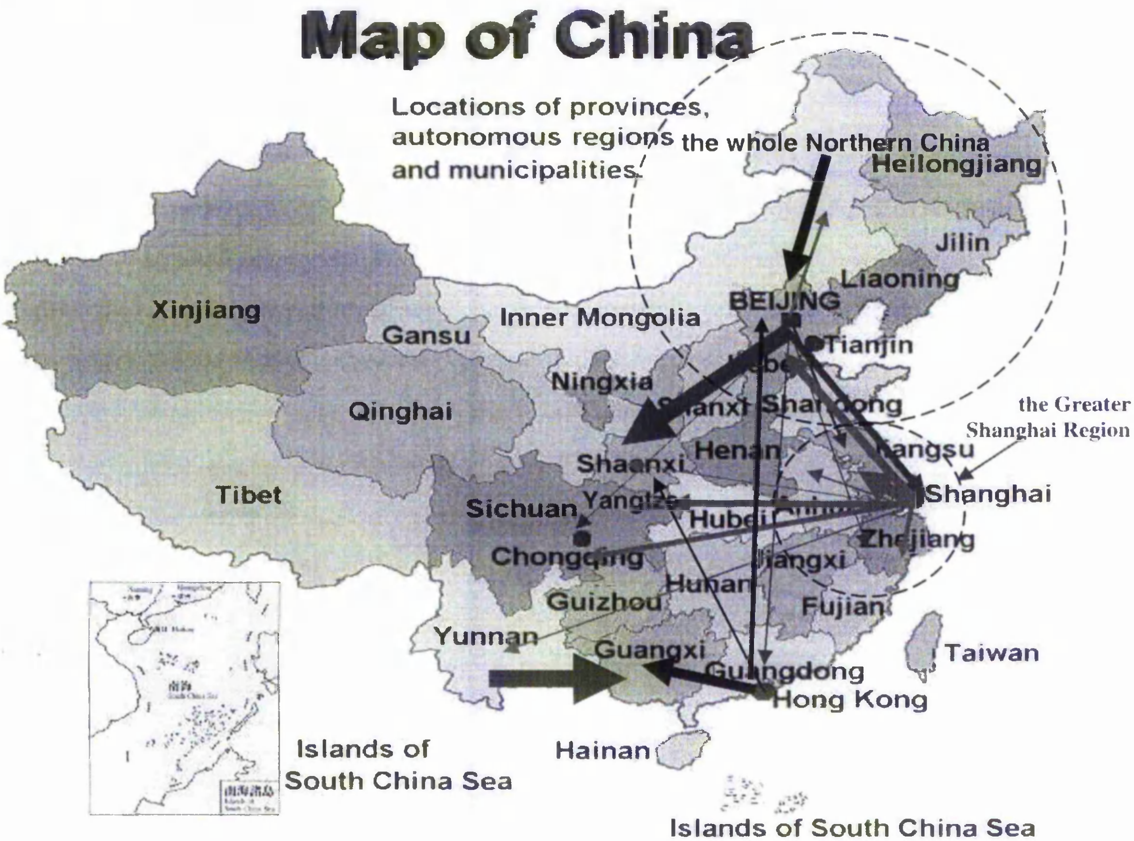
Tourists from the GCRs have a very concentrated distribution in the North and the GSR. They have the highest share in Jiangsu (25%), and to a less extent, the whole Northern China region (20%). They also have a very high share in the three gateway cities – Beijing (15%), Shanghai (15%) and Guangzhou (10%). Different from the other three groups of tourists, it seems that Xi'an (Shaanxi), Guilin (Guangxi), the Yangtze River or any others have no strong appeal to this group of tourists.

A crosstabulation of the other aspects of the flow directions of tourists' movement reveals the direction of tourist flows from different entry points (see Table 7-17; Figure 7-11). Overall the most visited 2nd destination is Xi'an (17.9%). A breakdown of the tourist arrivals in this city shows that the majority of them are from Beijing. This can be related to the fact that most of the tourist arrivals in this city are from America (57.9%) and the UK (39.5%); and the majority of them have entered the country from Beijing (60.7% and 59.6% respectively).

### Table 7 - 17 Crosstabulation of entry points by 2nd places visited

| Entry points | 2nd place visited (count and% within entry points) | | | | | | | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No 2nd place | Shaanxi | Beijing | Jiangsu | Shanghai | Guangxi | Yangtze | Northern China | Zhejiang | Sichuan | Guangzhou | Hunan | Yunnan | Anhui | Wuhan | |
| Beijing | 36 | 35 | | 5 | 15 | | | 7 | 2 | 1 | 3 | 1 | | | | 105 |
| % | 34.3 | 33.3 | | 4.8 | 14.3 | | | 6.7 | 1.9 | 0.95 | 2.9 | 0.95 | | | | 100.0 |
| Shanghai | 7 | 1 | 9 | 12 | | | 7 | | 5 | 6 | | 1 | 2 | 2 | 1 | 53 |
| % | 13.2 | 1.9 | 17.0 | 22.6 | | | 13.2 | | 9.4 | 11.3 | | 1.9 | 3.8 | 3.8 | 1.9 | 100.0 |
| Guangzhou | 16 | 1 | 2 | | | 5 | | | | | | | | | | 24 |
| % | 66.7 | 4.2 | 8.3 | | | 20.8 | | | | | | | | | | 100.0 |
| Northern China | | | 11 | | | | | 2 | | | | | | | | 13 |
| % | | | 85 | | | | | 15 | | | | | | | | 100.0 |
| Guangdong | | | | | | 3 | | | | | 2 | | | | | 5 |
| % | | | | | | 60.0 | | | | | 40.0 | | | | | 100.0 |
| Yunnan | | | | | | 4 | | | | | | | | | | 4 |
| % | | | | | | 100.0 | | | | | | | | | | 100.0 |
| Others | | 1 | | 3 | | | 2 | | 1 | 1 | | | | | | 8 |
| % | | 12.5 | | 37.5 | | | 25.0 | | 12.5 | 12.5 | | | | | | 100.0 |
| Total | 59 | 38 | 22 | 20 | 15 | 12 | 9 | 9 | 8 | 8 | 5 | 2 | 2 | 2 | 1 | 212 |
| % | 27.8 | 17.9 | 10.4 | 9.4 | 7.1 | 5.7 | 4.3 | 4.3 | 3.8 | 3.8 | 2.4 | 0.94 | 0.94 | 0.94 | 0.5 | 100.0 |

**Figure 7 - 11 Tourist flows between entry points and the 2nd places visited**




Note: Thicker lines represent higher volume of tourist flows, and vice versa.
Map source: http://www.chinatour.com/maps/maps.htm

The next most visited 2nd destination is Beijing. Tourists are normally from the Northern China regions, such as Tianjin, Heilongjiang, Jilin, Liaoning and Shandong. About 85 percent of tourists who enter from Northern China chose to visit Beijing. This is largely because these places are geographically adjacent to Beijing and are mainly treated by the tourists as pass-through points. These points are principally used as entry points. None of the respondents who entered throughout the Northern China region are single destination tourists. The second major source of tourists in Beijing is Shanghai (17.0%), and a small proportion of tourists are from Guangzhou as well (8.3%). This shows a sign of horizontal travel of tourists, i.e. movement between destinations of similar ranks, such as from one gateway to another.

Tourists who visited the GSR are those who entered first from Beijing and second from Shanghai. Predominantly, Beijing is the sole source of tourists' arrivals in Shanghai (14.3%). On the other hand, those who entered at Shanghai prefer to visit its neighbouring province Jiangsu first (22.6%), then Beijing (17.0%). A close tie between Beijing and Shanghai is once again indicated; the distance decay effect is also observable.

Tourists who entered at Guangzhou have a strong preference for Guangxi. It shows that Guangzhou, unlike Beijing and Shanghai, has very loose ties with the other two gateways. Only 8.3 percent of tourist arrivals in Guangzhou chose to visit Beijing and no one chose to visit Shanghai. This is also evident in those who entered at Guangdong province (the capital is Guangzhou). They also prefer Guangxi (60%) as their 2$^{nd}$ destination, and next Guangzhou (40%) showing a distance effect of their choices.

Likewise, tourists from the Northern China region prefer to visit Beijing (8.5%) first and then the Northern China region (15%). Tourists who entered from Beijing and Shanghai have a wider range of 2$^{nd}$ destination choices than those who entered from other places. However, the neighbouring regions and cities are their most preferred 2$^{nd}$ destinations, such as Beijing with the Northern China region, and Shanghai with Jiangsu, Zhejiang, the Yangtze River and Sichuan. Tourists entered from Yunnan choose to visit Guangxi (100%), an adjacent province to Yunnan. Distance seems significantly influential.

In general, after the main entry points, tourist flows have three major characteristics. The first is the movement between the gateways or horizontal movement, mainly between Beijing and Shanghai. It seems clear that these two cities have strong links to each other despite the distance between them. As a 2$^{nd}$ destination choice, Shanghai attracts the largest amount of tourist arrivals from Beijing. Beijing has its second largest amount of tourist arrivals from Shanghai. In the meantime, tourist flows from Shanghai are more evenly spread across different regions, particularly around the GSR than the tourist flows from Beijing, which are mainly to Shaanxi province (Xi'an). However Guangzhou has very weak traffic links with both Beijing and Shanghai. It is primarily linked to its neighbouring regions, such as Guangdong, Yunnan and Guangxi, but not a diversity of different regions like Beijing and Shanghai. Likewise, the tie between Yunnan and Guangxi can be either seen as the distance decay function or horizontal movement function.

The second feature of the SDIT is that the tourist destinations have a hierarchical order. At the top of the ladder are Beijing and Shanghai. Down the ladder are regional nodes such as Xi'an, the GSR and special attractions, such as the Yangtze River, Yunnan and Guangxi. An noticeable finding is that, although Yunnan has been considered one of the $2^{nd}$ level important nodal destinations, this analysis has revealed that tourist arrivals in Yunnan are limited in terms of both the variety of tourists' origins and the total numbers of their arrivals.

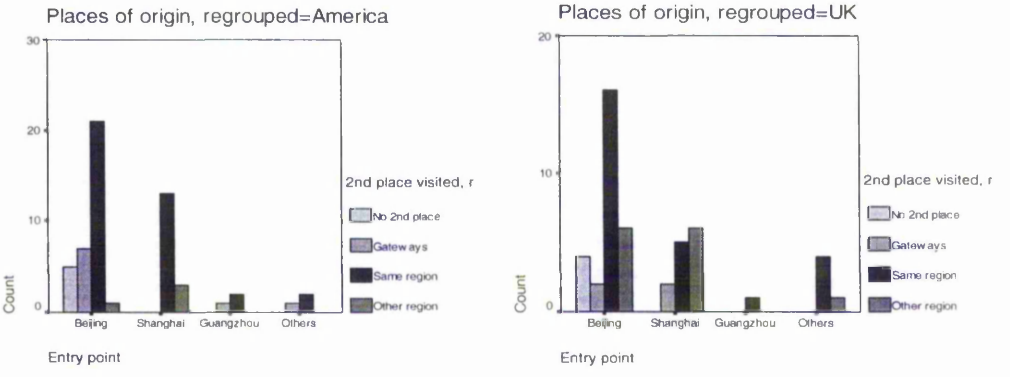
Thirdly tourist flows between major gateways and local nodal regions, such as Xi'an, the Northern China region and the GSR are not confined to one direction, e.g. from top to bottom, but are dual-directional, such as from the Northern China region to Beijing, and from Beijing to Xi'an, etc.

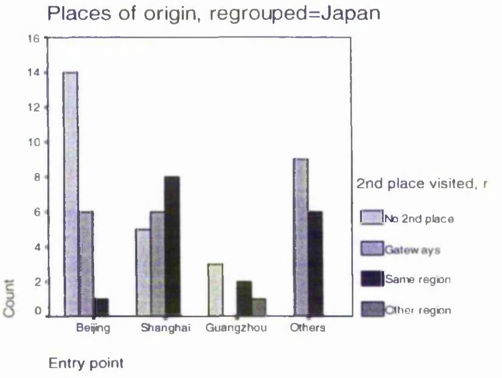
Fourthly, along the hierarchical ladder and the lower the tourist flows go, the more is the evident distance effect and vice versa. For instance, tourists seem to be attracted to $2^{nd}$ destinations that are situated near their entry points. These include flows between gateways and regional nodes as well as flows between regional nodes themselves such as Beijing and the Northern China region; Beijing and the GSR; Shanghai and the GSR; Yunnan and Guangxi; Guangzhou and Guangdong. Contrary to this, tourist flows between gateways show little sign of the distance effect, such as tourist flows between Beijing and Shanghai.

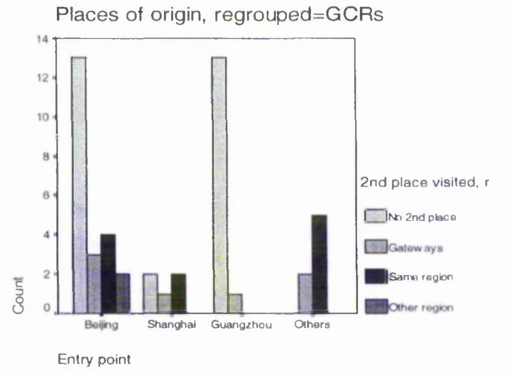
In order to examine if the links between the SDIT within China and distance is real or by chance, a chi-square test was performed. Before that, the variable of $2^{nd}$ destination choices was adjusted. This was because the original answers were too scattered because too many destination choices had been specified. Answers ranged from key tourism cities to very insignificant locations and the majority of the small destination choices had very small frequencies. In order to capture the key patterns and directions of the SDIT in relation to distance, the variable of 2nd destination choices was transformed from the geographical locations to the geographical types of the 2nd places visited. The new variable has four categories, and was coded as 1 = no 2nd places visited; 2 = tourists continue their journeys to one of the three gateways – Beijing, Shanghai and Guangzhou; 3 = tourists continue their travel in the same tourism regions of their entry points; and 4 = tourists travel to other tourism regions which are different from their entry points.

Figure 7-12 shows the classification of the 2nd places visited versus their entry points by their place of origin. It seems that American tourists chose 2nd destinations in the same region of their entry points first, then other gateway cities. Slightly different from American tourists are British tourists who also like to visit other regions. For tourists from Japan the gateways, which are different from their entry points, are their first choices. They also like to visit 2nd destinations in the same region to their entry points; this is especially so if they entered from Shanghai. It seems that tourists from the GCRs are more like Japanese tourists than American and British tourists; they prefer to visit 2nd destinations in the same region as their entry places as well as the gateways.

**Figure 7 - 12 2nd places visited versus entry points by places of origin**



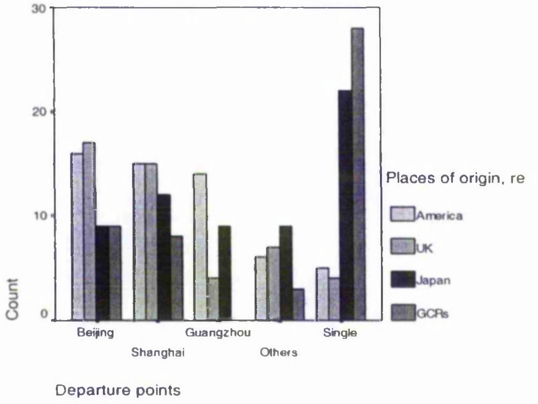



## *7.3.8 Termination of travel*

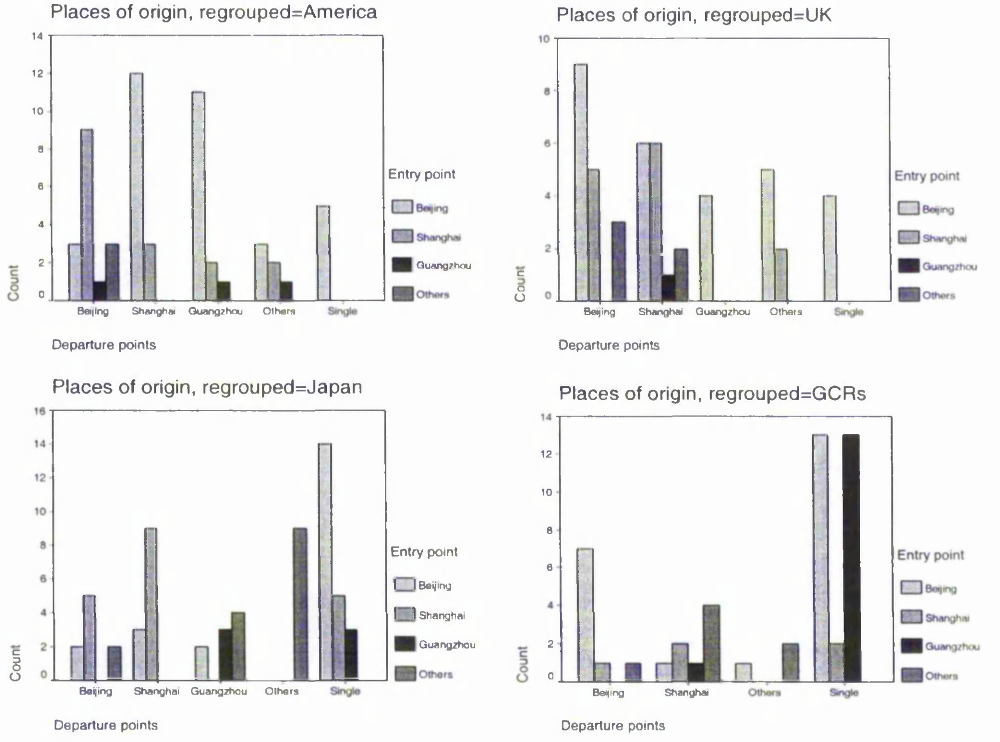
This trip attribute tells where tourists finish their journey in China and exit. Despite the single destination visitors (27.8%), about equal numbers of tourists leave China via Beijing and Shanghai (24.1 and 23.6% respectively). In the meantime, equal numbers of tourists use Guangzhou and Others to exit (12.7 and 11.8% respectively) (see Figure 7-13). American and British tourists prefer to exit via Beijing and Shanghai although American tourists also show a similar preference to exit from Guangzhou. This is different from British tourists who have a relatively low level of shares in Guangzhou. Japanese tourists like to leave from Shanghai most, which is also their main entry point; they have equal shares in the other three categories.

**Figure 7 - 13 Departure points by places of origin**



Still some further analysis is needed to shed more light on the departure pattern of tourists. A crosstabulation chart of tourists' departure points versus entry points by their places of origin shows that American tourists are the least likely to use entry points as their departure points. For example, they tend to leave from Shanghai and Guangzhou if they entered from Beijing, and tend to leave from Beijing if they entered from Shanghai and Others. British tourists have similar preferences as American tourists except that they prefer Beijing and Shanghai more as their departure points no matter where they entered. Japanese tourists are the most likely to exit from where they entered, except that they like to leave from Shanghai if they entered from Beijing. Shanghai clearly, is their most preferred place to enter and exit. It seems that for tourists from the GCRs, their entry points and exit points do not show any link. They like to leave from Beijing and Shanghai but not Guangzhou regardless of where they entered into China (see Figure 7-14).

**Figure 7 - 14 Departure points versus entry points by places of origin**



### *7.3.9 Travel route*

Applying the category identified by Mings and McHugh (1992) (refer to Section 4.3.1), the attribute of 'travel route' was coded into five categories. 1 represents tourists who visit only one destination in China. 2 represents tourists whose travel routes are in a linear pattern; i.e. they do not return to any of the places they visited previously along their journeys; 3 represents a full orbit travel pattern. This means that tourists' travel route is a complete circle. The entry points are also their points of departure. 4 represents a partial orbit travel pattern. This pattern is different from the full orbit pattern in that the places that tourists return along their journey are not their entry points. Except the small circles within their whole journey, they travel a direct route; 5 represents tourists who go abroad at least once and then return China during their journey.

A close examination reveals the following patterns in tourists' travel. Despite single destination pattern (27.4%), the most used travel route is linear pattern (44.8%). Next is full orbit travel (26.4%). Partial orbit and going abroad have almost zero frequency (0.9 and 0.5% respectively). It suggests that tourists try to avoid visiting the same place apart from their entry and departure points. Because Category 4 and 5 had very low shares, they were grouped as one category represented by 4 meaning Others.

Therefore a cross tabulation and chi-square test were conducted using the new variable, and the results confirmed that tourists' choices of travel routes are related to their places of origin (see Table 7-18, Figure 7-15). American and British tourists prefer a linear pattern and Japanese tourists like to travel by full orbit. This point seems to support a finding discovered in Section 7.3.8 that Japanese tourists prefer to exit and enter from Shanghai most because they like to travel in a circle, i.e. an orbital pattern. For them, a full orbit travel seems more convenient, because the starting and ending points are the same. However, tourists have to repeat at least once visiting a destination and are therefore, deprived of a chance to go to a place they have not yet visited. But for American and British tourists, linear route is more preferable because it gives them more opportunities to see more things. A cultural influence can be assumed in shaping this difference.

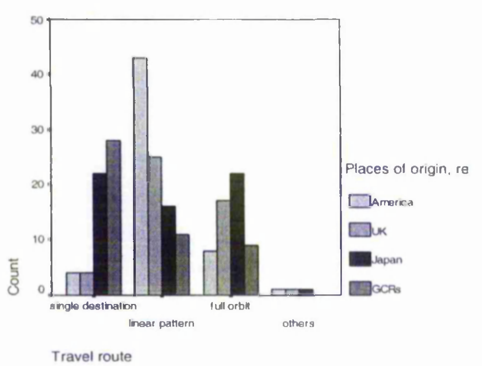
For tourist from the GCRs, except for their high percentage of single destination travel, they do not show an obvious preference in choosing either linear or full orbit travel routes. This might be linked to the different travel arrangements of these tourists and their social-economic characteristics or attitudes toward travel.

**Table 7 - 18 Crosstabulation and chi-square test of travel route versus places of origin**

| Travel route (coding) | Places of origin | | | | Total |
|---|---|---|---|---|---|
| | America | UK | Japan | GCRs | |
| Single destination (1) | 4 (7.1%) | 4 (8.5%) | 22 (36.1%) | 28 (58.3%) | 58 (27.4%) |
| Linear pattern (2) | 43 (76.8%) | 25 (53.2%) | 16 (26.2%) | 11 (22.9%) | 95 (44.8%) |
| Full orbit (3) | 8 (14.3%) | 17 (36.2%) | 22 (36.1%) | 9 (18.8%) | 56 (26.4%) |
| Partial orbit (4) | | 1 (2.1%) | 1 (1.6%) | | 2 (0.9%) |
| Abroad (5) | 1 (1.8%) | | | | 1 (.5%) |
| Other (4 and 5) | 1 (1.8%) | 1 (2.1%) | 1 (1.6%) | | 3 (1.4%) |
| Total | 56 (100%) | 47 (100%) | 61 (100%) | 48 (100%) | 212 (100%) |
| ***Chi-Square Tests*** | Value | df | Asymp. Sig. (2-sided) | | |
| Pearson Chi-Square | 65.294 | 9 | .000 | | |
| Likelihood Ratio | 67.428 | 9 | .000 | | |
| Linear-by-Linear Association | 12.381 | 1 | .001 | | |
| ***Symmetric Measures*** | Value | | Approx. Sig. | | |
| Phi | .555 | | .000 | | |
| Cramer's V | .320 | | .000 | | |
| Contingency Coefficient | .485 | | .000 | | |
| Number of Valid Cases | 212 | | | | |

Note: 4 cells (25.0%) have expected count less than 5. The minimum expected count is .67.

**Figure 7 - 15 Travel route by places of origin**



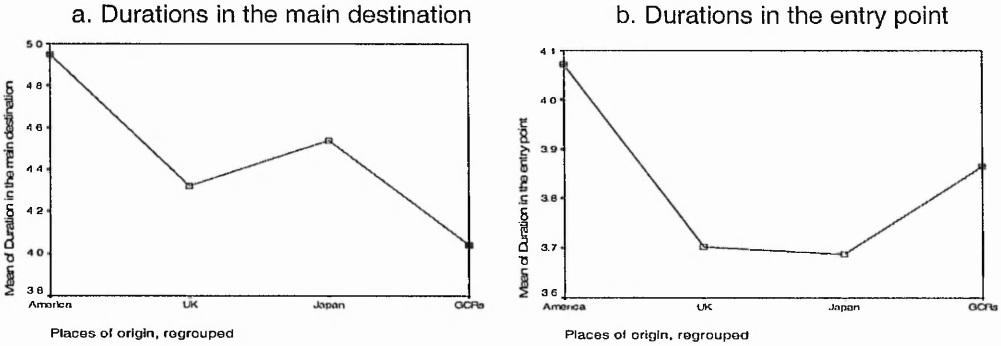

## *7.3.10 Durations of stay in main destination, entry point and the whole country*

Durations of stay of tourists in their destinations characterise the trip behaviors of tourists. The survey reveals that in the main destinations the average stay of tourists is 4.5

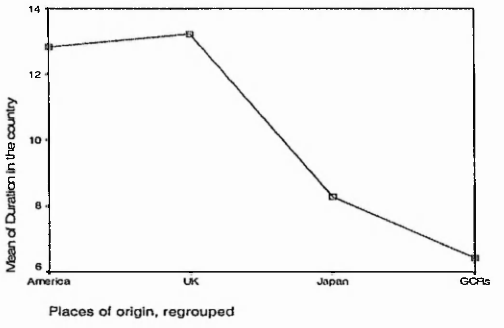
days, most of them stay there 3 - 5 days. The average stay in entry points is 3.8 days and most of them stay there 2 - 5 days. The average stay in the whole country is 10.16 days and most of them stay five days. The mean plots of tourists 'Durations in the main destination' and 'Durations in the entry point' show that American tourists stayed in both entry points and main destinations the longest time. Tourists from the UK had moderate length of stays in their main destinations, and low durations of stay in entry points. Japanese tourists stayed quite a long time in main their destinations, but not in their entry points. Tourists from the GCRs have very short duration of stay in the main destinations, but long durations of stay in the entry points. The reason for the high durations of stay of American tourists in their main destinations and entry points might be that they do not treat their entry points as pass-through points, but one of their main. The also stay a long time in their main destinations indicating that they might be more economically capable of affording a longer stay than others. Due to the same reasons Japanese tourists stayed a relatively long time in their main destinations as well. Tourists from the GCRs had a short stay in the main destinations, but quite long average stays in the entry point. This might be linked to their motivation and main destination choices in China (see Figure 7-16).

**Figure 7 - 16 Mean plots of tourists' durations of stay**

a. Durations in the main destination b. Durations in the entry point



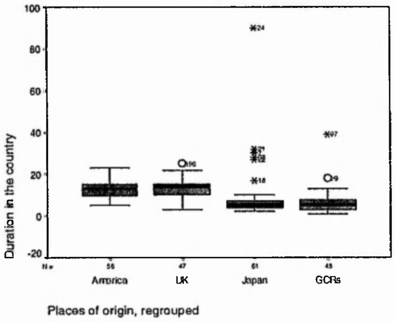
c. Duration in the whole country




In order to investigate if the mean differences between the three types of durations across the four groups of tourists are due to chance or not, ANOVA tests were conducted (refer to Appendix Six (a)). Although two of the Levene statistics (0.024, 0.025) reject the equal variances assumption across all groups, ANOVA is robust to this violation when the groups are of equal or near equal size (SPSS 2001). The sizes of the four tourists groups are 56 American, 47 British, 61 Japanese, and 48 tourists from the GCRs. These figures are basically equal. The ANOVA test can be carried on. The insignificance values of the $F$ test in the ANOVA test for the first two attributes are 0.487 and 0.918 (combined between groups). These indicate that we can not reject the null hypothesis that the average stays at main destinations and entry points are equal across all tourists' groups. It is difficult to conclude that tourists from different origins have different mean durations of stay in the entry points and the main destinations. However the durations of stay of tourists in the whole country can be differentiated by tourists' places of origin (the Levene statistic is 0.138; the $F$ test is significant at zero level).

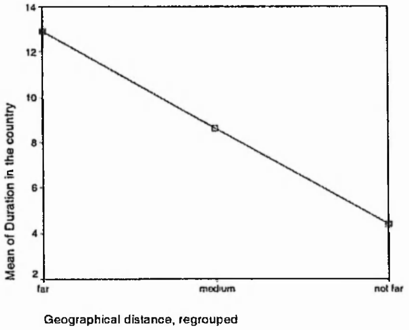
A pair wise Post Hoc comparisons shows that the actual differences rest on Japanese and the GCRs tourists with American and British tourists. The boxplot visualises the group difference of tourists' stays in the whole country (see Figure 7-17). Tourists from America and the UK have similar durations of stay. Their mean durations of stay in the whole country are 12.84 and 13.23 days. British tourists have the longest durations of stay in the country; whereas tourists from Japan and the GCRs have similar durations of stay which are much shorter than those from the other two origins. Their mean durations of stay are 8.28 and 6.42 days. This might be supposed as the results of long or short haul travel of tourists. For long haul travel, tourists tend to stay longer and see more places so that they can fully benefit from their travel and vice versa.

**Figure 7 - 17 Boxplot of tourists' durations of stay in the whole country by origins**




In order to check this speculation, an ANOVA test was conducted. Figure 7-18 (refer to Appendix Six (b)) represents the mean plot of the perceived distance between tourists' origins and destinations in China, and their durations of stay in the whole country by their places of origin. The distance variable has been reduced to three categories from the original five categories: 1 = far, 2 = medium and 3 = not far. The test confirmed that tourists' durations of stay are linked to their perceptions of geographical distance. The Levene statistic is 0.183. The significance value of the *F* test in the ANOVA table is zero. The mean plot shows that as the distance increases, the durations of stay of tourists increase.

**Figure 7 - 18 Mean plot of durations of stay of tourists in the whole country by geographical distance**



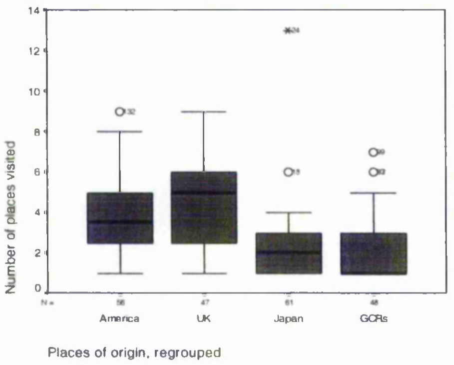
### *7.3.11 Number of places visited*

Number of places visited indicates how much tourists enjoyed their trip and want to benefit more form it; it is normally positively related to durations of stay. In order to examine if tourists from different origins visit different numbers of places, an ANOVA test was performed. The test confirmed that these two variables are related and the Levene statistic is 0.002. Despite the Levene statistics, the ANOVA test was carried on because of the reason discussed in Section 7.3.10. The *F* statistic in the ANOVA table is zero. The Welch and Brown-Forsythe tests also yielded zero significance levels. The Post Hoc test provides an evidence, that same as that in Section 7.3.10 that the real differences rest on American and British tourists with Japanese tourists and tourists from the GCRs (see Appendix Six (c)).

Figure 7-19 shows the boxplot of the number of places visited by tourists from different origins. British tourists have the highest numbers of places visited followed immediately by American tourists than their Asian counterparts. The number of places visited decreases from British to American to Japanese to tourists from the GCRs; the respective means are 4.51, 3.86 to 2.20 and 2.04. This corresponds with the discussion made in Section 7.3.10 that British tourists tend to stay longer and visit more places even though they have relatively low duration stay in entry points and main destinations. Contrary to this, the geographical affinity of their origins to China increases. A Post Hoc test reveals that similar to the finding discovered in Section 7.3.9, the actual differences in the number of places visited rests on American and British tourists with Japanese tourists and tourists from the GCRs. The latter two groups of tourists tend to visit fewer places, and the former tend to visit more destinations.

The average duration of stay of tourists in each place they visited varies by their origins as well. The average duration of stay of American tourists is 2.847 days; and this is 3.427 days for British tourists; 3.764 days for Japanese tourists; and 3.147 days for tourists from the GCRs. Obviously, American tourists have the shortest average stay in each place, but they visit quite a few places; Japanese tourists have the longest average duration of stay in each place, indicating that they might prefer a more relaxed trip itinerary instead of travelling too quickly from one place to another. On the whole, tourists from the GCRs have the lowest number of places visited.

**Figure 7 - 19 Boxplot of number of places visited and places of origin**

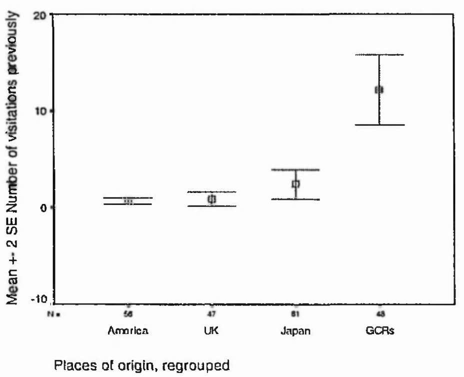



## *7.3.12 Number of previous visitations*

This attribute examines how many times the respondents visited China before and sees if they are related to the other trip attributes and tourists' places of origin. Because it is difficult to conduct ANOVA tests due to large number of small frequency cells in the crosstabulation table, the examination uses the plot of the standard errors of means to determine if possible patterns and regularities existed. The error bar shows that average number of visitations clearly increases with the tourists' proximity to China, variation in the number of visitations increases at the same time (see Figure 7-20).

As expected, tourists from America and the UK have the lowest number of previous visitations (mean number of visitations are 0.6 and 0.85 respectively). Japanese tourists have an average of 2.39 previous visitations; tourists from the GCRs have the highest average number of previous visitations – 12.17 times. The ANOVA test confirmed that the number of previous visitations is associated with the places of origin of the tourists. Again, tourists from America and the UK have evident differences from those from Japan and the GCRs. Previous studies have shown that repeated travel of tourists relates to the loyalty of them to the destinations, and this is related to their perceptions of cultural differences, convenient transportation and safety (Chen and Gursoy 2001: 83). The findings here seem to partially support this statement. The shorter the geographical distance and the cultural distance between tourists' origin and the destination country, the more likely they are to conduct repeated travel.

**Figure 7 - 20 Error bar of number of previous visitations by places of origin**




## *7.3.13. Trip expenses*

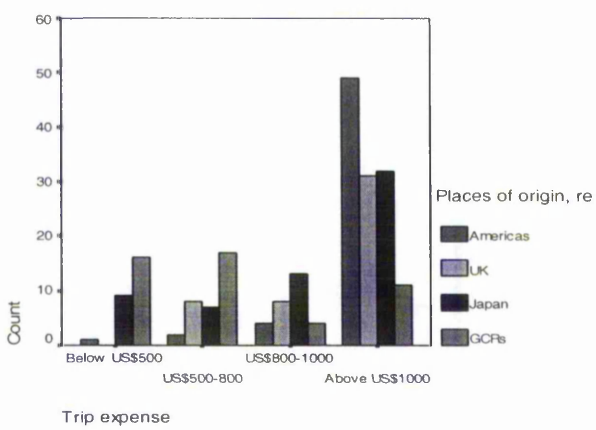
The monetary cost faced by a tourists travelling in China is a direct indicator of a tourist's decision making and travelling choices, including durations of stay, travel route, and direction, etc. In general, it might be easy to assume that the longer the durations of stay and the distance the tourist travelled, the higher the trip expense can be. On the other hand, this cost can be affected by many factors, such as income levels, motivation and tourists' social cultural backgrounds. The crosstabulation table and chi-square tests show that tourists' places of origin are strongly associated with their travel expenses. Tourists from the GCRs have the lowest trip expenses, whilst tourists from other three origins have equal range of trip expenses (see Table 7-19 and Figure 7-21).

**Table 7 - 19 Crosstabulation and chi-square test of tourists' trip expenses by places of origin**

| Trip expense | Places of origin | | | | Total |
|---|---|---|---|---|---|
| | America | UK | Japan | GCRs | |
| Below US$500 | 1 (.5%) | | 9 (4.2%) | 16 (7.5%) | 26 (12.3%) |
| US$500-800 | 2 (.9%) | 8 (3.8%) | 7 (3.3%) | 17 (8.0%) | 34 (16.0%) |
| US$800-1000 | 4 (1.9%) | 8 (3.8%) | 13 (6.1%) | 4 (1.9%) | 29 (13.7%) |
| Above US$1000 | 49 (23.1%) | 31 (14.6%) | 32 (15.1%) | 11 (5.2%) | 123 (58.0%) |
| Total | 56 (26.4%) | 47 (22.2%) | 61 (28.8%) | 48 (22.6%) | 212 (100.0%) |
| ***Chi-square Tests*** | **Value** | **df** | **Asymp. Sig. (2-sided)** | | |
| Pearson Chi-Square | 71.098 | 9 | .000 | | |
| Likelihood Ratio | 75.859 | 9 | .000 | | |
| Linear-by-Linear Association | 55.052 | 1 | .000 | | |
| ***Symmetric Measures*** | **Value** | | **Approx. Sig.** | | |
| Phi | .579 | | .000 | | |
| Cramer's V | .334 | | .000 | | |
| Contingency Coefficient | .501 | | .000 | | |
| Number of Valid Cases | 212 | | | | |

Note: 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.76.

**Figure 7 - 21 Trip expenses by places of origin**




## 7.4 CONCLUDING REMARKS

This chapter has given a general and preliminary insight into the profile and cross-national travel patterns and directions of the SDIT within the destination country - China. The main purpose of this chapter was to provide a factual summary of information and an examination of certain basic theoretical notions that may be applicable in this research situation. It also aims to underpin a more intensive cause and effect investigation for explaining the broad features of cross-cultural differences in the SDIT within a country. Chapter 8 will deal with this part of the work.

In brief, this chapter identified that tourists from different origins present themselves with different spatial behaviours. This is based upon the basic characteristics of fifteen trip attributes and their relationships with the socio-demographical characteristics of tourists, particularly their places of origin. In addition, the importance of different destinations in China, and their tourism functions are identified based on the patterns and directions of the SDIT. This chapter also links the findings with the theoretical evidence reviewed in previous chapters. Not all the findings are in agreement with the literature. A hierarchical order of tourism regions was identified, and tourist flows were found to have patterns of movement along the hierarchical ladder, but in dual directions. An examination of the routes of tourists travel lead to an understanding that international tourists in China predominantly take linear and full orbit routes, but not as Mings and McHugh (1992) state – a partial orbit.

National and geographical distance factors have been carefully examined and rich evidence has been found that they affect the SDIT within China. The 'distance decay effect' was observed in many aspects. However, it also seems not to be consistent across different scales and ways of tourist travel. For example, distance seems more prominent in vertical movement, but in horizontal movement. Also, national and geographical distance variables seem to be closely related to each other. The present analysis could not confirm the real effect of these two factors, such as the absence of travel alone by tourists from GCRs, even though they originate from nearby regions. More research needs to be done to understand their collective influence when they are examined together.

In conclusion this chapter has identified some regularities and patterns of cross-cultural differences in tourist distribution within China. It also opens additional questions that need to be addressed in the next part of the data analysis, including the precise function of cultural instead of national factors; the function of cultural and geographical factors when they are examined together; the intensity of the SDIT instead of patterns and the directions of the SDIT; and the hypothetical testing of the relationships identified in this chapter. Chapter 8 will expand upon these points and further investigate the research questions. Some of the trip attributes identified will be applied into the logistic regression model. The findings identified in this chapter also have their own theoretical and practical implications. A thorough discussion of the findings discovered in this chapter, in conjunction with the literature review and the findings from Chapter 8 will be elaborated upon in Chapter 9.

# 8 DATA ANALYSIS OF CROSS-CULTURAL DIFFERENCES IN THE SDIT USING THE LOGISTIC REGRESSION MODELS

## 8.1 INTRODUCTION

The preceding chapter has been primarily concerned with the general travelling patterns and directions of tourists from different places of origin in light of the SDT theories. It sought to identify the relationships between the travelling behaviour of tourists and cultural and geographical factors affecting the SDIT in China. This analysis was exploratory in nature, and identified the effects of national/cultural and geographical distance. Further analysis is needed to explain these effects. After fulfilling these objectives, this chapter will expand on the confirmation of the relationships identified using causal and predictive models – the binary logistic regression model. In Chapter 6, it has been explained that this discrete choice technique fits this research purpose well, because the model explains the direct effect of the constraints on the process of a tourist's spatial choice, but not on its final outcome. It also reveals the propensity of tourists' travel using the notion of probability instead of the volume of the SDIT. This model bears similarities to normal multiple regressions; but its dependent variable is categorical dichotomy and independent variables could be categorical, interval or numeric. Therefore it is simple and straightforward, and can be used to explore behavioural aspects of the tourists.

Three grand hypotheses were formed regarding the influences of cultural proxies and the cultural distance variables and the geographical distance on the destination choices of international tourists. The outcomes of the binary logistic regression models verify these hypotheses.

The data analysis starts from a consideration of the basic objectives and a plan of the model building; this also includes transferring the objectives into three main research hypotheses. Next, it assesses the choices of dependent and independent variables and the justification of the use of the binary logistic regression model; an examination of the suitability of the data collected for this analysis is also discussed. Following this, three separate logistic regression models are built concerning the three major tourism destinations in China – Beijing, Shanghai and Guangzhou; it also decides a set of methods of assessing the adequacy of the model both in terms of the individual variables involved and the overall fit of the model. This chapter ends with a brief summary of the key findings. A thorough evaluation of the empirical findings in conjunction with the findings obtained in Chapter 7 will be discussed in the following chapter.

## 8.2 AIMS AND STEPS OF THE LOGISTIC REGRESSION MODEL BUILDING STRATEGY

The choice of the method for data analysis was based upon the aims of this research and the characteristics of the data collected. The main aim of this research, as mentioned before, is to reveal the significant characteristics of the SDIT – focusing on three features of tourists' movement, patterns, direction and intensity; and two key attributes, cultural distance and geographic distance. This chapter concerns with the third feature – intensity and its relationship with the two key attributes. Specifically, it is to develop a modelling approach to (1) explain tourists' main destination choices within China; (2) capture the impacts of relevant variables on the destination choices of tourists and (3) estimate the probability of tourists' main destination choices with the best fitting model using the identified independent variables.

The ultimate goal of model building is to find out the most efficient model that includes all the significant variables and fits the data best within the context of the research problems. In order to achieve this goal, a carefully designed model building strategy was developed. This strategy can be specified into nine steps (refer to Figure 8-1):

1. define the objectives and transfer into research hypotheses;
2. evaluate the logistic regression models
3. design the dependent variables;
4. assess the independent variables;
5. check the validity of the data for the binary regression analyses;
6. build the logistic regression models;
7. estimate the models and assess the overall model fit;
8. elicit and interpret the empirical findings;
9. and finally, discuss and summarise the strengths and limitations of the whole process (Chapter 9 and 10).

Firstly, in order to carry on a logistic regression analysis, the general research aims were transferred into three hypotheses; in which the expected relationships between the cultural proxies and cultural distance and geographical distance variables and the spatial choices of the tourists were set forth. These were established based on the literature review and preliminary findings in the previous chapters. These three hypotheses will be used as a basis for reasoning and discussing the research findings.

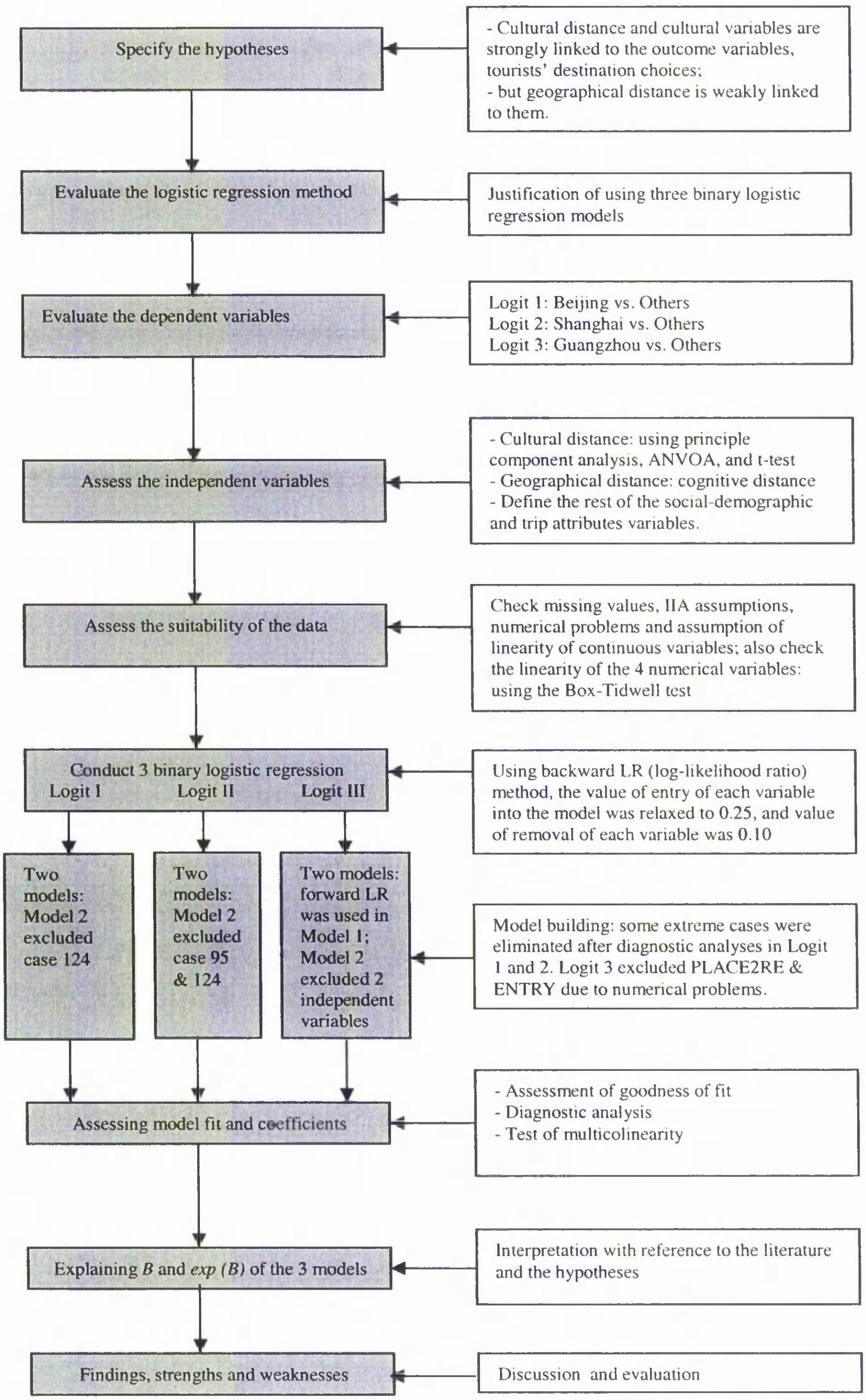
Although it has been specified that the dependent variable – the intensity of the SDIT, was represented by the main destination choices of tourists, the form of this variable entering into the logistic model needed to be carefully elaborated in order to respond correctly to the desired research questions. The research decided that, instead of using one dependent variable with more than two choices in its choice set, it separated the choice set of main destinations into three dichotomous groups, i.e. Beijing versus Others, Shanghai versus Others, and Guangzhou versus Others. To estimate these, three individual binary logistic regression analyses were conducted leading to three logits. Logit I concerns with Beijing vs. Others, Logit II concerns with Shanghai vs. Others, and Logit III concerns with Guangzhou vs. Others.

The next step was to evaluate the feasibility of the independent variables involved in the model building. Although Chapter 6 has made brief discussions, these variables need to be operationalised. A series of statistical techniques were used to pre-assess them, including factor analysis, chi-square test, analysis of variance (ANOVA) test, etc. Necessary adjustments of the measurements of some of the variables were made so that they could be included in the logistic regression models with reasonable scales. Related to these, the quality of the data collected was also assessed, and the suitability of the binary logistic regression model building was justified. Possible solutions of transforming this data into more proper forms were conducted accordingly.

After these, the next logical step was to try different logistic regression models until the 'best fitting' models were obtained with categorised number of parameters but including all the essential independent variables. During this process, goodness of fit statistics of models were estimated, and the significance of each involved variables were evaluated.

After finishing all these, the emphasis moved from the computation and assessment of the significance of estimated coefficients to interpretation of these values. The objective of interpretation of any fitted models was to check if practical inferences to the whole population could be drawn from the estimated coefficients in the models. This was done with reference to the hypotheses and the previous literature review. A discussion of the findings of the data analysis and a summary of its strengths and limitations are put in Chapter 9 and 10.

## Figure 8 - 1 Tasks and steps of the logistic model building strategy



## 8.3 THE SPECIFICATION OF THE BINARY LOGISTIC REGRESSION MODELS AND THE HYPOTHESES

Given the advantages of the logistic regression model for solving choice probability problems, and the way this research questions addressed, the logistic regression model was considered as the suitable technique. It compares the two dichotomous choices in the dependent variable. In this research, the dependent variable is a set of destination choices of tourists. The main goal of the model is to predict how likely a tourist is to choose from the set of tourism places as his/her main travel destination in China. The relationship between independent and dependent variables takes an S-shaped curve, the values of dependent variable fall within the range of one to zero representing the probability of an event happening to not happening. The category, which has the 0 code, is used as the baseline category (or reference category), and is compared by the other choice.

The functional form of the binary logistic regression model which has been proposed by many researchers (Ben-Akiva and Lerman 1997; Ewing and Haider 1999; McFadden 1974a, 1974b; Norušis 1999; Stemerding *et al.* 1999; Stynes and Peterson 1984) is as follow (refer to Section 4.5.4). The probability of a tourist's choice of destination $i$ is:

$$P_i = \frac{e^z}{1 + e^z}$$

Where:

$P_i$ = the probability of choosing destination $i$. The predicted value of $P_i$ ranges between 1 and 0. A value close to one means that the choice of destination $i$ is very likely to occur. A value close to zero means that the choice of a destination other than destination $i$ is very likely to occur, i.e. the probability of choosing destination $i$ is very low. In this research, three binary logistic models are used. $P_i$ in each of the model is represented by the choice of Beijing versus Others, Shanghai versus Others and Guangzhou versus Others respectively

$z$ = is a linear combination of all the $n$ attributes which are influential in tourists' choice to destination $i$

$e^z$ = the utility of destination $i$ and the random component $\varepsilon_i$

The form for $e^z$ is:

$$e^z = e^{B_0 + B_1 x_1 + B_2 x_2 + \ldots + B_n x_n + \varepsilon_i}$$

Where

$e$ = the base of natural logarithms and equals to 2.718;

$x_1 \ldots x_n$ = $n$ independent variables, i.e. $n$ attributes of destination $i$;

$B_0$ = the alternative specific constant for destination $i$

$B_1 \ldots B_n$ = the generic effect of attribute $x_1 \ldots x_n$ on destination $i$'s utility

$\varepsilon_i$ = the random component of destination $i$'s utility

From these formulas, the probability of choosing a destination other than $i$ ( $p_{others}$ ) could be estimated as:

$$P_{others} = 1 - P_i$$

The method of the model estimation is the maximum-likelihood method. It is based on the principle that the selected coefficients make the observed values most likely to have occurred (Field 2000: 166). For this analysis, the main interest of the research rests on the cause-effect relationships between the intensity of the SDIT and their cultural backgrounds and perceived geographical distance between China and their places of origin. Derived from this, the following hypotheses were proposed:

H1: There is a relationship between the choice of the main destinations in China defined in the choice alternatives and the cultural distance exhibited by the tourists from four different places of origin; and the relationship is relatively strong.

This hypothesis focuses on the relationship between cultural difference and spatial choice behaviour of tourists. The principal independent variable for testing the hypothesis is the factor analysis scores of the 'cultural distance' variables of each individual from different origins. It was expected that cultural distance will have a positive impact on the outcome variables.

H2: There is a relationship between the choice of the main destinations in China defined in the choice alternatives and the two culture proxies – places of origin and ethnicity exhibited by the tourists from the four choosing regions and the relationship is relatively strong.

The reason of making this hypothesis is to expand on the first hypothesis to further explore the effect of culture on the spatial behaviour of tourists. As identified in Chapter 7, nationality and ethnicity have significant impact on the SDIT. This chapter will reveal the importance of cultural distance, confirm the effect of the cultural proxies, and examine the collective effect of all these cultural related variables. Also, using both cultural distance and cultural proxies, the similarity between these two types of cultural related variables could be explored; and their importance to the outcome variables could be compared.

H3: There is a relationship between the choice of the main destinations in China defined in the choice alternatives and the perceived geographic distance of tourists between China and the origin of the tourists, but the relationship is relatively weak.

Chapter 7 has produced evidence that distance is seemingly operational together with cultural proxies. Also, according to literature, distance has been recognised acting as both an impediment and/or attractiveness to tourists (Crampon and Tan 1973; Flognfeldt 1999; Gormsen 1988; Jansen-Verbeke 1995; Lloyd and Dicken 1972; Murphy and Keller 1990; Oppermann 1992a, 1992b, 1995; Paul and Rimmawi 1992; Williams and Zelinsky 1970). In either direction, distance is an influential attribute. However, findings are not always consistent. Based upon these findings, it was expected that this variable is more prominent when tourists choose their long-haul or local leisure destinations. However, within a geographical scale of international tourists travelling within a destination country (intra-national or meso scale), it is hypothesised that although distance may still have some utilities on tourists' spatial choices, its effect is not very strong. The focus of this enquiry is how distance acts in a situation that tourists travel at the intra-national scale. If it has an effect, does it serve as a point of attractiveness or impediment?

## 8.4 THE DEPENDENT VARIABLE

As stated above, the dependent variable is a set of destination choices of tourists. Considering that it is almost impossible to model or interpret a model containing all the destinations in China, three gateway cities were chosen to represent the three main tourism regions in China (refer to Chapter 5.3). They were set into the choice set of the three logistic models as the events occurring. Moreover, because the logistic regression model requires that the choices of dependent variable are random and statically independent of each other, a category of 'Others' was formed. In each of the binary logistic regression models, if choice of one gateway city represents an event happening, the choice of 'Others' represents the event not happening. The three binary logistic regression models designed, therefore, are Logit I concerning the choice between Beijing and the rest; Logit II concerning the choice between Shanghai and the rest and Logit III concerning the choice of Guangzhou and the rest. The patterns of respondents' answers were re-categorised into the three variables in order to form the three choice sets.

One advantage in using this method is that it breaks up the four destination choices (Beijing, Shanghai, Guangzhou and Others) into three pairs, therefore, is less sensitive to the restraint of small sample size. Because each binary logistic model contains only dichotomous choices in the dependent variable, its cross-tabulation tables with independent variables are more robust to the numerical problem of zero-cell frequencies. Also, the use of the three separate binary analyses provides a mechanism for partitioning the whole data into three testing subsets and performs validation on the model generated and supports each others' finding (Hosmer and Lemeshow 1989: 171). This gives the analysis an overall outlook, as well as individual perspectives. By making these arrangements, although this research is unable to explore all the destinations in China, a spatial analysis with all the indispensable elements can still be carried out because these three gateways encapsulate the majority of the tourism characteristics in China from both the supply and demand sides.

## 8.5 THE INDEPENDENT VARIABLES

Another strength of the logistic regression model is that the model relates the dependent variable to more than one independent variables; and can involve variables with many types of measurements, such as categorical and numerical measurements. This characteristic is more flexible than the linear regression models. In order to build a rigorous logistic regression model, one of the essential steps of the model building is variable selection. The aim of the assessments of the independent variables is to ensure that independent variables, which could result in a 'best' logistic regression model within the scientific context of this research, enter into the model building with at least some relevance. It is well established that a good independent variable is one that has some relationship with the dependent variable, but has weak relationship with other independent variables (Hosmer and Lemeshow 1989).

Many criteria have been used to guide the entry of a variable, such as univariate logistic tests or subjective assessments. They generally vary from one problem to the other. Because this research uses three binary logistic regression analyses, the set of variables significant in one regression might be different from the others. Therefore, all the variables, which have been pre-considered as relevant biologically to this research problem were elicited from the survey and examined in Chapter 7. They were transformed as independent variables and included in the model building. The elimination of the non-significant variables could be carried out by means of stepwise procedure automatically in the SPSS programme.

Particular attention has been paid to zero-frequency or very small frequency cells in the contingency tables between the three dependent variables and different independent variables. With this numerical problem, the analyses could not be carried out. Reasonable re-coding of some of the variables was conducted, mainly by reducing categories of the variables. An examination of cross-tabulation between these variables and the dependent variable was conducted. Chi-square tests of each of the independent variable with the relevant dependent variables were also conducted in order to pre-examine their relationships with the dependent variables. Zero-frequency variables were subsequently eliminated using this approach, and only one independent variable still has one irremovable zero-cell in Logit III and was removed from this logit, but still included in the other two logits. For variables with very small frequency cells, it was considered acceptable as long as the expected counts exceed five percent in the cross-tabulation table (Field 2000: 64). The re-coding has also helped to achieve this objective. Continuous variables were not affected by this problem.

Based on the design in Chapter 6 (refer to Section 6.3.4), 19 variables divided into there groups – trip attributes, socio-cultural and demographic characteristics, were selected. Among them, the analysis focused on the effects of cultural and geographical distance. The following part examines them one by one (see Table 8-5).

### *8.5.1 Geographical distance*

The first independent variable is geographical distance. In order to test the effect of geographical distance on the spatial behaviour of tourists, the perception of tourists regarding geographical distance between their places of origin and the main destination of their choices in China was asked in the survey. This variable is perceived as the cognitive distance of tourists.

Chapter 6 (refer to Section 6.3.4) has justified that cognitive distance is a better depicter of the behavioural of tourists and their decision-making process. Other methods, such as real or zonal distance is difficult to measure, and not necessarily perceived with equal magnitude by tourists (such as Ankomah and Crompton 1992; Ankomah *et al.* 1996; Briggs 1973; Harrison-Hill 2001; Walmsley and Jenkins 1992a, 1992b).

In the original questionnaire, distance was measured in five categories, coded from 1 to 5 representing a perceived distance from very far to not far at all. It was realised that the five categories are too many for a cross-tabulation table, and there was overlapping information hidden in these five categories. In order to reduce them to more concise data pattern, and eliminate zero-frequency cells, they were reduced to three categories using the SPSS transformation function. This new variable was named as REGDISTA, and was coded as 1 = far, 2 = medium, and 3 = not far.

### *8.5.2 Cultural distance*

As clarified in Section 6.3.4, tourism researchers tend to use nationality, ethnicity or language as the proxies of culture in cross-cultural studies, the use of cultural distance has not been overly seen. Applying the notion of Confucian Dynamism, this research designed a list of individual rating for an exhaustive list of cultural difference attributes in the survey. Eight questions relating to tourists cultural awareness and value scales with reference to those of China were asked in a comparative way. It was considered that factor analysis can identify the underlying cognitive dimensions of these questions (refer to Section 6.5.4). Three factors were elicited from this analysis (see Table 8-1; refer to Appendix Seven). Based on the attributes located in each of them, they were named as 'understanding Chinese culture' (UNDER); 'egoism' (EGO) and 'maintaining harmony' (HARMO).

**Table 8 - 1 Results of the principle component analysis**

| *Questionnaire No.* | *Attributes* | *Mean* | *Factors 1* | *Factor 2* | *Factor 3* |
|---|---|---|---|---|---|
| 9 | Chinese language ability (Factor 1) | 4.02 | .766 | -8.280E-02 | .279 |
| 10 | Knowledge of Chinese culture (Factor 1) | 3.11 | .670 | -1.486E-02 | -2.977E-03 |
| 11 | Similarity of own and Chinese culture (Factor 1) | 3.42 | .886 | .151 | -7.948E-02 |
| 12 | Interrelationship of own and Chinese culture (Factor 1) | 2.87 | .748 | .287 | -.133 |
| 14.a | Respect authority (Factor 3) | 2.90 | -.199 | -4.555E-05 | .846 |
| 14.b | Face value (Factor 3) | 2.75 | .285 | .250 | .523 |
| 14.c | Maintain harmony (Factor 2) | 1.83 | 4.016E-04 | .860 | 2.322E-02 |
| 14.d | Adhere to social norms (Factor 2) | 2.24 | .134 | .804 | .148 |

Note: Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 5 iterations.
Kaiser-Meyer-Olkin measure of sampling adequacy: 0.689 (greater than 0.5)
Bartlett's test of sphericity: Approx. Chi-square: 400.922; df: 28; Sig. : 000.

Following this, the next step was to determine how well they represent cultural difference and their suitability in the following logistics regression analyses. T-test across 'ethnicity' (ETHNIC) (see Table 8-2 and Figure 8-2) and one-way ANOVA test across 'places of origin' (ORIGIN) (see Table 8-3 and Figure 8-2, refer to Appendix Eight) were performed on each of the three factors. Because ETHNIC and ORIGIN were regarded as the proxies of culture; therefore, both of the analyses need to reveal some associations between culture and the three factors elicited. Using these two approaches, if the three factors can be differentiated by ORIGIN and/or ETHNIC, their characteristics in representing cultural difference could be verified.

The results show that there are no equal associations between the chosen culture proxies and the three factors elicited. Although UNDER did not satisfy the assumption in ANOVA test, it passed the assumption test in t-test. UNDER can be differentiated by both REGORIGI and ETHNIC. HARMO attained a satisfactory outcome as well that it can be differentiated by both REGORIGI and ETHNIC. However, EGO does not show any statistical significance across both REGORIGI and ETHNIC providing no evidence that national or ethnic attributes had any effect on it. Therefore, UNDER and HARMO were used to represent the cultural distance attributes in the logistic regression analyses. EGO was excluded subsequently.

**Table 8 - 2 T-test of the three cultural factors against 'ethnicity' (ETHNIC)**

| Dep. variables | Levene's test F | Levene's test Sig. | t-test for equality of means t | df | Sig (2-tailed) | Mean difference | Std. error difference | 95% Confidence interval of the difference Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| UNDER | 0.050 | 0.824 | -12.371 | 209 | 0.000 | -1.478 | 0.119 | -1.713 | 0.824 |
| EGO | 0.946 | 0.332 | -0.097 | 209 | 0.923 | -0.015 | 0.157 | -0.325 | 0.332 |
| HARMO | 0.006 | 0.940 | -3.141 | 209 | 0.002 | -0.483 | 0.154 | -0.785 | 0.940 |

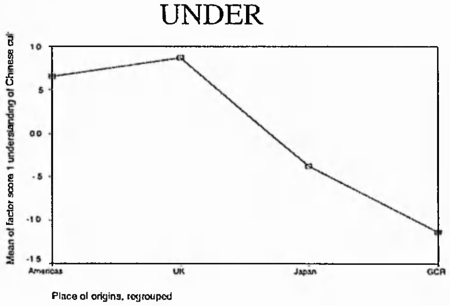
## Table 8 - 3 ANOVA of the cultural factors against 'places of origin' (REGORIGI)

| Dep. variable | Levene Statistic | | | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|---|---|---|
| UNDER | 7.016 | Between Groups | (Combined) | | 129.90 | 3 | 43.30 | 111.901 | 0 |
| (factor 1) | (sig. 0) | | Linear Term | Unweighted | 113.49 | 1 | 113.49 | 293.287 | 0 |
| | | | | Weighted | 109.01 | 1 | 109.10 | 281.714 | 0 |
| | | | | Deviation | 20.89 | 2 | 10.446 | 26.995 | 0 |
| | | Within Groups | | | 80.10 | 207 | 0.387 | | |
| | | Total | | | 210 | 210 | | | |
| EGO | 1.816 | Between Groups | (Combined) | | 3.00 | 3 | 1.000 | 1.000 | 0.394 |
| (factor 2) | (sig. .145) | | Linear Term | Unweighted | 1.93 | 1 | 1.932 | 1.932 | 1.166 |
| | | | | Weighted | 2.12 | 1 | 2.119 | 2.119 | 0.147 |
| | | | | Deviation | 0.88 | 2 | 0.441 | 0.441 | 0.644 |
| | | Within Groups | | | 207.00 | 207 | 1.000 | | |
| | | Total | | | 210 | 210 | | | |
| HARMO | 1.295 | Between Groups | (Combined) | | 31.85 | 3 | 10.617 | 12.337 | 0.000 |
| (factor 3) | (sig. .277) | | Linear Term | Unweighted | 0.00 | 1 | 0.005 | 0.006 | 0.940 |
| | | | | Weighted | 0.08 | 1 | 0.075 | 0.087 | 0.768 |
| | | | | Deviation | 31.78 | 2 | 15.888 | 18.461 | 0.000 |
| | | Within Groups | | | 178.15 | 207 | 0.861 | | |
| | | Total | | | 210 | 210 | | | |

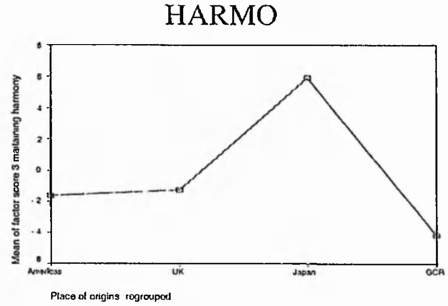
## Figure 8 - 2 Mean comparisons of UNDER and HARMO by REGORIGI and ETHNIC

(i). by REGORIGI

UNDER

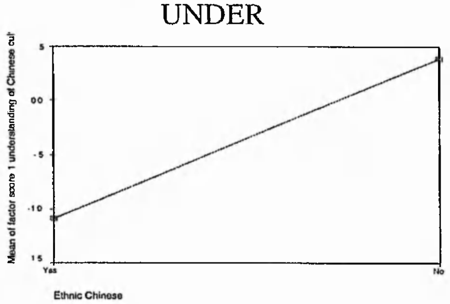



HARMO

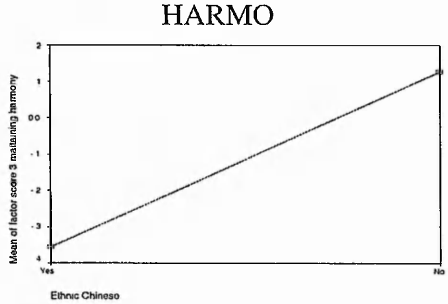



(ii). by ETHNIC (Yes = ethnic Chinese, No = non-ethnic Chinese)

UNDER




HARMO



### *8.5.3 Cultural proxies*

Despite these two cultural distance variables, the analysis also incorporates the following two direct culture variables - 'places of origin' (REGORIGI) and 'ethnicity'(ETHNIC). In this situation, the direct effects of these two variables could be investigated and compared with those of cultural distance.

#### 8.5.3.1 'Places of origin' (REGORIGI)

The initial answers to this question in the questionnaire were six. Given that this research focuses on cross-cultural differences in tourists from America, the UK, Japan and The GCRs, this variable was condensed into four categories. It was renamed as REGORIGI symbolizing by 1 = America, 2 = UK, 3 = Japan, and 4 = Great China Regions (the GCRs). The first three codes had no change. The 4$^{th}$ category contains the original categories 3, 4 and 5 specified in the questionnaires. They are Hong Kong and Macau SARs, Taiwan, and Southeast Asian countries because tourists from all four areas are ethnic Chinese (refer to Section 7.2).

#### 8.5.3.2 'Ethnicity' (ETHNIC)

Many researchers have studied this variable (Deborah and Williams 1993; Harrison-Hill 2001; Hutchison 1988; Ostergaard 1974; Vinod and Yochum 1999) and confirmed that it is a relevant variable to tourist behaviour. It was therefore considered in this model building. This variable has two categories. In the survey, the respondents were asked to answer if they are ethnic Chinese or not. 'Yes' represents ethnic Chinese and 'no' represents non-ethnic Chinese and was coded as 1 and 0 respectively. The cross-tabulation tables of this variable and three dependent variables reveal no zero-frequency cells. It was, therefore, used in the logit regression analyses without any changes.

### *8.5.4 Trip attributes*

Trip attributes refer to the travelling characteristics of tourists. Nine attributes are considered here. The purpose of including these variables is to understand how the SDIT is shaped by their travelling characteristics; particularly, how it is interrelated to the destination choices of tourists. Many of the attributes have been discussed in Chapter 7, and their involvements in this model building can reveal insights of their contributions to different preferences of tourists' travel. Destination attractiveness perceived by tourists is also discussed in the category.

#### 8.5.4.1 'Transport on arrival' (REDTRANS)

The original variable of 'transport on arrival' consisted of four categories, they were 1 = air, 2 = rail, 3 = sea, 4 = motor 5 = foot. However, a brief examination of the frequencies of these categories identified that there was a big distinction between travelling by air and travelling by the other means; all together, the other four methods yield very small number of tourist arrivals. It was considered, therefore, that it would be more meaningful and easier to incorporate to the model building with condensed categories: 1 = air travel and 2 = all the other four types of transport on arrival.

#### 8.5.4.2 'Types of travel group' (REGROUP)

This variable was involved because that the choices of different types of travel group are normally related to marketing arrangements; therefore, determine the destination choices of tourists (Flognfeldt 1999; Hsieh *et al.* 1994; Reid and Reid 1997). The initial variable had four categories: 1 = packaged tour, 2 = family, 3 = friends, and 4 = alone. The same situation happened as that in 'transport on arrival'. Categories 2 and 3 express similar situations that normally are discussed together. There were not many responses in category 4. Therefore, the latter three categories were combined as one category named as family/friends/alone. This new pattern thus expresses a distinction of marketing arrangements with 1 = packaged tour through tour operators; and 2 = the more self-contained travelling method.

#### 8.5.4.3 'Entry points' (ENTRY)

This variable describes how the three entry points of tourists, mainly the three gateway cities – Beijing, Shanghai and Guangzhou relate to the outcome variables. They were coded as 1, 2 and 3 respectively. In order to involve the rest of the possible entry points of tourists, a category of 'Others' was coded as 4. This original coding pattern was kept because the numbers of tourists among the four categories are well balanced and no extreme small or zero-frequency cells were identified.

#### 8.5.4.4 '2$^{nd}$ places visited' (PLACE2RE)

This variable has been studied in Chapter 7 and transformed into a different type of variable –types of 2$^{nd}$ places visited, instead of specific locations of 2$^{nd}$ places visited (refer to Section 7.3.7). It was named as PLACE2RE and coded into four categories in which 1 represents no 2$^{nd}$ places visited; 2 represents that tourists continued their journeys to one of the three gateways; 3 signifies that tourists continued their travel in the same tourism region of their entry points; and 4 represents that tourists travelled to other tourism regions which were different from their entry points. By this transformation, there are enough frequencies in each cell for the regression analysis; it can also convey a sense of travel patterns. The original understanding of the specific places tourists visited was modified to the understanding of the directions tourists travelled across a broad geographical region.

#### 8.5.4.5 'Attractiveness of the main destination' (REGATTRA)

Similar to the application of perceived distance by tourists, this variable is measured using cognitive attractiveness of tourists as well. This approach can reflect the internal feelings of tourists instead of measuring the external environment and summarises all the physical and cultural features of an attraction into a single psychological factor, therefore it is simpler and easier to explore and interpret than involving too many parallel variables in model building. In the questionnaire, the degree of the perceived attractiveness of the main destinations of tourists was measured in a 5-Likert scale with 1 representing very much (attractive) to 5 representing not (attractive) at all. Yet, a testing univariate logistic regression analysis of the relationships between this variable with the dependent variables showed that some of its categories produced similar coefficient results indicating that the divisions of these categories contained overlapping information. Therefore, its measurement was reduced from five to three categories. Categories 1 and 2 were compressed into 1 representing much; category 3 had no change; and categories 4 and 5 were condensed into 4 representing not much. They denote high, medium and low levels of perceived attractiveness of the main destination of tourists.

#### 8.5.4.6 'Trip expenses' (REGSPEND)

The original coding of this variable in the questionnaire had four categories. They were 1 = below US$500, 2 = US$500-800, 3 = US$800-1000, 4 = above US$1000. This pattern seemed to be too fine for the logistic regression analysis because in the crosstabulation tables, zero-frequency cells were identified. It was then reduced from four categories to three categories to denote high, medium and low levels of travel expenses. The mew coding of the variable is 1 = below US$800, 2 = US$800-1000, 3 = above US$1000. No similar numerical problems have been found any more.

#### 8.5.4.7 'Number of previous visitations' (PREVIOUS)

Many researchers have discussed the importance of previous experience with destinations and have noticed the difference of tourists' travel behaviour between first-time and repeated visitors (Fesenmaier 1985; Gyte and Phelps 1989; Oppermann 1997, 1998; Watson, Roggenbuck and Williams 1991; Woodside and Lysonski 1989; Woodside and MacDonald 1994). However, research findings are not consistent. Chapter 7 also discussed it and it is recognised further insight needs to be shed on this attribute. In the survey, the respondents were asked to answer their actual numbers of visitation previously (including the one they were surveyed). This variable is entered as a continuous variable.

#### 8.5.4.8 'Duration in the country' (TOTALDUR) and 'Duration in the entry point' (ENTRYDUR)

Researchers have found out that time availability of tourists is an important element in determining cross-cultural differences of tourists travelling patterns (such as Reid and Reid 1997; Richardson and Crompton 1988b). Two time related variables are considered in this research. One is 'Duration in the country' (TOTALDUR) and one is 'Duration in the entry point' (ENTRYDUR). The answers to these two variables in the questionnaire were the actual number of days tourists stayed in the whole country and their entry points. They are all used as continuous variables.

### *8.5.5 Socio-demographic attributes*

For many tourists' behaviour research, the consideration of socio-demographic features of study subjects is indispensable (such as Richardson and Crompton 1988b; Sussmann and Rashcovsky 1997). Five socio-demographic variables are considered. They are gender (GENDER), age (REGAGE), marital status (MARRIAGE), final levels of education (REGEDUCA) and levels of income (REGINCOME) of tourists. GENDER and MARRIAGE had no change deriving from the original questionnaires because their simple and easy ways of coding. In GENDER, 1 represents female and 0 represents male. In MARRIAGE, 1 represents married and 0 represents single.

It was found that all the other three variables had some insignificant categories and this could increase the difficulties in the logistic regression model building and interpretation. Also, the frequency entered in each cell of the cross-tabulation tables by the three dependent variables was not all acceptable. Therefore, they were all compressed in order to eliminate this numerical problem. REGEDUCA and REGINCOM were reduced from five to three categories representing high, medium and low levels of education and income. REGAGE was reduced from four to two categories divided by 45 representing older and younger age categories. They were renamed as REGEDUCA (final levels of education), REGINCOM (levels of income) and REGAGE (age categories).

After the transformation of these variables, only one variable - PLACE2RE was identified as still having a zero-frequency cell by one dependent variable - Guangzhou versus Others. This numerical problem could not be simply eliminated by reducing categories, because that would make PLACE2RE lose its original research purpose. In the meantime, two of its cells have very low entry frequencies, of 0.9 per cent, and 1.9 per cent, which were considered not ideal to a logistic regression analysis (see Table 8-4). Therefore, PLACE2RE was considered include in Logit I and II but not Logit III. Except for PLACE2RE, the final crosstabulation tables of all the other independent variables with the three dependent variables were free from zero-frequency cells and had reasonable expected counts. They were included in all the three logit building.

**Table 8 - 4 Crosstabulation of Guangzhou versus Others with '2nd place visited' (PLACE2RE)**

| | | *2nd Place visited (PLACE2RE)* | | | | *Total* |
|---|---|---|---|---|---|---|
| | | *No 2nd place* | *Gateways* | *Same region* | *Other region* | |
| Guangzhou vs. Others | Guangzhou | | | | | |
| | Count | 17 | 2 | 4 | 0 | 23 |
| | % within Guangzhou vs. Others | 73.9% | 8.7% | 17.4% | 0 | 100% |
| | % within 2nd place visited, region | 27.4% | 4.9% | 4.4% | 0 | 10.8% |
| | % of Total | 8.0% | 0.9% | 1.9% | 0 | 10.8% |
| | Others | | | | | |
| | Count | 45 | 39 | 86 | 19 | 189 |
| | % within Guangzhou vs. Others | 23.8% | 20.6% | 45.5% | 10.1% | 100% |
| | % within 2nd place visited, region | 72.6% | 95.1% | 95.6% | 100% | 89.2% |
| | % of Total | 21.2% | 18.4% | 40.6% | 9.0% | 89.2% |
| Total | Count | 62 | 41 | 90 | 19 | 212 |
| | % within Guangzhou vs. Others | 29.2% | 19.3% | 42.5% | 9.0% | 100% |
| | % within 2nd place visited, region | 100% | 100% | 100% | 100% | 100% |
| | % of Total | 29.2% | 19.3% | 42.5% | 9.0% | 100% |

**Table 8 - 5 Coding and re-coding of the dependent and independent variables**

| Questionnaire No. | Symbol | Variable description | Original code | Revised code |
|---|---|---|---|---|
| | **Dependent variables for the binary logistic regression models** | | | |
| 1 | BJVSOTH | The choice of Beijing vs. others | 1 = Beijing, 0 = Others | |
| 1 | SHAVSOTH | The choice of Shanghai vs. Others | 1 = Shanghai, 0 = Others | |
| 1 | GUAVSOTH | The choice of Guangzhou vs. Others | 1 = Guangzhou, 0 = Others | |
| | **Cultural and geographical independent variables** | | | |
| 15 | REGDISTA | Geographical distance (regrouped) | 1 = very far, 2 = far, 3 = medium, 4 = not far, 5 = not far at all | 1 = far, 2 = medium, 3 = not far |
| 26 | REGORIGI | Places of origin (regrouped) | 1 = America<br>2 = UK<br>3 = Japan<br>4 = Hong Kong/Macau SARs<br>5 = Taiwan<br>6 = Southeast Asia | 1 = America<br>2 = UK<br>3 = Japan<br>4 = GCRs |
| 18 | ETHNIC | Ethnicity | 1 = ethnic Chinese, 0 = non ethnic Chinese | |
| 9, 10, 11, 12, 14 | UNDER | Understanding of Chinese culture | Factor 1 from the principal component analysis | Continuous variable: see Table 8-7 |
| 9, 10, 11, 12, 14 | HARMO | Maintaining harmony | Factor 3 from the principal component analysis | Continuous variable: see Table 8-7 |
| | **Travel attributes independent variables** | | | |
| 4 | REDTRANS | Transport on arrival | 1 = air, 2 = rail, 3 = sea, 4 = motor, 5 = foot | 1 = air, 2 = rail/sea/motor/foot |
| 5 | PREVIOUS | Number of previous visitations | Actual number of visitations | Continuous variable: see Table 8-7 |
| 6 | REGGROUP | Types of travel group | 1 = packaged tour, 2 = family, 3 = friends, 4 = alone | 1 = packaged tour, 2 = family/friends/alone |
| 8 | ENTRY | Entry points | 1 = Beijing, 2 = Shanghai, 3 = Guangzhou, 4 = Others | |
| 8 | ENTRYDUR | Duration in the entry point | Actual number of duration | Continuous variable: see Table 8-7 |
| 8 | PLACE2RE | 2nd places visited, region | Actual names of different places | 1 = no 2nd place visited<br>2 = gateways,<br>3 = same region,<br>4 = other region |
| 20 | TOTALDUR | Duration in the country | Actual number of duration | Continuous variable: see Table 8-7 |
| 13 | REGATTRA | Attractiveness of the main destination | 1 = very much, 2 = much<br>3 = neutral, 4 = not much<br>5 = not at all | 1 = much<br>2 = neutral<br>3 = not much |
| 21 | REGSPEND | Trip expenses (regrouped) | 1 = below US$500<br>2 = US$500–800<br>3 = US$800-1000<br>4 = above US$1000 | 1 = below U S$800,<br>2 = US$800-1000,<br>3 = above US$1000 |
| | **Socio-demographic independent variables** | | | |
| 17 | GENDER | Gender | 1 = male, 0 = female | |
| 22 | REGEDUCA | Final levels of education (regrouped) | 1 = below high school<br>2 = high school<br>3 = undergraduate/college<br>4 = postgraduate<br>5 = others | 1 = high school and below<br>2 = undergraduate/college<br>3 = postgraduate and others |
| 23 | REGINCOM | Income levels (regrouped) | 1 = below US$10000<br>2 = US$10000-20000<br>3 = US$20000-30000<br>4 = US$30000-40000<br>5 = above US$40000 | 1 = below US$30,000<br>2 = US$30,000-40,000<br>3 = above US$40,000 |
| 24 | REGAGE | Age categories (regrouped) | 1= below 24<br>2 = 25-44<br>3 = 45-65<br>4 = above 65 | 1 = below 45<br>2 = above 45 |
| 25 | MARRIAGE | Marital status | 1 = single, 0 = married | |

## 8.6 THE SUITABILITY OF THE DATA

The suitability of data can have significant impact on the final outcomes. This part will discuss this issue prior to the model building. First, suitable chi-square tests of these variables with the three dependent variables and their crosstabulation tables have been examined in order to check the reliability of the independent variables. It seems that these variables have no significant conceptual and statistical problems in representing the desired measurements of the attributes of interests.

The second examination considers the missing values of the data collected. As specified in Chapter 7, the sampling process was a multistage stratified and geographically clustered method, responses within the desired sampling frame were kept as usable samples. The input of the data analysis has not involved the respondents with significant missing values, and the data collected do not have large quantities of missing data. For this reason, the effect of missing data was not regarded as a major concern.

However, the balance between the dichotomous choices of two of the dependent variables caused some concerns. There are 210 cases in the analysis of Logit I (2 missing cases). Among them, 81 cases answered 'Others' and 129 cases answered 'Beijing' as their main destinations. It was accepted that the frequencies of these two choices are well balanced. For Logit II, there are 212 cases in the analysis, no missing cases were identified. Among them, 189 cases answered 'Others' and 23 answered 'Shanghai'. This distribution between these two dichotomous choices is not balanced. A similar situation was observed in Logit III. There are 211 cases in this logit (1 missing case), 188 cases answered 'Others' and 23 answered 'Guangzhou'. In both instances, Others are over-represented while Shanghai and Guangzhou are under-represented. The logistic regression model building was still used with extra caution against the assessments and interpretations of their final outcomes because although these values of frequency suggest that they are not well balanced, this is not a definite indication of a problem (Greene 1997).

The third consideration relates to the detection of the outliers in the 212 cases. A multivariate detection using Mahalanobis distance statistics for each case was conducted. This technique identifies cases with unusual combinations of values for the independent variables and cases that may have a large impact on the three logits. Some extreme cases occurred in different logits (see Table 8-6). However, close observations of these cases did not show that they have unique characteristics in comparison with the remainder of the respondents. It is cautious that they should not be simply eliminated from the analysis. Proper diagnostic tests will be performed after each model building in order to detect if they or any other cases may have significant impacts on the outcomes.

**Table 8 - 6 Extreme values of Mahalanobis distance for the three logits**

| | Case Number for Logit I | Value | Case Number for Logit II | Value | Case Number for Logit III | Value |
|---|---|---|---|---|---|---|
| Highest | 24 | 130.60344 | 24 | 130.60822 | 41 | 124.33015 |
| | 41 | 124.18768 | 41 | 122.21844 | 7 | 79.71785 |
| | 7 | 79.86534 | 104 | 85.76364 | 37 | 74.95381 |
| | 37 | 74.94782 | 7 | 80.08736 | 57 | 37.39488 |
| | 57 | 37.38228 | 37 | 74.78625 | 77 | 36.09656 |
| Lowest | 154 | 4.83602 | 154 | 4.57968 | 154 | 4.64347 |
| | 156 | 5.52297 | 138 | 5.13031 | 147 | 6.33086 |
| | 158 | 6.30855 | 156 | 5.27202 | 204 | 6.43690 |
| | 164 | 6.33425 | 142 | 5.47101 | 127 | 6.82812 |
| | 147 | 6.35170 | 158 | 6.00905 | 142 | 6.89591 |

Note: Mahalanobis distance value based on all the 19 independent variables

Thirdly, in regression analysis, rarely, are assumptions not violated one way or another (Norušis 1993: 337). One of the biggest advantages in using the logistic regression is that it does not strictly rely on distributional assumptions that other techniques do, such as discriminant analysis (Hair 1998: 276). Therefore the examination of these assumptions could be relaxed.

One unique assumption of logistic regression analysis is the IIA assumption. Under this assumption, a change in the attributes of one alternative changes the probabilities of the other alternatives proportionately (Train 1998; Stynes and Peterson 1984). The strength and weakness of the logistic regression model are both derived from this main assumption. As discussed in Chapter 6 (refer to Section 6.3.3), if the IIA assumption holds, adding more choices into the dependent variable should yield roughly the same coefficients and model statistics. The simplest way to avoid the failure of the IIA assumption is to carefully define truly independent alternatives in a dependent variable (Stynes and Peterson 1984). In this research, the use of the binary logistic regression model has the advantage in reducing the violation of this assumption. Because, unlike multinomial regression, the dependent variable contains only dichotomous alternative sets. Given this situation, it was considered that the data collected satisfy the basic requirements of the binary logistic analysis; the actual model building could be continued. Detailed diagnostic tests and the examination of the validity of the predicted outcomes will still be performed after obtaining each logit in order to inspect possible undue influences of unique cases and the presence of multicollinearity among independent variables.

The final assessment of the data regarding the linearity of the continuous variables in the logistic regression models (Hosmer and Lemeshow 1989). Five continuous variables were assessed. They are 'Number of previous visitations' (PREVIOUS), 'duration in the entry place' (ENTRYDUR), 'duration in the whole country' (TOTALDUR), 'understanding of Chinese culture' (UNDER), and 'Maintaining harmony' (HARMO).

It is maintained only when the continuous variables satisfy the assumption of linearity, should they be included in the logistic model building as continuous form; otherwise, non-linear continuous variables need to be transformed into categorical variables (Hosmer and Lemeshow 1989). The method used to examine the linearity of these variables was the Box-Tidwell (1962) approach. The basic method of this approach is to add a term of the form $x\ln(x)$ into the logistic models ($x$ denotes the continuous variable). If the coefficient for this variable is significant in the model, then there is evidence that the original $x$ is non-linear in the logit (Box and Tidwell 1962; Guerro and Johnson 1982; Hosmer and Lemeshow 1989: 89-90).

After this, the transformation of a non-linear continuous numerical variable to a discrete number of categories was conducted by the SPSS programme. The procedure creates new variables containing the categorical data based on percentile groups of the continuous variable, with each group containing approximately the same number of cases (Norusis

1993). The results show that in Logit I, PREVIOUS, in Logit III, PREVIOUS and TOTALDUR were non-linear variables and were transformed accordingly. Others remain continuous variables in respective logits (see Table 8-7).

**Table 8 - 7 An examination of linearity of the six continuous variables**

| Logits | Variables | B | S.E. | Wald | df | Sig. | Linearity | Entering Method | New Symbol & Recoding |
|---|---|---|---|---|---|---|---|---|---|
| Logit I: Beijing vs. Others | PREVIOUS | .300 | .101 | 8.839 | 1 | .003 | Non-linear | Categorical | REGPREV: 0=0 times; 1=once or twice; 2=above twice |
| | LNPREVIO | -.173 | .067 | 6.606 | 1 | .010 | | | |
| | ENTRYDUR | -.286 | .209 | 1.865 | 1 | .172 | linear | Numeric | |
| | LNENTDUR | .187 | .150 | 1.551 | 1 | .213 | | | |
| | TOTALDUR | -.326 | .221 | 2.182 | 1 | .140 | Linear | Numeric | |
| | LNTOTDUR | .210 | .144 | 2.112 | 1 | .146 | | | |
| | UNDER | 2.722 | 3.971 | .470 | 1 | .493 | Linear | Numeric | |
| | LNUNDER | 2.722 | 3.453 | .622 | 1 | .430 | | | |
| | HARMO | 4.653 | 5.090 | .836 | 1 | .361 | Linear | Numeric | |
| | LNHARMO | 4.443 | 4.522 | .966 | 1 | .326 | | | |
| Logit II: Shanghai vs. Others | PREVIOUS | -.149 | .124 | 1.437 | 1 | .231 | Linear | Numeric | |
| | LNPREVIO | .076 | .079 | .934 | 1 | .334 | | | |
| | ENTRYDUR | .138 | .307 | .203 | 1 | .652 | Linear | Numeric | |
| | LNENTDUR | -.143 | .208 | .473 | 1 | .491 | | | |
| | TOTALDUR | .177 | .161 | 1.219 | 1 | .270 | Linear | Numeric | |
| | LNTOTDUR | -.087 | .089 | .963 | 1 | .326 | | | |
| | UNDER | 8.324 | 6.983 | 1.421 | 1 | .233 | Linear | Numeric | |
| | LNUNDER | 6.547 | 5.950 | 1.210 | 1 | .271 | | | |
| | HARMO | -10.912 | 6.333 | 2.969 | 1 | .085 | Linear | Numeric | |
| | LNHARMO | -9.625 | 5.672 | 2.880 | 1 | .090 | | | |
| Logit III: Guangzhou vs. Others | PREVIOUS | -.688 | .184 | 13.957 | 1 | .000 | Non-linear | Categorical | REGPREV: 0=0 times; 1=once or twice; 2=above twice |
| | LNPREVIO | .410 | .128 | 10.310 | 1 | .000 | | | |
| | ENTRYDUR | -.106 | .398 | .070 | 1 | .791 | Linear | Numeric | |
| | LNENTDUR | .106 | .327 | .105 | 1 | .746 | | | |
| | TOTALDUR | .714 | .202 | 12.449 | 1 | .000 | Non-linear | Categorical | REGTOTDU: 1=1-4 days; 2=5-9 days; 3= 10-15 days; 4= >15 days |
| | LNTOTDUR | .351 | .106 | 11.015 | 1 | .001 | | | |
| | UNDER | -8.635 | 6.084 | 2.015 | 1 | .156 | Linear | Numeric | |
| | LNUNDER | -8.172 | 5.211 | 2.459 | 1 | .117 | | | |
| | HARMO | .458 | 12.382 | .001 | 1 | .971 | Linear | Numeric | |
| | LNHARMO | -.691 | 10.666 | .004 | 1 | .948 | | | |

Note: The formula of this transformation is $x \times Ln(x)$ ($x$ is a continuous variable); the obtained variables using this formula were named in the column of *Variables*.

All the qualitative variables are illustrated in Table 8-8. One category of the variables is treated as base level for comparison. The coding method of these design variables in the three logits was contrast coding method using 0 or 1. In this method, the reference category used is the last category to which all the other categories are to be compared and it was coded zero (Field 2000; Hosmer and Lemeshow 1989).

**Table 8 - 8 Categorical variables coding**

| *Independent variables* | *Categories* | *Frequency* | *Parameter coding (design variables)* | | |
|---|---|---|---|---|---|
| | | | *(1)* | *(2)* | *(3)* |
| RGORIGI (places of origin) | Americas | 56 | 1.000 | .000 | .000 |
| | UK | 47 | .000 | 1.000 | .000 |
| | Japan | 60 | .000 | .000 | 1.000 |
| | GCRs | 48 | .000 | .000 | .000 |
| ENTRY (entry point) | Beijing | 105 | 1.000 | .000 | .000 |
| | Shanghai | 52 | .000 | 1.000 | .000 |
| | Guangzhou | 24 | .000 | .000 | 1.000 |
| | Others | 30 | .000 | .000 | .000 |
| PLACE2RE (2nd place visited, region) | No 2nd place visited | 62 | 1.000 | .000 | .000 |
| | Gateways | 41 | .000 | 1.000 | .000 |
| | Same region | 89 | .000 | .000 | 1.000 |
| | Other region | 19 | .000 | .000 | .000 |
| REGTOTDU (Duration in the country) | 1-4 days | 39 | 1.000 | .000 | .000 |
| | 5-9 days | 80 | .000 | 1.000 | .000 |
| | 10-15 days | 61 | .000 | .000 | 1.000 |
| | >15 days | 31 | .000 | .000 | .000 |
| REGPREV (number of visitations previously) | 0 times | 109 | 1.000 | .000 | |
| | Once or twice | 46 | .000 | 1.000 | |
| | Above twice | 56 | .000 | .000 | |
| REGINCOM (income level) | Below US$30000 | 84 | 1.000 | .000 | |
| | US$30000-40000 | 26 | .000 | 1.000 | |
| | Above US$40000 | 101 | .000 | .000 | |
| REGEDUCA (final level of education) | High school and below | 47 | 1.000 | .000 | |
| | Undergraduate/College | 90 | .000 | 1.000 | |
| | Postgraduate and above | 74 | .000 | .000 | |
| REGSPEND (trip expense) | Below US$800 | 60 | 1.000 | .000 | |
| | US$800-1000 | 29 | .000 | 1.000 | |
| | Above US$1000 | 122 | .000 | .000 | |
| REGDISTA (Geographical distance) | Far | 88 | 1.000 | .000 | |
| | Medium | 111 | .000 | 1.000 | |
| | Not far | 12 | .000 | .000 | |
| REGATTRA (Attractiveness of the main destination) | Very much | 158 | 1.000 | .000 | |
| | Neutral | 39 | .000 | 1.000 | |
| | Not much | 14 | .000 | .000 | |
| REGGROUP (type of travel group) | Packaged tour | 129 | 1.000 | | |
| | Family/Friends/Alone | 82 | .000 | | |
| MARRIAGE (marital status) | Single | 67 | 1.000 | | |
| | Married | 144 | .000 | | |
| REGAGE (age categories) | Below 45 | 88 | 1.000 | | |
| | Above 45 | 123 | .000 | | |
| GENDER | Male | 121 | 1.000 | | |
| | Female | 90 | .000 | | |
| ETHNIC (Ethnicity) | Ethnic Chinese | 55 | 1.000 | | |
| | Non ethnic Chinese | 156 | .000 | | |
| REDTRANS (Transport on arrival) | Air | 190 | 1.000 | | |
| | Rail/Sea/Motor/Foot | 21 | .000 | | |

## 8.7 THE LOGISTIC REGRESSION MODEL BUILDING

Having specified the model structure, resolved the dependent variables, and assessed and defined the scales of the independent variables, the next step is to fit different combinations of independent variables into the logistic regression functional form with dependent variables. The purpose is to find out the best suitable relationship between dependent and independent variables. Many methods could be used to conduct the logistic regression analysis. Stepwise approaches have been commonly adopted as effective situations of hypotheses testing (Agresti and Finlay 1986; Field 2000; Menard 1995). In this analysis, the principle of the model building strategy was essentially backward selection that commenced with all the independent variables. The SPSS then tests whether any variable can be removed from the model without affecting the model fit significantly. The advantages of backward stepwise over forward method include that it builds a model in a sequential way, which is simple and easily manipulated. Close examination and detailed comparisons of different models with and without the variables in interest could be conducted step by step. This allows improvements of the model through a hierarchical order, so that important variables and model structures are not easily misinterpreted (Field 2000: 169-170).

An important statistic in the logistic regression model is the likelihood ratio (LR). It is used to reflect the overall model fit as well as individual variable's contribution to the model. In a backward stepwise procedure, this statistic is commonly used as the criterion for removal of variables in which the current model is compared to the model without the variable in question. This approach is termed Backward LR stepwise procedure. In addition to LR, some other key statistics, such as odd-likelihood (-2LL) ratio, Wald statistic and chi-square of variable effects and significance levels could also be used. But none of them are as effective as LR. Particularly, Wald statistics has unstable properties and could mislead in some aspects (Field 2000; Hosmer and Lemeshow 1989). This research chooses to use LR method because of its robust and reliable characteristics. Also, the criteria by which variables are entered into and removed from the equation could be controlled.

The choice of the threshold $p$-value of the likelihood chi-square test can determine how many variables are included in the final model. 0.05 is normally the default entry level. However, it has been argued that the results of using 0.05 as the entry $p$-value are too stringent, often excluding important variables from the logistic regression models. Using a $p$-value in the range of 0.15 to 0.20 has been recommended because a larger $p$-value might include more variables in the model, thus provide a more complete picture of the studied topic. Taking account of these points, the entry $p$-value of the independent variables into the logistics model building was set as 0.25. This is because in this research, three logits were being considered. Some variables having weak associations with one outcome variable might have strong relationships with others. They might also become important if they are considered together with other independent variables (Bendel and Afifi 1977; Costanza and Afifi 1979; Hosmer and Lemeshow 1989).

Using the three dependent variables, three logistic regression models were built. The processes proceeded sequentially by excluding the variables which did not yield satisfactory statistical significance until an acceptable representation of the survey data was achieved; and the overall model fittings as well as the individual fitting of each independent variable contained were good. Once the final three logits were created, a more detailed assessment was conducted on each of them to check the overall fit of the models and the performances of the variables included. These were verified by the Wald statistics and their significance levels firstly, and then the goodness of fit statistics including the minus two odd-likelihood ratios (-2LL) of the logistic model and its significance level, the individual –2LL of reduced models and their $p$-values, Hosmer and Lemshow statistics, the Cox & Snell $R^2$ and the Nagelkerke $R^2$, the Classification matrices, etc. The significance level for all the significance testing was set at 95% and/or 90%.

Finally the diagnostic tests were conducted to see how well the model fits the observed data. Additionally, as with other forms of regression, multicollinearity among the predictors can lead to biased estimates and inflated standard errors. Examinations of multicollinerity of the independent variables left in the final logits were conducted. Based on these assessments, interpretations of all the produced logits and predicted values were attempted. The following part explains and assesses the three logits one by one.

## 8.8 LOGIT I BEIJING VS. OTHERS

This logit was built to estimate the probability of tourists visiting Beijing versus those visiting places other than Beijing while identifying the important influential variables for this estimation. The dependent variable is entitled BJVSOTH which has Beijing and Others as its two dichotomous choices: 0 = Others; 1 = Beijing. The initial entry of this model contains all the 19 independent variables specified above. Among them, four variables - ENTRYDUR, TOTALDUR, UNDER and HARMO are continuous variables (refer to Appendix Nine (a)).

At the initial step (Step 0), the model contains only the constant term. The Roa's efficient score statistics are used (Field 2000: 176). It tests the associations between the dependent variable and independent variables. These scores for the 19 independent variables identify those entered into the Backward LR stepwise procedure. The most important independent variables are those that have high Roa score values. They are REDTRANS, REGPREV, ENTRY, REGGROUP, REGDISTA, REGORIG, ETHNIC, REGINCOM, UNDER, and HARMO. Associated with them are $p$-values smaller than 0.1 indicating that these variables are associated with the dependent variable and could potentially make good contributions to the logistic regression model.

The variables, which show low score values, are ENTRYDUR, GENDER, REGSPEND, REGEDUCA, MARRIAGE and REGAGE, and some categories of the design variables. Although it might indicate that these variables have low associations with the outcome variable, the next step of the model building included all of them because, when they are considered with other variables, their significance levels might be different.

### *8.8.1 Testing the coefficients and assessing the goodness of fit*

At the final step of the model building, the SPSS programme reports the variables left in the final model, including their parameters and results of significant tests. The procedure of the model building stops at Step 15. These variables are those that the model attempts to discover, and they contribute to the logistic model building. In the logistic regression model, the test, that the coefficient of a variable is significant, can be based on Wald statistic. A significant Wald statistic indicates that the predictor makes a significant contribution to the model fitting.

Table 8-9 contains the estimated coefficients (*B*) and related Wald statistics from the final step of Logit I. The column of *sig.* shows that all the Wald statistics of the independent variables left at the last step are significantly different from zero at either 0.05 or 0.10 level. For categorical variables with more than one degree of freedom, overall Wald statistics were produced. Although some of the categories of these variables are not very significant, such as REGATTRA (1), REGINCOM (1), the overall Wald statistics of these variables are acceptable. This suggests that the independent variables included in Logit I are significant and their interpretations could be carried on.

**Table 8 - 9 Independent variables left at the final step – Logit I (1)**

| Variables | B | S.E. | Wald | df | Sig. |
|---|---|---|---|---|---|
| 1. REGGROUP(1) | 1.056 | .417 | 6.409 | 1 | .011 |
| 2. ENTRY | | | 50.050 | 3 | .000 |
| ENTRY(1) | 1.581 | .517 | 9.357 | 1 | .002 |
| ENTRY(2) | -1.164 | .526 | 4.907 | 1 | .027 |
| ENTRY(3) | -3.287 | .922 | 12.702 | 1 | .000 |
| 3. REGATTRA | | | 5.190 | 2 | .075* |
| REGATTRA(1) | -1.185 | .962 | 1.516 | 1 | .218 |
| REGATTRA(2) | -2.087 | 1.059 | 3.881 | 1 | .049 |
| 4. REGEDUCA | | | 5.016 | 2 | .081* |
| REGEDUCA(1) | 1.161 | .573 | 4.108 | 1 | .043 |
| REGEDUCA(2) | .823 | .446 | 3.409 | 1 | .065* |
| 5. REGINCOM | | | 7.852 | 2 | .020 |
| REGINCOM(1) | .077 | .437 | .031 | 1 | .861 |
| REGINCOM(2) | -1.519 | .586 | 6.714 | 1 | .010 |
| Constant | .683 | 1.085 | .396 | 1 | .529 |

Note: a. * represents a significance level of 0.1.
b. B = logistic coefficient; S. E. = standard error; Wald = Wald statistic; Sig. = significance level.

However, the properties of the Wald statistic are unstable, especially when there is limited sample size or the absolute values of regression coefficient (*B*) are too large. In this situation, it is also important to examine the change in the -2LL when a variable is entered into a model (Field 2000; Hauck and Donner 1977; Menard 1995; Norušis 1999). SPSS programme reports a transformed log-likelihood statistic – -2LL which is analogous to the error sum of squares in multiple regressions and as such is an indicator of how much unexplained information there is after the model has been fitted. The larger the statistic, the more poorly fitting the model is, and the more unexplained observations by the model. Table 8-10 tells the changes of -2LL when each of the five variables at the final step was removed from the model. Resembling the Wald test results, although REGATTRA and REGEDUCA have relatively larger $p$-values they can be significant if the significance level is relaxed to 90%. The other three variables – REGGROUP, ENTRY, and REGINCOME, are more significant than these two. It is quite certain that the five variables left make good contributions to Logit I. And the supposition that the relationships between the dependent variable with REGGROUP and ENTRY are stronger than those with REGATTRA and REGEDUCA.

**Table 8 - 10 Model if term removed at the final step – Logit I (1)**

| *Variables* | *Model Log Likelihood* | *Change in -2LL* | *Df* | *Sig. of the Change* |
|---|---|---|---|---|
| REGGROUP | -93.023 | 6.678 | 1 | .010 |
| ENTRY | -129.656 | 79.945 | 3 | .000 |
| REGATTRA | -92.404 | 5.441 | 2 | .066* |
| REGEDUCA | -92.314 | 5.259 | 2 | .072* |
| REGINCOM | -93.849 | 8.330 | 2 | .016 |

Note: * significance level is 0.1.

Despite these individual tests, the overall -2LL test shows similar outcome. When only the constant term was included in the logit, -2LL for the model was 281.951. But at the final step after the backward LR stepwise procedure, the -2LL in the final model was reduced to 179.368, a decrease of 102.583. This indicates that the model as a whole has been substantially improved. In order to assess how much improvements the new model predicts the dependent variable, the step model chi-square tests were examined. At the final step, all the block and model chi-square statistics are significant at 0.05 level indicating a strong improvement of the models with different sets of the independent variables and the model with only the constant term.

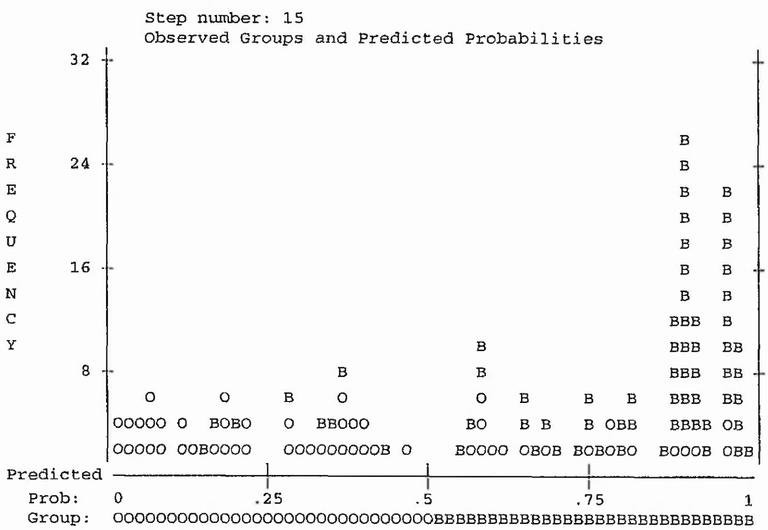
The two statistics, which are similar to $R^2$ in a linear regression – the *Cox & Snell* $R^2$ and the *Nagelkerke* $R^2$, represent the proportion of explained 'variation' in the logistic regression model (Hosmer and Lemeshow 1989). The higher the value of these statistics, the greater the model fits. In the final model, the *Cox & Snell* $R^2$ value is 0.385, the *Nagelkerke* $R^2$ value is 0.522. These figures indicate that almost half of the 'variations' in the dependent variable are explained by the logistic regression model.

The Hosmer and Lemeshow test is a commonly used method to examine how closely the observed and the predicted probabilities of the dependent variable match. A smaller difference indicates a better fit (Hair *et al.* 1998; Norušis 1999). From Step 14, the chi-square values drop notably, and chi-square test results at the final two steps are 5.060 and 8.122; and the significance levels of them are 0.751 and 0.422. These two insignificant test results indicate that the null hypothesis about no difference between the observed and the predicted values existing could not be rejected. This provides further support for not rejecting the final model.

The classification matrix illustrates the difference between the predicted and the observed group memberships of the dependent variable. The cut value is 0.5. When the model has only a constant term, its overall ratio of correctly predicted is 61.1%. But in the final model, of the tourists who visited Beijing, 72% were correctly classified. Of the tourists who did not visit Beijing, 88.4 were correctly classified. The overall ratio is 82%, which is very high for a multi-variable model. This gives a strong indication that the model is well fitted, and is statistically significant at the overall model level as well as for the individual variables included in the model (refer to Appendix Nine (a) - Classification Table).

Finally the histogram of the estimated probability was examined. This plot is useful to visibly assess the fit of the model to the observed data. This plot is a histogram of the predicted probabilities of tourists choosing Beijing versus Others as their main destinations. If the model perfectly fits the data, the plot should show all of the cases for which the event has occurred on the right-hand side, and all the cases for which the event has not occurred on the left-hand side (Field 2000; Norušis 1999). The more that the cases cluster at each end of the graph, the less misclassification of the cases, the better the model. Figure 8-3 shows that, at the final step, most of the tourists who chose Beijing appear on the right and who chose Others on the left. The majority of the choices made by the two groups cluster at their respective ends of the plot. Some points cluster in the centre of the plot but not many. This indicates the model fits the data quite well.

**Figure 8 - 3 Histogram of estimated probabilities – Logit I (1)**




Note: a. Predicted Probability is of Membership for Beijing
b. The Cut Value is .50
c. Symbols: O – Others; B – Beijing (each Symbol Represents 2 Cases).

The final goodness of fit statistic tests the null hypothesis that the coefficients of the variables that are not in the model are zero (Norušis 1999: 53). The results show that all the 14 variables not included at the final step of the model have non-significant score levels. In the mean time, the 0.883 high *p*-value of the overall statistics indicates they collectively could not contribute to the model either.

In summary, all these statistical tests lead to a satisfactory outcome that the data fit Logit I quite well, the variables included at the final step are statistically significant and they make a parsimonious contributions to the model building. The following further assesses the model using the diagnostic test.

### *8.8.2 Diagnostics of model fit and multicollinearity*

Diagnostic procedure in regression analysis is important because it can provide further insight into the possible improvements of the model. The analysis has two purposes. The first purpose is to examine the residuals to isolate cases for which the model fits poorly. Standardised residual (or normalised residual) can be used to which checks the difference between the observed probability and the predicted probability of an event occurring. It has a property that 95% of cases should have values that lie within ±2, and 99% of cases should have values that lie within ±2.5. Any values outside ±3 should be a cause for concern (Field 2000; Norušis 1999).

The second purpose is to isolate cases that exert an undue influence on the model. The common statistics used are Cook's distance that measures the change in the regression coefficient if a case is deleted from the model. Although, there is no absolute value set for it indicating an influential case, it has been suggested that if the value greater than 1, there might be a problem (Field 2000). Another one is DfBeta, a standardised Cook's statistic. Any value of this statistic greater than 1 indicates possible influential cases. The third one is Leverage value representing the degree of influence of a case over a model. This statistic should lie between 0 (the case has no influence) and 1 (the case exerts complete influence). Any value outside this range indicates undue influence over the model. Two diagnostic statistics are unique to the logistic regression model – the predicted probabilities and the predicted group memberships. The first one is the probabilities of the dependent variable occurring given the values of each independent variable. The second predicts to which of the two dichotomous choices of the dependent variable a case belongs to (Field 2000; Norušis 1999).

In the following examination, some covariate patterns which do not fit, or which have considerable influence on the estimated parameters may be uncovered. However, as the goodness of fit statistics indicates a good fit of this model, it was not expected that the diagnostic analysis shows large numbers of covariate patterns being fit poorly.

First of all, the majority values of Cook's distance (coo_bj) are normal. None of the extreme values of coo_bj exceed 1, Although three of the cases are closer to it. The expected value of Leverage is 0.052 ($= k + 1/N$, where k is 10, the number of predictor; and N is 210, the sample size). All cases have Leverage statistics (lev_bj) close to this expected value. Each of the cases also have 10 DfBetas (from dftb0_bj to dftb10_bj) values because of the 10 predictors in the final model (including variables' categories but excluding the constant term); and all of these values are less than 1 indicating that this statistic is not affected by many very extreme values (see Table 8-11).

**Table 8 - 11 Case summary – Values of DfBeta for Beijing (Logit I (1))**

| *Number* | *DFBETA for* | *Mean* | *Minimum.* | *Maximum* | *Range* | *Variance* |
|---|---|---|---|---|---|---|
| 0 | Constant | 1.322310E-04 | -.95811 | .67227 | 1.63038 | 1.009E-02 |
| 1 | REGGROUP (1) | 2.237898E-04 | -.13744 | .09142 | .22886 | 9.751E-04 |
| 2 | ENTRY (1) | 5.347539E-05 | -.16087 | .13899 | .29986 | 1.420E-03 |
| 3 | ENTRY (2) | -8.3797636E-05 | -.09237 | .17653 | .26891 | 1.379E-03 |
| 4 | ENTRY (3) | 2.241847E-04 | -.11845 | .59997 | .71842 | 4.144E-03 |
| 5 | REGATTRA(1) | -3.5809826E-04 | -.66488 | .84385 | 1.50873 | 7.625E-03 |
| 6 | REGATTRA (2) | -3.2918321E-04 | -.64815 | .87468 | 1.52282 | 8.794E-03 |
| 7 | REGEDUCA(1) | 1.252166E-04 | -.22019 | .15277 | .37296 | 1.593E-03 |
| 8 | REGEDUCA(2) | 1.980833E-04 | -.13631 | .07747 | .21379 | 1.181E-03 |
| 9 | REGINCOM(1) | -9.2678952E-05 | -.09987 | .10655 | .20642 | 9.647E-04 |
| 10 | REGINCOM(2) | -7.9654465E-05 | -.18187 | .21451 | .39638 | 1.720E-03 |

Table 8-12 shows the details of the extreme values and their associated cases of the test statistics. 9 cases of the standardised residual (zre_bj) have values of bigger than ±2 (about 95.75% of cases have values within ±2). Only 6 cases with values lie between ±2.5 (about 97.16% of cases have values within ±2.5). The majority of the cases have residual values within the scope of the requirement. However, the five extreme values, which lie outside ±3, should be examined carefully. These cases are 16, 124, 157, 179 and 194. Cases 16 and 124 also have exceptionally large values on one or more of the other diagnostics statistics. A close examination of the answers of the questionnaire showed that the purposes of them visiting China were not strictly leisure and/or VFR. Case 16 was for the purpose of VFR in Inner Mongolia, which is within the extent of this research, but not a common destination. It could not be simply removed. Case 124 involved a business purpose among many of its other travelling purposes. Although many respondents who answered business purpose have been excluded from the data analysis, a few were kept because they were identified as mainly for leisure purposes, but with business as one minor purpose. It was then considered as an unusual case and be removed from the model building. However, because business purpose was not the main intent of case 124; many other purposes, such as leisure and VFR were still considered by this subject. Therefore, in the analysis of Logit II and III, it was involved unless found unusual again. Except for these two cases, case 157, 179 and 194 could not be verified as unreasonable data and be simply removed. After eliminating case 124, the number of outliners became very low. It seems that there is not much to concern, because after all, all the other statistics show good results.

**Table 8 - 12 Extreme values of diagnostic statistics – Logit I (1)**

| Statistic | Highest | | Lowest | |
|---|---|---|---|---|
| | Case No. | Value | Case No. | Value |
| Predicted probability | 130 | .98436 | 206 | .00493 |
| | 59 | .97071 | 76 | .00910 |
| | 171 | .96846 | 111 | .01651 |
| | 212 | .96683 | 153 | .02047 |
| | 103 | .a | 81 | .02207 |
| Cook's influence | 102 | .99317 | 206 | .00003 |
| | 124 | .91683 | 76 | .00010 |
| | 149 | .62947 | 111 | .00025 |
| | 120 | .33653 | 130 | .00031 |
| | 179 | .32764 | 153 | .00047 |
| Leverage value | 38 | .23566 | 206 | .00616 |
| | 137 | .23431 | 76 | .01067 |
| | 87 | .18600 | 51 | .01306 |
| | 102 | .18571 | 40 | .01306 |
| | 35 | .14904 | 113 | .b |
| Standardised residual | 149 | 2.50073 | 194 | -4.55899 |
| | 170 | 2.30020 | 157 | -4.38778 |
| | 102 | 2.08679 | 16 | -4.38778 |
| | 120 | 2.01772 | 124 | -3.10094 |
| | 58 | 1.92158 | 179 | -3.06428 |

a. Only a partial list of cases with the value 1 is shown in the table of upper extremes.
b. Only a partial list of cases with the value 0 is shown in the table of lower extremes.

A new model was built without case 124, and produced slightly improved outcomes. This includes very minor changes in the significance levels of some of the variables left at the final step, with fairly consistent signs. Main changes are that REGEDUCA (level of education), which had marginal significance in the previous model, was replaced by variable PLACE2RE ($2^{nd}$ place visited) in the new model; and the one category of REGINCOM (i.e. REGINCOME (1)) has changed. However, this is not a significant category in both models (reflected in the two large *Sig.* values, 0.861 in the first model and 0.965 in the second). Therefore, the change could be ignored. Many of the goodness of fit statistics have no major changes, but were slightly improved. The final interpretation of the model was, carried out based on this revised model. For a convenient analysis, the revised model was termed Logit I (2) (refer to Appendix Nine (b)); and the original one was named as Logit I (1) (refer to Appendix Nine (a)).

Multicollinearity can significantly affect the parameter estimations of a regression model. The SPSS programme has not collinearity test for the logistic regression analysis, but the procedure in linear regression could be used (Field 2000). It has been suggested that a tolerance value less than 0.1 almost certainly indicates a serious collinearity problem; and if variance inflation factors (VIF) value is greater than 10, it is a cause of concern (Menard 1995; Field 2000). Table 8-13 displays the test results for Logit I (2). Both tolerance and VIF values are satisfactory; there is no indication that the variables included have the problem of multicollinearity. There is no extreme value in both the column of eigenvalue and condition index. At the bottom of the two rows of small eigenvalues, the five variables share the variance reasonably, showing no sign of dependence between the five independent variables.

**Table 8 - 13 Diagnostics of multicollinearity – Logit I (2)**

| Dimen -sion | Eigenvalue | Condition Index | Variance Proportions | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | (Constant) | Type of travel group, regrouped | Entry point | 2nd place visited, region | Attractiveness of main destination, regrouped | Income level, regrouped |
| Collinearity statistics | | Tolerance<br>VIF | | .873<br>1.145 | .968<br>1.033 | .878<br>1.138 | .965<br>1.037 | .964<br>1.037 |
| 1 | 5.112 | 1.000 | .00 | .00 | .01 | .01 | .01 | .01 |
| 2 | .363 | 3.752 | .00 | .03 | .01 | .67 | .03 | .00 |
| 3 | .225 | 4.768 | .00 | .00 | .79 | .00 | .09 | .08 |
| 4 | .170 | 5.483 | .00 | .00 | .00 | .11 | .33 | .56 |
| 5 | 9.791E-02 | 7.226 | .01 | .54 | .14 | .08 | .39 | .17 |
| 6 | 3.219E-02 | 12.601 | .99 | .42 | .04 | .13 | .15 | .19 |

In summary, using different diagnostic statistics, most of the tests produced satisfactory results. Although very few of them reveal signs of unusual influence, such as the appearance of some extreme values, the number is very limited. They seem to be of no big concern at all. No interaction has been considered because it seems that there is no strong theoretical indication that the variables included are interacted. The conclusion can be drawn that the model fits the data fairly well; it correctly classifies more than 80 per cent of the cases. The final work of interpretation can be carried out. #

### *8.8.3 Interpreting the regression coefficients*

The interpretation of Logit I focuses on the estimated coefficients *(B)* and the odd ratios *(exp (B))* of the independent variables in the final model. The estimated coefficients denote the rate of change of a function of the dependent variable because of per unit of change in the independent variables. The value of estimated coefficients (log of odd ratio) *(B)* tells the rate of change in the log-odds of the dependent variable associated with a one-unit change in the independent variable. However, in order to measure the association between dependent and independent variables more directly, another crucial statistic - the value of *exp (B)* (the odds ratio) is normally used. The interpretation of *exp (B)* is similar to *B,* but easier to understand because it does not need a logarithmic transformation. An *exp (B)* value greater than 1 indicates that as the independent variable increases, the odds of the outcome occurring increases and vice versa. They are defined as (Hosmer and Lemeshow 1989: 40-41; Norušis 1999):

$$\exp(B) = \frac{p_i/[1-p_i]}{p_{others}/[1-p_{others}]}$$

B = ln (exp (B))

$$p_{others} = 1 - p_i$$

Where:

$P_i$ = the probability of an event *i* in the dependent variable happening

$P_{others}$ = the probability of event *i* not happening, i.e. events other than *i* happening in

$\exp(B)$ = the odds ratio of the dependent variable

*(B)* = the log of the odds ratio of the dependent variable (i.e. the value of the estimated coefficient)

A brief observation of the estimated coefficients and their significance levels in Logit I (2) shows that the majority of the parameter estimates of the independent variables or categories of these variables has strong associations with the outcome variable – the destination choice of Beijing versus Others, with the exception of PLACE2RE, and one category of REGINCOM, which are associated with the outcome variable weakly (Table 8-14). The estimated coefficient for REGROUP is 1.050, indicating that when 'types of group' changes from 1 to 2, the value of the other independent variables remain the same, the log of the odds ratio of the destination choice of Beijing increases by 1.050. Similarly, the choice of 'types of travel group' (REGROUP) increases the odds of main destination choice by a factor of 2.857 indicating tourists who travelled to China with tour group were 2.857 times more likely to visit Beijing than those who travelled with family/friends/alone.

**Table 8 - 14 Coefficients and odds ratios of Logit I (1) and (2)**

| *Logits* | | *B* | *S.E.* | *Wald* | *df* | *Sig.* | *Exp(B)* | *95.0% C.I. for EXP(B)* | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | *Lower* | *Upper* |
| Logit I (2) | 1. REGGROUP(1) | 1.050 | .433 | 5.868 | 1 | .015 | 2.857 | 1.222 | 6.681 |
| | 2. ENTRY | | | 47.907 | 3 | .000 | | | |
| | ENTRY(1) | 1.619 | .563 | 8.265 | 1 | .004 | 5.049 | 1.674 | 15.225 |
| | ENTRY(2) | -1.120 | .556 | 4.052 | 1 | .044 | .326 | .110 | .971 |
| | ENTRY(3) | -3.484 | 1.056 | 10.893 | 1 | .001 | .031 | .004 | .243 |
| | 3. PLACE2RE | | | 7.240 | 3 | .065 | | | |
| | PLACE2RE(1) | .205 | .831 | .061 | 1 | .806 | 1.227 | .241 | 6.260 |
| | PLACE2RE(2) | 1.251 | .817 | 2.345 | 1 | .126 | 3.494 | .705 | 17.331 |
| | PLACE2RE(3) | -.295 | .727 | .165 | 1 | .685 | .744 | .179 | 3.096 |
| | 4. REGATTRA | | | 7.006 | 2 | .030 | | | |
| | REGATTRA(1) | -2.346 | 1.072 | 4.793 | 1 | .029 | .096 | .012 | .782 |
| | REGATTRA(2) | -3.037 | 1.161 | 6.836 | 1 | .009 | .048 | .005 | .468 |
| | 5. REGINCOM | | | 9.745 | 2 | .008 | | | |
| | REGINCOM(1) | -.019 | .442 | .002 | 1 | .965 | .981 | .412 | 2.334 |
| | REGINCOM(2) | -1.961 | .659 | 8.857 | 1 | .003 | .141 | .039 | .512 |
| | Constant | 2.306 | 1.430 | 2.601 | 1 | .107 | 10.030 | | |
| Logit I (1) | 1. REGGROUP(1) | 1.056 | .417 | 6.409 | 1 | .011 | 2.875 | 1.269 | 6.513 |
| | 2. ENTRY | | | 50.050 | 3 | .000 | | | |
| | ENTRY(1) | 1.581 | .517 | 9.357 | 1 | .002 | 4.858 | 1.764 | 13.373 |
| | ENTRY(2) | -1.164 | .526 | 4.907 | 1 | .027 | .312 | .111 | .875 |
| | ENTRY(3) | -3.287 | .922 | 12.702 | 1 | .000 | .037 | .006 | .228 |
| | 3. REGATTRA | | | 5.190 | 2 | .075* | | | |
| | REGATTRA(1) | -1.185 | .962 | 1.516 | 1 | .218 | .306 | .046 | 2.016 |
| | REGATTRA(2) | -2.087 | 1.059 | 3.881 | 1 | .049 | .124 | .016 | .989 |
| | 4. REGEDUCA | | | 5.016 | 2 | .081* | | | |
| | REGEDUCA(1) | 1.161 | .573 | 4.108 | 1 | .043 | 3.193 | 1.039 | 9.811 |
| | REGEDUCA(2) | .823 | .446 | 3.409 | 1 | .065* | 2.277 | .951 | 5.454 |
| | 5. REGINCOM | | | 7.852 | 2 | .020 | | | |
| | REGINCOM(1) | .077 | .437 | .031 | 1 | .861 | 1.080 | .458 | 2.542 |
| | REGINCOM(2) | -1.519 | .586 | 6.714 | 1 | .010 | .219 | .069 | .691 |
| | Constant | .683 | 1.085 | .396 | 1 | .529 | 1.980 | | |

Note: a. B = logistic coefficient; Sig. = significance level; Exp (B) = exponentiated coefficient
95.0% C.I. for EXP (B): confidence interval for Exp (B) at 0.05 significance level.
b. *: significant at 0.1 level.

An examination of the confidence interval gives additional information of this variable. The confidence interval of REGROUP's *exp (B)* ranges from 1.269 to 6.513. Both values are greater than 1. This gives more confidence that the value of the odds ratio of the whole population lies between these two values. This finding shows that tourists' choices of different sites are strongly linked to their choices of travelling arrangement. It seems that this finding is in line with the market practice in China which was identified in Section 7.3.4 that most of the long or short haul tourists like to visit Beijing and they are mostly organised by tour operators. It is supposed that this variable works together with all the other relevant independent variables on tourists' spatial choices.

The variable of ENTRY has four categories. The reference group of each polychromous category is the last one. The first three categories of ENTRY are Beijing, Shanghai and Guangzhou; and they are all compared with the $4^{th}$ category - Others. Related to these are three different odd ratios and signs. They indicate that tourists who entered at Beijing were 5.049 times more likely to choose Beijing as their main destination than those who entered at others places. Tourists who entered at Shanghai and Guangzhou were more likely to choose places other than Beijing as their main destinations. This result seems obvious, but the findings in the other two logits might be needed to understand more of this variable.

Regarding the variable of REGATTRA, tourists who rated a low level of attractiveness of their main destinations tended to have high probabilities to chose Beijing and vice versa. The differences in the ratings are quite major. Tourists who rated high or neutral of their main destinations were 0.096 and 0.048 times less likely to visit Beijing in comparison to those who rated low. This finding seems unexpected, but the hidden reason might be that tourists who visited Beijing had higher expectations, higher requirements of satisfaction than those who chose Others. Because, bearing in mind that the survey took place after the respondents arrived in China, their ratings have been more or less affected by their own initial expectations and real travel experiences. And those who chose to visit Beijing are assumed to be mostly attracted to the cultural heritages of this city than those who chose Others. It might be naturally reasoned that that their ratings were more easily affected than those of the latter.

With regard to REGINCOM, although its overall significance level is high ($p = 0.08$), only the $2^{nd}$ category of this variable (below US$30,000.-) is significant ($p = 0.003$) in comparison to the 3rd category (above US$40,000.-). This might indicate that, compared with those having medium income level, tourists who have high or low income levels tend to visit Beijing more. The two values of the confidence intervals for most of these variables are either both greater or both smaller than 1. This means that we can be quite confident that the value of *exp (B)* can be inferred to the whole population of international tourists in China.

No significant changes on the elicited variables between Logit I (1) and (2) are observed except a slight improvement of the significance levels of REGATTRA, and the exchange of two variables between Logit I (1) and (2) - PLACE2RE and REGEDUCA. The significance levels of PLACE2RE in Logit I (2) seem not easy to explain. It has acceptable overall significance level (0.065), but the significance levels of its three individual categories are unsatisfactory. The reason might be that this independent variable has four categories, and the comparisons between the first three categories with the category having the highest code do not have differences; but real differences might be hidden between the other pairs of comparisons, such as category 1 with 2. Therefore, although it might be difficult to make all the pair-wise comparisons using the four categories involved, it might be easy to suppose that this variable – PALCE2RE is an important variable to Logit I, even if it is marginally related to the outcome variable.

Regarding the variable of REGEDUCA, though it appeared quite significant in Logit I (1), it was removed from Logit 1 (2). Also, only the 1st category has bigger than 1 confidence interval in Logit I (1). There is no evidence that this variable contributes to the model building and relates to the outcome variable in Logit I (2). While some variables do not appear as significant, regarding the two focal variables of this research – cultural and geographic distance, which have been hypothesised as having strong and weak relationships with the dependent variable, do not appear in this logit indicating that they have no significant impact on the destination choice of tourists between Beijing and Others. It seems that this is beyond the original expectation. But it is still early to make any conclusion without referring to the other two logits.

## 8.9 LOGIT II SHANGHAI VS. OTHERS

As specified in Logit I, it is easier to assess and interpret the second logit because the majority of the procedure was the same. The aim of Logit II is to estimate the probability of tourists visiting Shanghai versus those visiting places other than Shanghai and identify the important influential variables to this estimation. The dependent variable is entitled SHAVSOTH. The dichotomous choices in the dependent variable are 0 representing Others, and 1 representing Shanghai. Same as Logit I, the initial entry of this logistic regression model building contained all the 19 independent. Among them, five variables – PREVIOUS, ENTRYDUR, TOTALDUR, UNDER and HARMO were continuous variables which are different from Logit I (refer to Appendix Ten (a)).

### *8.9.1 A preliminary diagnostic analysis*

At the beginning of the model assessment, a preliminary examination of the diagnostic analysis was conducted. This examination could identify and eliminate irrelevant extreme values so that the assessment of the logistic regression model could be applied on an improved model.

In this logit, the expected value of Leverage is 0.033 ($= k+1/N$, where k is 6, the number of predictor; and N is 212, the sample size). All of the cases have Leverage statistics (lev_sha) between 0 to 1; the majority of them are close to this calculated expected value. Each of the cases has six DfBetas values (from dfb1_sha to dftb6_sha) deriving from the six predictors at the final step of the model building (excluding the constant term); and almost all of the values are less than 1 (see Table 8-15). The majority of the values of Cook's distance (coo_sha) are less than 1, except for case 95.

**Table 8 - 15 Case summaries – values of DfBeta - Logit II (1)**

| *Number* | *DFBETA for* | *Mean* | *Minimum.* | *Maximum* | *Range* | *Variance* |
|---|---|---|---|---|---|---|
| 0 | Constant | 4.060352E-05 | -.20114 | .25430 | .45544 | 2.237E-03 |
| 1 | ENTRY (1) | 2.170438E-04 | -.34760 | .55198 | .89958 | 5.962E-03 |
| 2 | ENTRY (2) | 5.990678E-04 | .20752 | -.30845 | .51597 | 2.490E-03 |
| 3 | ENTRY (3) | 1.326988E-04 | 1.16086 | -.38048 | 1.54134 | 1.013E-02 |
| 4 | ENTRYDUR | -2.7619978E-04 | .01465 | -.10404 | .11869 | 7.651E-05 |
| 5 | TOTALDUR | 1.905450E-05 | .02657 | -.01654 | .04311 | 1.797E-05 |
| 6 | ETHNIC (1) | 6.896260E-04 | .19330 | -.28806 | .48136 | 2.307E-03 |

With regard to extreme values, five cases of the standardised residual (zre_sha) have values bigger than ±2, i.e. about 97.64% of cases have values within ±2; also only these five values lie outside ±2.5, i.e. 97.64% of cases have values within ±2.5. This means that the majority of the cases have residual values within the required range. The four extreme values resting outside ±3 were examined carefully. They are case 4, 95, 124 and 194 (see Table 8-16).

**Table 8 - 16 Extreme values of diagnostic statistics - Logit II (1)**

| Statistic | Highest<br>Case No. | Value | Lowest<br>Case No. | Value |
|---|---|---|---|---|
| Predicted probability | 37 | .94408 | 24 | .00001 |
| | 111 | .85413 | 21 | .00094 |
| | 78 | .83824 | 182 | .00112 |
| | 71 | .83824 | 22 | .00141 |
| | 52 | .82098 | 192 | .00144 |
| Cook's influence | 95 | 1.18140 | 24 | .00000 |
| | 7 | .77225 | 182 | .00000 |
| | 194 | .74904 | 21 | .00000 |
| | 4 | .61390 | 192 | .00000 |
| | 124 | .53785 | 22 | .00000 |
| Leverage value | 7 | .65198 | 24 | .00017 |
| | 37 | .17778 | 182 | .00178 |
| | 123 | .17339 | 192 | .00206 |
| | 74 | .11935 | 21 | .00217 |
| | 70 | .11562 | 205 | .00230 |
| Standardised residual | 194 | 14.65975 | 94 | -1.75243 |
| | 4 | 10.52556 | 74 | -.75234 |
| | 124 | 7.78915 | 58 | -.73342 |
| | 95 | 6.02392 | 32 | -.73342 |
| | 195 | 2.59963 | 55 | -.68996 |

Among them, 124 and 194 have occurred in Logit I (1). 124 has been regarded as a substandard case and been excluded from the analysis of Logit I (2). Case 95 shows similar data pattern as case 124 that contains business as one of its many travelling purposes. It also produced an extreme value in Cook's distance. Therefore, it was decided that case 95 and case 124 should be removed from the model building. But case 194 and 4 could not be simply removed because they showed no sign of abnormal. New model was thus obtained. For a simple analysis, the first model was termed Logit II (1) (refer to Appendix Ten (a)) and the adjusted model was called Logit II (2) (refer to Appendix Ten (b)).

Although the two extreme cases did not exert substantial influence on the model building, there are some changes between Logit II (1) and (2). After eliminating the two cases, the number of outliners in the new model was effectively reduced. Only 3 cases of the standardised residual are outside the value of ±2.5. It is not a significant number indicating no real need of concern. Other assessment statistics show model improvement to certain extent. The following part focuses on assessing Logit II (2) with comparison against Logit II (1).

### *8.9.2 Testing the coefficients and assessing the goodness of fit*

At the initial stage of Logit II (2), REDTRANS, PREVIOUS, REGGROUP, ENTRYDUR, PLACE2RE, REGATTRA, GENDER, REGSPEND, REGEDUCA, REGAGE, MARRIAGE and HARMO show low significance levels. The variables which have significant score statistics are ENTRY, REGORIGI, ETHNIC, INCOME and UNDER. REGDISTA are marginally significant. Improvements of the significance level of REGDISTA, REGORIGI, and REGINCOM have been observed in Logit II (2) in comparison to those in Logit II (1).

Table 8-17 contains the estimated coefficients (*B*), Wald statistics and -2LL statistics at the final steps from Logit II (1) and (2). Logit II (1) stopped at step 16 and Logit II (2) stopped at step 14. The column of *Wald Sig.* shows that most of the Wald statistics of the independent variables or variable categories are significantly different from zero at either 0.05 or 0.10 level. Among them, variable REGINCOM and REGAGE in Logit II (2) are the two extra variables due to the removal of the two extreme cases from Logit II (1). Although they are marginally significant in Logit II (2), the uncovering of these two variables provides more information about the influencing factors upon the outcome variable. These results indicate that the variables included in the final steps are quite important and the further assessment and interpretation of Logit II (2) can be continued.

**Table 8 - 17 Wald and -2LL of variables in the equation – Logit II (1) and (2)**

| | B | S.E. | Wald | df | Sig. | Model Log Likelihood | Change in -2LL | df | Sig. |
|---|---|---|---|---|---|---|---|---|---|
| Logit II (2) (Logit stopped at step 14) | | | | | | | | | |
| 1. ENTRY | | | 19.958 | 3 | .000 | -60.362 | 52.878 | 3 | .000 |
| ENTRY(1) | -3.792 | 1.307 | 8.415 | 1 | .004 | | | | |
| ENTRY(2) | 2.342 | .946 | 6.130 | 1 | .013 | | | | |
| ENTRY(3) | -10.833 | 31.096 | .121 | 1 | .728 | | | | |
| 2. ENTRYDUR | .254 | .111 | 5.235 | 1 | .022 | -37.024 | 6.202 | 1 | .013 |
| 3. TOTALDUR | -.134 | .071 | 3.599 | 1 | .058* | -37.148 | 6.451 | 1 | .011 |
| 4. ETHNIC(1) | 2.503 | .930 | 7.250 | 1 | .007 | -38.347 | 8.849 | 1 | .003 |
| 5. REGINCOM | | | 4.306 | 2 | .116 | -36.696 | 5.546 | 2 | .062* |
| REGINCOM(1) | 1.973 | .967 | 4.166 | 1 | .041 | | | | |
| REGINCOM(2) | 1.598 | .996 | 2.576 | 1 | .109 | | | | |
| 6. REGAGE(1) | 1.383 | .815 | 2.881 | 1 | .090* | -35.493 | 3.140 | 1 | .076* |
| Constant | -4.500 | 1.438 | 9.800 | 1 | .002 | | | | |
| Logit II (1) (Logit stopped at step 16) | | | | | | | | | |
| 1. ENTRY | | | 26.046 | 3 | .000 | -68.362 | 41.246 | 3 | .000 |
| ENTRY(1) | -2.257 | .980 | 5.302 | 1 | .021 | | | | |
| ENTRY(2) | 1.700 | .786 | 4.673 | 1 | .031 | | | | |
| ENTRY(3) | -2.508 | 1.270 | 3.897 | 1 | .048 | | | | |
| 2. ENTRYDUR | .253 | .093 | 7.453 | 1 | .006 | -51.927 | 8.376 | 1 | .004 |
| 3. TOTALDUR | -.131 | .061 | 4.639 | 1 | .031 | -50.960 | 6.443 | 1 | .011 |
| 4. ETHNIC(1) | 1.751 | .664 | 6.943 | 1 | .008 | -51.557 | 7.636 | 1 | .006 |
| Constant | -2.294 | .849 | 7.303 | 1 | .007 | | | | |

Note. a. * significance level: 0.1.
b. B = logistic coefficient; S. E. = standard error; Wald = Wald statistic; Sig. = significance level.

Despite the Wald statistic, an examination of the change in the -2LL when a variable was input into the model, which contains other variables, was also performed. The column of *Change in –2LL* shows the changes of –2LL when each of the variables in Logit II (1) and (2) was added into the models at the final steps. Similar to the results of the Wald tests, REGINCOM and REGAGE are marginally significant (at 0.1 level). ENTRY, ENTRYDUR, TOTALDUR and ETHNIC have strongly significance levels. This test lends more proof of the contributions of these variables to Logit II (2).

Six goodness of fit statistics were used to test the statistical significance of the combined effects of the independent variables in Logit II (2). When only the constant term was included, the values of -2LL are 136.342 for Logit II (2) (145.349 for Logit II (1)). But after the backward LR stepwise procedure, the values of -2LL in the final models was reduced to 67.845 (95.477 for Logit II (1), a decrease of almost half of the original value

– 68.479 was obtained indicating that the model as a whole has been substantially improved after adding different variables.

Comparing with Logit II (1), Logit II (2) is the better fitting model because it has smaller -2LL value. The *Cox & Snell* $R^2$ values at the final step are 0.279 for Logit II (2) and 0.211 for Logit II (2); the *Nagelkerke* $R^2$ values are 0.583 and 0423 for each of them respectively. Improvements of Logit II (2) are suggested (see Table 8-18).

**Table 8 - 18 Model summary at each step – Logit II (1) and (2)**

| | Logit II (1) | | | Logit II (2) | | |
|---|---|---|---|---|---|---|
| Step | -2 LL | Cox & Snell $R^2$ | Nagelkerke $R^2$ | -2 LL | Cox & Snell $R^2$ | Nagelkerke $R^2$ |
| 1 | 77.226 | .276 | .554 | 48.918 | .342 | .713 |
| 2 | 77.242 | .276 | .554 | 49.139 | .341 | .712 |
| 3 | 77.297 | .276 | .554 | 50.376 | .337 | .704 |
| 4 | 77.337 | .276 | .553 | 51.196 | .335 | .698 |
| 5 | 77.383 | .275 | .553 | 53.967 | .326 | .680 |
| 6 | 77.914 | .274 | .549 | 54.385 | .324 | .677 |
| 7 | 77.964 | .273 | .549 | 55.113 | .322 | .672 |
| 8 | 79.247 | .269 | .540 | 56.032 | .319 | .666 |
| 9 | 79.593 | .268 | .538 | 58.305 | .312 | .650 |
| 10 | 80.756 | .264 | .530 | 60.148 | .305 | .637 |
| 11 | 81.397 | .261 | .525 | 61.094 | .302 | .631 |
| 12 | 83.517 | .254 | .510 | 64.580 | .291 | .606 |
| 13 | 86.117 | .245 | .492 | 65.137 | .289 | .602 |
| 14 | 89.111 | .234 | .470 | 67.845 | .279 | .583 |
| 15 | 93.025 | .220 | .441 | | | |
| 16 | 95.477 | .211 | .423 | | | |

However, the Hosmer and Lemeshow test shows that Logit II (2) is not very satisfactory toward the final steps. Logit II (1) produces better results. The chi-square values increase slightly, so does the *p*-values. These results do not provide strong evidence of the model fit. However, it is not proper to conclude that the models do not fit either because many other results show reasonable solutions. For a more convincing explanation, more test statistics need to be examined (see Table 8-19).

Despite the puzzling Hosmer and Lemeshow results, a glance of the classification table brings positive signs. When the two models had only the constant term, they correctly predicted 90.0% (for Logit II (2) and 89.1% (for Logit II (1)). At the final step of Logit II (2), of the tourist who did not visit Shanghai, 98.9 % were correctly classified (99.5% for Logit II (1)); and the overall ratio is 94.7% (92.4% for Logit II (1)). These figures are very good results. Overall, we can be quite confident that the two models fit the data relatively well, and Logit II (2) is better fitted than Logit II (1) because it has larger percentages of correct predictions. However, one point of caution is that, of the tourists who did not visit Shanghai, only 57.1% were correctly classified (34.8% for Logit II (1)). This suggests that the two choices are not evenly predicted. Looking back the original cases included in each choice, 23 selected Shanghai and 188 selected Others from the 212 samples. It seems that these uneven sample frequencies exerted irregular influence on the model fitting. The questionable Omnibus test results might derive from this situation as well.

**Table 8 - 19 Hosmer and Lemeshow Test – Logit II (1) and (2)**

| | Logit II (1) | | | Logit II (2) | | |
|---|---|---|---|---|---|---|
| Step | Chi-square | Df | Sig. | Chi-square | df | Sig. |
| 1 | 5.047 | 8 | .753 | 1.844 | 8 | .985 |
| 2 | 4.801 | 8 | .779 | 2.893 | 8 | .941 |
| 3 | 6.674 | 8 | .572 | 2.414 | 8 | .966 |
| 4 | 6.440 | 8 | .598 | 10.664 | 8 | .221 |
| 5 | 6.552 | 8 | .586 | 10.678 | 8 | .221 |
| 6 | 6.529 | 8 | .588 | 26.588 | 8 | .001 |
| 7 | 8.322 | 8 | .403 | 27.613 | 8 | .001 |
| 8 | 6.258 | 8 | .618 | 27.870 | 8 | .000 |
| 9 | 5.377 | 8 | .717 | 30.977 | 8 | .000 |
| 10 | 6.544 | 8 | .587 | 28.910 | 8 | .000 |
| 11 | 21.333 | 8 | .006 | 23.028 | 8 | .003 |
| 12 | 19.772 | 8 | .011 | 21.248 | 8 | .007 |
| 13 | 16.222 | 8 | .039 | 55.453 | 8 | .000 |
| 14 | 25.429 | 8 | .001 | 48.783 | 8 | .000 |
| 15 | 11.488 | 8 | .176 | | | |
| 16 | 17.770 | 8 | .023 | | | |

In order to reduce the influence of the uneven distribution of the dichotomous estimation choices, the case wise list statistics was assessed instead of the histogram of the estimated probability. Because the latter is a perceptual technique; it can be easily distorted if the prediction has high inaccuracy. But the former gives the details of the incorrectness, therefore, more reliable. It shows that most of the cases have been properly predicted by the model with few misclassifications. Logit II (1) has five cases misclassified – case 4, 95, 124, 194 and 195; Logit II (2) has only three – case 4, 192 and 193, telling a sufficient improvement of the latter.

A further examination of the coefficient of the variables not in the models reveals that, in both Logit II (2) and (1), all the variables not included in the model could not make significant contributions to the predictive power of the two models. The *Sig.* level of overall statistics of these two models is 0.835 for Logit II (2) and 0.884 for Logit II (1). It seems that despite the single difficulty in assessing the goodness of fit of Logit II (2), all the other tests give the same result that it can be seen as fitting the data quite well and Logit II (2) has improved on Logit II (1). There is also evident that the problematic Hosmer and Lemeshow test might derive from the uneven distribution of the dichotomous choices of the dependent variable. To conclude, an examination of the multicollinearity statistics shows that all the tolerance value of the variables left in Logit II (1) and (2) are bigger than 0. All the VIF values are around 1 to 2. They show no sign of multicollinearity. Also, there are no sign of very extreme values and independence between the independent variables (refer to Table 8-20).

**Table 8 - 20 Test for multicollinearity – Logit II (2)**

| Dimen-sion | Eigenvalue | Condition Index | Variance Proportions | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | (Constant) | Entry point | Duration in the entry point | Duration in the country | Ethnicity | Income level | Age categories |
| Collinearity statistics | | Tolerance | | .906 | .846 | .888 | .865 | .936 | .891 |
| | | VIF | | 1.104 | 1.182 | 1.126 | 1.156 | 1.069 | 1.122 |
| 1 | 5.397 | 1.000 | .00 | .01 | .01 | .01 | .01 | .00 | .01 |
| 2 | .510 | 3.254 | .00 | .05 | .36 | .12 | .00 | .01 | .11 |
| 3 | .352 | 3.917 | .01 | .26 | .00 | .01 | .02 | .01 | .51 |
| 4 | .306 | 4.201 | .00 | .00 | .34 | .74 | .01 | .01 | .03 |
| 5 | .222 | 4.929 | .00 | .15 | .02 | .08 | .49 | .07 | .33 |
| 6 | .167 | 5.685 | .00 | .14 | .03 | .04 | .37 | .55 | .00 |
| 7 | 4.704E-02 | 10.711 | .98 | .40 | .24 | .00 | .10 | .35 | .00 |

### *8.9.3 Interpreting the regression coefficients*

The focus of model interpretation is put on Logit II (2); but a comparison between Logit II (1) and (2) was made. The parameter and odds ratio estimates for both Logit II (1) and (2) are shown in Table 8-21. In Logit II (2), the significance levels show that the majority of the parameter estimates of the independent variables or categories of these variables are significantly associated with the dependent variable. Six variables are left at the final step in Logit II (2). They are ENTRY, ENTRYDUR, TOTALDUR, ETHNIC, REGINCOM, and REGAGE. The significance levels for ENTRY (3), REGINCOM and, REGINCOM (2) do not meet the 0.1 requirement.

ENTRY shows an evident strong relationship with the dependent variable. Two categories of ENTRY - ENTRY (1) and ENTRY (2), have significant estimated coefficients and these are enhanced by their two greater or lesser than 1 confidence intervals. It was interpreted that ENTRY (1) decreases the odds of main destination choice by a factor of 0.23, indicating that tourists who entered at Beijing were 0.23 times less likely to select Shanghai as their main destination than those who entered at other places. ENTRY (2) increases the odds of main destination choice by a factor of 10.407, which is a major difference, indicating that tourists who entered at Shanghai were about ten times more likely to choose Shanghai as their main destination than those who entered at other places. Tourists who entered at Guangzhou could not make any distinction of their choices between Shanghai and Others. This finding might be straightforward and is consistent with the finding in Logit I that tourists who entered at Beijing were more likely to choose Beijing as their main destination. It seems not surprising that wherever tourists entered into the country, the entry place was likely to be their main destination.

**Table 8 - 21 Coefficients and odds ratios – Logit II (1) and (2)**

| Models | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I. for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Logit II (2) | 1. ENTRY | | | 19.958 | 3 | .000 | | | |
| | ENTRY(1) | -3.792 | 1.307 | 8.415 | 1 | .004 | .023 | .002 | .292 |
| | ENTRY(2) | 2.342 | .946 | 6.130 | 1 | .013 | 10.407 | 1.629 | 66.477 |
| | ENTRY(3) | -10.833 | 31.096 | .121 | 1 | .728 | .000 | .000 | 5.8E+21 |
| | 2. ENTRYDUR | .254 | .111 | 5.235 | 1 | .022 | 1.289 | 1.037 | 1.603 |
| | 3. TOTALDUR | -.134 | .071 | 3.599 | 1 | .058* | .874 | .761 | 1.004 |
| | 4. ETHNIC(1) | 2.503 | .930 | 7.250 | 1 | .007 | 12.216 | 1.976 | 75.530 |
| | 5. REGINCOM | | | 4.306 | 2 | .116 | | | |
| | REGINCOM(1) | 1.973 | .967 | 4.166 | 1 | .041 | 7.192 | 1.082 | 47.819 |
| | REGINCOM(2) | 1.598 | .996 | 2.576 | 1 | .109 | 4.943 | .702 | 34.796 |
| | 6. REGAGE(1) | 1.383 | .815 | 2.881 | 1 | .090* | 3.985 | .807 | 19.669 |
| | Constant | -4.500 | 1.438 | 9.800 | 1 | .002 | .011 | | |
| Logit II (1) | 1. ENTRY | | | 26.046 | 3 | .000 | | | |
| | ENTRY(1) | -2.257 | .980 | 5.302 | 1 | .021 | .105 | .015 | .715 |
| | ENTRY(2) | 1.700 | .786 | 4.673 | 1 | .031 | 5.473 | 1.172 | 25.557 |
| | ENTRY(3) | -2.508 | 1.270 | 3.897 | 1 | .048 | .081 | .007 | .982 |
| | 2. ENTRYDUR | .253 | .093 | 7.453 | 1 | .006 | 1.288 | 1.074 | 1.544 |
| | 3.TOTALDUR | -.131 | .061 | 4.639 | 1 | .031 | .877 | .779 | .988 |
| | 4. ETHNIC(1) | 1.751 | .664 | 6.943 | 1 | .008 | 5.759 | 1.566 | 21.178 |
| | Constant | -2.294 | .849 | 7.303 | 1 | .007 | .101 | | |

Note: a. Variable(s) entered on step 1: REDTRANS, PREVIOUS, REGGROUP, ENTRY, ENTRYDUR, PLACE2RE, TOTALDUR, REGATTRA, REGDISTA, REGORIGI, ETHNIC, GENDER, REGSPEND, REGEDUCA, REGINCOM, REGAGE, MARRIAGE, UNDER, HARMO.

b. *: Significant at 0.10 level.

The differences between Logit II (1) and (2) rests on two variables – REGINCOME and REGAGE. They emerged as factors that make important contributions to the model building after the two extreme cases – number 95 and 124 were removed. REGIONCOM needs some cautious considerations. Only REGINCOM (1) is significant, accompanied by greater than one upper and lower level of confidence interval. By comparison of those income levels of less than US$30,000 were 7.192 times more likely to choose Shanghai as their main destination. This might mean that tourists who have lower income levels are more likely to visit Shanghai than those who high income levels. This point seems to not obviously relate to the finding from Logit I that tourists who have high or low income level tend to visit Beijing more.

Reasonably significant (at 0.90 level), age is proved to be associated with the destination choice between Shanghai and Others. The *exp (B)* of REGAGE states that tourists who were below 45 were 3,985 times more likely to visit Shanghai than those who were above 45. The confidence interval of this variable rests on each side of one expressing a need of caution in generalizing its contribution to the model in the whole population. However, the lower level is not very far from one, so this variable still can be considered as a marginally significant variable.

Two measurements relating to time are significant in this logit. They are the duration of tourists staying in China (TOTALDUR) and in their entry points (ENTRYDUR). The signs of these two variables are opposite in both Logit II (1) and (2). In Logit II (2), TOTALDUR has a smaller and a greater than one upper and lower levels confidence interval, but they do not differ greatly. It can still be considered as a significant factor. It can be interpreted that tourists who chose to visit Shanghai stayed a shorter time in the whole country than those who chose to visit other places. However, ENTRYDUR is very significant (at 0.022 level) with a bigger than one *exp (B)* and a positive sign of *B*, meaning that tourists who travelled to Shanghai stayed at their entry points longer than those who chose to visit Others. The different signs between these two lengths of stay might be quite reasonable considering that if tourists stayed longer in their entry points, they might stay shorter times in the country.

The most important finding in this logit has to be the occurrence of the variable - ETHNIC. It appears in both Logit II (1) and (2) with high significance levels. This is accompanied by reliable confidence intervals and unchanging signs of *B*. From this, it seems that although not entirely, the 2$^{nd}$ hypothesis that there is a strong relationship between the choice of the main destination in China and the culture proxies, such as nationality and ethnicity, is responded in this logit. However, ETHNIC is not a designed cultural distance variable, but a supposed cultural proxy. The *exp (B)* of ETHNIC in Logit II (2) is 12.216, stating that tourists who were ethnic Chinese were 12.216 times more likely to visit Shanghai than those who were not. This difference is very evident. It is also a difference between Logit I and Logit II. In the former, there is no single cultural related variable occurring. It could be supposed that tourists who liked to visit Beijing could not be differentiated by their cultural backgrounds; however, the effect of culture became evident in those who chose to visit Shanghai.

Although appearing in Logit I, REGGROUP, PLACE2RE, REGATTRA do not come forward in this logit. It could be supposed that the independent variables have different effects on different logits. That is they affect the choice of Beijing and Shanghai differently. However, these two logits share one important similarity that is the geographical distance variable, one of the focal variables of this research, which has been hypothesised as weakly related to the dependent variables, does not emerge in either logits. It could be supposed that this variable cannot make significant contributions to the destination choices of tourists. In order to further confirm this point, it will be closely examined in Logit III.

## 8.10 LOGIT III GUANGZHOU VS. OTHERS

The aim of this logit is to estimate the probabilities of tourists who visited Guangzhou versus those who visited places other than Guangzhou and to identify the important influential variables in this estimation. The dependent variable is titled GUAVSOTH. The dichotomous choices in the dependent variable are zero representing Others, and one representing Guangzhou. Different from the other two logits, the initial entry of this logit contained only 18 independent variables. PLACE2RE was excluded because of the reason discussed in Section 8.5.5 that there was a numerical problem of zero-frequency cells in the cross-tabulation between the dependent variable and PLACE2RE. Among all the variables, ENTRYDUR, UNDER and HARMO are continuous variables.

### *8.10.1 Numerical problems and extreme values*

The procedure applied in this logit was same as the ones used in Logit I and II. However, the first running of the model including all the 18 independent variables revealed a sign of numerical problems. It seemed that the maximum likelihood estimates could not be produced by the SPSS programme (Hosmer and Lemeshow 1989). According to Hosmer and Lemeshow (1989), numerical problems are normally caused by certain patterns or structures of data (p. 126). In order to identify the problematic independent variables in relation to the dependent variable, a forward stepwise LR selection was performed firstly, because this method adds each variable into the model building sequentially in a reverse order to the backward LR stepwise procedure. If any of the independent variables has a problem, the relevant assessment statistics could expose this step by step.

Despite the problem of zero-frequency cells in a contingency table, another common numerical problem is the covariates completely separating the outcome groups. Hosmer and Lemeshow state that the occurrence of this problem depends on the sample size, the number of choices within the dependent variables, and the number of independent variables included in the model. They suggest that one tip-off of this problem is the occurrence of vary large estimated coefficients and especially the large estimated standard errors (Hosmer and Lemeshow 1989: 129-130).

An examination of the variables included in the forward stepwise LR selection of the logistic regression indicated that the variable of ENTRY produced extreme values in *exp (B)* and confidence intervals. It seemed that there was an almost clear-cut estimation between the 3rd category of ENTRY and the dependent variable. This indicated that almost all of the tourists who chose Guangzhou as the main destination entered at Guangzhou and vice versa. As more variables were added into the model building one by one, the confidence intervals and the values of *exp (B)* of ENTRY increased enormously and produced meaningless values. It can be concluded that ENTRY was a source of numerical problem. A new model was then built without this variable. A backward LR stepwise was conducted using the same group of independent variables, the analysis was completed and no exposure of numerical problems appeared again. Thus this model was finalised as Logit III (refer to Appendix Eleven).

A preliminary examination of the extreme values using diagnostic analysis revealed that although some extreme values were identified, none of them could be classified as unusual, and be simply deleted. Therefore, assessment and evaluation of Logit III were carried on with no change of the cases (see Table 8-22).

**Table 8 - 22 Extreme values of diagnostic statistics – Logit III**

| Statistic | Highest | | Lowest | |
|---|---|---|---|---|
| | Case No. | Value | Case No. | Value |
| Predicted probability | 98 | .99667 | 41 | .00000 |
| | 77 | .96688 | 177 | .00006 |
| | 85 | .95615 | 199 | .00006 |
| | 69 | .93991 | 202 | .00007 |
| | 90 | .91686 | 92 | .00013 |
| Cook's influence | 206 | 2.57418 | 41 | .00000 |
| | 9 | 2.23519 | 177 | .00000 |
| | 35 | 1.65746 | 199 | .00000 |
| | 137 | 1.52746 | 202 | .00000 |
| | 157 | 1.17873 | 200 | .00000 |
| Leverage value | 107 | .55513 | 41 | .00000 |
| | 137 | .42205 | 177 | .00026 |
| | 188 | .40122 | 199 | .00026 |
| | 144 | .36205 | 202 | .00033 |
| | 153 | .34598 | 200 | .00054 |
| Standardised residual | 141 | 9.45025 | 137 | -1.44626 |
| | 35 | 3.99809 | 96 | -1.43429 |
| | 157 | 3.94349 | 72 | -1.18821 |
| | 9 | 2.79724 | 139 | -1.11782 |
| | 53 | 2.76880 | 14 | -.81269 |

### *8.10.2 Testing the coefficients and assessing the goodness of fit*

The initial step shows REDTRANS, REGRROUP, REGDISTA, REGSPEND, REGAGE, REGPREV, REGTOTDU are the significant variables; and all of the four cultural related variables – REGORIGI, ETHNIC, UNDER and HARMO are present. This is distinctive because they have not been appeared in either Logit I or II. It would be interesting to see if they can be proved as significant in the following steps.

Table 8-23 presents the estimated coefficients (*B*), related Wald statistics, and the change of –2LL at the final step (Step 10). The column of *Wald sig.* shows that most of the Wald statistics of the independent variables are significant. Although some of the categorical variables with more than one degree of freedom do not have significant overall Wald statistics, one or more of their variable categories are significant, such as REGORIGI (2). On the other hand, not all categories of some of the variables are significant, but they have are significant overall statistics, such as REGSPEND, REGINCOM, and REGTOTDU. REGGROUP, ETHNIC, HARMO and REGPREV have overall significance as well as individual significance.

**Table 8 - 23 Variables in the equation – Logit III**

| Variables | B | S.E. | Wald | Df | Wald Sig. | Exp (B) | 95.0% C.I. for EXP (B) | | Model Log Likelihood | Change in -2LL | Df | -2LL Sig. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper | | | | |
| 1. REGGROUP(1) | -2.269 | .706 | 10.338 | 1 | .001 | .103 | .026 | .412 | -41.748 | 12.495 | 1 | .000 |
| 2. REGORIGI | | | 5.966 | 3 | .113 | | | | -39.589 | 8.176 | 3 | .043 |
| REGORIGI(1) | -2.107 | 2.941 | .513 | 1 | .474 | .122 | .000 | 38.753 | | | | |
| REGORIGI(2) | -5.272 | 3.184 | 2.741 | 1 | .098 | .005 | .000 | 2.637 | | | | |
| REGORIGI(3) | -2.990 | 2.824 | 1.121 | 1 | .290 | .050 | .000 | 12.742 | | | | |
| 3. ETHNIC(1) | -4.641 | 2.881 | 2.594 | 1 | .107 | .010 | .000 | 2.737 | -38.202 | 5.404 | 1 | .020 |
| 4. REGSPEND | | | 6.632 | 2 | .036 | | | | -39.042 | 7.082 | 2 | .029 |
| REGSPEND(1) | 2.350 | .974 | 5.816 | 1 | .016 | 10.485 | 1.553 | 70.802 | | | | |
| REGSPEND(2) | -.020 | 1.179 | .000 | 1 | .986 | .980 | .097 | 9.879 | | | | |
| 5. REGINCOM | | | 9.909 | 2 | .007 | | | | -41.334 | 11.668 | 2 | .003 |
| REGINCOM(1) | -1.273 | .926 | 1.890 | 1 | .169 | .280 | .046 | 1.719 | | | | |
| REGINCOM(2) | 2.588 | 1.010 | 6.563 | 1 | .010 | 13.297 | 1.836 | 96.280 | | | | |
| 6. HARMO | -1.193 | .562 | 4.513 | 1 | .034 | .303 | .101 | .912 | -38.094 | 5.186 | 1 | .023 |
| 7. REGPREV | | | 5.964 | 2 | .051 | | | | -38.467 | 5.933 | 2 | .051* |
| REGPREV(1) | -2.223 | .984 | 5.105 | 1 | .024 | .108 | .016 | .745 | | | | |
| REGPREV(2) | -2.012 | 1.018 | 3.906 | 1 | .048 | .134 | .018 | .984 | | | | |
| 8. REGTOTDU | | | 12.144 | 3 | .007 | | | | -43.871 | 16.740 | 3 | .001 |
| REGTOTDU(1) | 1.026 | 1.135 | .818 | 1 | .366 | 2.791 | .302 | 25.799 | | | | |
| REGTOTDU(2) | -2.374 | 1.150 | 4.265 | 1 | .039 | .093 | .010 | .886 | | | | |
| REGTOTDU(3) | -.962 | 1.095 | .772 | 1 | .380 | .382 | .045 | 3.268 | | | | |
| Constant | 3.171 | 3.097 | 1.049 | 1 | .306 | 23.831 | | | | | | |

Note: Variable(s) entered on step 1: REDTRANS, REGGROUP, ENTRYDUR, REGATTRA, REGDISTA, REGORIGI, ETHNIC, GENDER, REGSPEND, REGEDUCA, REGINCOM, REGAGE, MARRIAGE, UNDER, HARMO, REGPREV, and REGTOTDU. *. Significant level: 0.1

'Types of travel group' (REGGROUP) appears significantly as in Logit I. Two factors relating to the financial attributes of tourists appeared as well – REGINCOM and REGSPEND. All the cultural related variables are present with varied significance levels. The change of -2LL ratio of each individual variable shows satisfied results. Most of the variables in the final model have significance level at 0.01 to 0.1. Removing them can noticeably affect the model fit.

Also, at the final step (step 10), all the block and model chi-square statistics are significant at 0.05 level indicating that a strong improvement of the models with different sets of the independent variables. All the step chi-square tests show satisfactory results as well (refer to Appendix Eleven - Omnibus Test of Model Coefficients). The two statistics – the *Cox & Snell* $R^2$ and the *Nagelkerke* $R^2$ present sound outcomes. In the final model, the *Cox & Snell* $R^2$ value is 0.297, the *Nagelkerke* $R^2$ value is 0.597. Although the former is slightly lower, the figures are acceptable indicating that almost half of the 'variations' in the dependent variable are explained by the logistic regression model (refer to Appendix Eleven - Model Summary).

The Hosmer and Lemeshow test gives sound results as well. At step one, the *Sig.* level is 0.994, *chi-square* value is 1.423 (*df* is 8). But at the final step (step 10), the *Sig.* level reaches 0.579, *chi-square* value is 6.612. This means that the null hypothesis about no differences between predicted and observed probabilities of the dependent variable could not be rejects, i.e. there are evidences that the predicted probabilities match the reality reasonably (refer to Appendix Eleven - Hosmer and Lemeshow Test).

The classification matrix further illustrates that the model could predict the memberships of dependent variable very accurately. There is a big change between step 0 and 1, but there are no big changes throughout step 1 to 10. These indicate that the model fit is adequate. However, bearing in mind that the frequencies of the two dichotomous choices of the dependent variable are not unbalanced. It seems that this shortcoming had impact on the results because the values of this test of the two choices are not equal. Similar to Logit II, the correctly predicted memberships of choosing Guangzhou are lower than those of choosing Others. At the final step, 97.9% are correctly predicted for those who visited Others, 60.9% for those who visited Guangzhou. However, the overall percentage of correctly predicted is 93.8% which is very high (refer to Appendix Eleven - Classification Table).

A test of the coefficient of the variables not in the model tells that, in Logit III, all the variables not included in the model could not make significant contributions to the predictive power of the logit. The overall as well as individual tests give no indication that they could be put in the final model (refer to Appendix Eleven - Variables not in the Equation). Finally, the case wise list was assessed. It can be seen from Table 8-24 that most of the cases have been properly predicted by the model with seven misclassifications. Although the occurrence of these seven cases misclassified is not a very comfortable result, still the model can be seen as acceptable considering almost 97 percent of the memberships of the cases are correctly classified. Finally, Table 8-25 shows the results of the multicollinearity test. Same as in Logit I and II, the test provides no sign of independence between the independent variables.

**Table 8 - 24 Case wise list - Logit III**

| | Selected Status | Observed | Predicted | Predicted Group | Temporary Variable | |
|---|---|---|---|---|---|---|
| Case | | Guangzhou vs. Others | | | Resid | ZResid |
| 9 | S | G** | .113 | O | .887 | 2.797 |
| 35 | S | G** | .059 | O | .941 | 3.998 |
| 53 | S | G** | .115 | O | .885 | 2.769 |
| 101 | S | G** | .166 | O | .834 | 2.239 |
| 141 | S | G** | .011 | O | .989 | 9.450 |
| 157 | S | G** | .060 | O | .940 | 3.943 |
| 206 | S | G** | .163 | O | .837 | 2.268 |

a. S = Selected, U = Unselected cases, and ** = Misclassified cases.
b. Cases with studentised residuals greater than 2.000 are listed.

**Table 8 - 25 Test for multicollinearity – Logit III**

| Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | (Constant) | Type of Travel group | Place of Origins | Ethnic Chinese | Trip Expense | Income Level | HARMO | No. of visitation Previously | Duration in the country |
| Collinearity statistics | | Tolerance | | .934 | .380 | .403 | .662 | .835 | .879 | .520 | .658 |
| | | VIF | | 1.070 | 2.632 | 2.481 | 1.510 | 1.198 | 1.137 | 1.923 | 1.521 |
| 1 | 6.557 | 1.000 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 2 | 1.055 | 2.492 | .00 | .00 | .00 | .01 | .00 | .00 | .69 | .03 | .00 |
| 3 | .809 | 2.846 | .00 | .00 | .01 | .02 | .00 | .00 | .17 | .17 | .00 |
| 4 | .179 | 6.059 | .00 | .12 | .11 | .00 | .02 | .15 | .03 | .32 | .02 |
| 5 | .139 | 6.856 | .00 | .01 | .01 | .04 | .01 | .61 | .00 | .12 | .15 |
| 6 | .103 | 7.996 | .00 | .01 | .00 | .58 | .04 | .00 | .09 | .23 | .25 |
| 7 | 7.910E-02 | 9.104 | .00 | .73 | .23 | .00 | .11 | .00 | .02 | .06 | .01 |
| 8 | 6.762E-02 | 9.847 | .00 | .10 | .03 | .02 | .76 | .08 | .00 | .01 | .30 |
| 9 | 1.094E-02 | 24.476 | .99 | .04 | .61 | .32 | .05 | .16 | .00 | .06 | .27 |

In conclusion, despite one difficulty in the goodness of fit assessments in the classification table, all the other tests indicate that Logit III fits the data quite well. It also suggests that the problem on the classification table test might derive from the uneven distribution of the two choices of the dependent variable, which is similar to the problem discussed in Logit II. The interpretation of Logit III can be carried on.

### *8.10.3 Interpreting the regression coefficients*

Comparing Logit I and II, the variables that come out as significant are not exactly the same in Logit III. The most important difference should be the occurrence of the three cultural related variables (see Table 8-26).

Among the three categories of REGORIGI, only REGORIGI (2) is significant at 0.10 level. Although the upper and lower values of its confidence interval are not all larger or smaller than 1, their difference is minor. The negative sign of REGORIGI (1) could be interpreted as British tourists were less likely to choose Guangzhou as their main destination comparing with those from the GCRs; the predicted probability is only 0.05 times lower. The overall significant level of REGORIGI is not strong because it seems that there are no confirmed differences in destination choices between American and Japanese tourists and those from the GCRs. This seems not surprising as it has been discussed that the majority of inbound tourists in Guangzhou are ethnic Chinese from The GCRs (refer to Chapter 5). However, although international tourists from other regions do not prefer Guangzhou more than the other two gateways, they are still quiet attracted to this city, especially Japanese and American tourists.

**Table 8 - 26 Coefficients and odds ratio – Logit III**

| | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I. for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|
| 1. REGGROUP(1) | -2.269 | .706 | 10.338 | 1 | .001 | .103 | .026 | .412 |
| 2. REGORIGI | | | 5.966 | 3 | .113 | | | |
| REGORIGI(1) | -2.107 | 2.941 | .513 | 1 | .474 | .122 | .000 | 38.753 |
| REGORIGI(2) | -5.272 | 3.184 | 2.741 | 1 | .098* | .005 | .000 | 2.637 |
| REGORIGI(3) | -2.990 | 2.824 | 1.121 | 1 | .290 | .050 | .000 | 12.742 |
| 3. ETHNIC(1) | -4.641 | 2.881 | 2.594 | 1 | .107 | .010 | .000 | 2.737 |
| 4. REGSPEND | | | 6.632 | 2 | .036 | | | |
| REGSPEND(1) | 2.350 | .974 | 5.816 | 1 | .016 | 10.485 | 1.553 | 70.802 |
| REGSPEND(2) | -.020 | 1.179 | .000 | 1 | .986 | .980 | .097 | 9.879 |
| 5. REGINCOM | | | 9.909 | 2 | .007 | | | |
| REGINCOM(1) | -1.273 | .926 | 1.890 | 1 | .169 | .280 | .046 | 1.719 |
| REGINCOM(2) | 2.588 | 1.010 | 6.563 | 1 | .010 | 13.297 | 1.836 | 96.280 |
| 6. HARMO | -1.193 | .562 | 4.513 | 1 | .034 | .303 | .101 | .912 |
| 7. REGPREV | | | 5.964 | 2 | .051* | | | |
| REGPREV(1) | -2.223 | .984 | 5.105 | 1 | .024 | .108 | .016 | .745 |
| REGPREV(2) | -2.012 | 1.018 | 3.906 | 1 | .048 | .134 | .018 | .984 |
| 8. REGTOTDU | | | 12.144 | 3 | .007 | | | |
| REGTOTDU(1) | 1.026 | 1.135 | .818 | 1 | .366 | 2.791 | .302 | 25.799 |
| REGTOTDU(2) | -2.374 | 1.150 | 4.265 | 1 | .039 | .093 | .010 | .886 |
| REGTOTDU(3) | -.962 | 1.095 | .772 | 1 | .380 | .382 | .045 | 3.268 |
| Constant | 3.171 | 3.097 | 1.049 | 1 | .306 | 23.831 | | |

Note: a. Variable(s) entered on step 1: REDTRANS, REGPREV, REGGROUP, ENTRYDUR, REGTOTDU, REGATTRA, REGDISTA, REGORIGI, ETHNIC, GENDER, REGSPEND, REGEDUCA, REGINCOM, REGAGE, MARRIAGE, UNDER, HARMO.
b. model stops at Step 10.
c. *: significant at 0.10 level

Although ETHNIC is also present in this logit, it is at the margin of the 0.10 significance level (0.107). Its explanation is not carried out. Regarding the 1st hypothesis, the analysis provides strong support. One of the two cultural distance variables - HARMO is strongly significant at 0.05 level accompanied by less than one upper and lower values of confidence interval providing strong support to its inference to the whole population. The property of this variable has been elicited in Section 8.5.2; that is the lower the value of this variable, the closer the culture of tourists is to Chinese culture. The sign of the estimated coefficient of this variable expresses that it has negative effect on tourist destination choices. The *exp (B)* indicates that the bigger the value of HARMO, the less likely that tourists chose Guangzhou as their main destination, meaning that tourists who were farther from Chinese culture were less likely to visit Guangzhou and vice versa. This result is consistent with the findings regarding variable REGORIGI (2). Yet HARMO is much more statistically significant than cultural proxies. This indicates that, although both cultural distance and cultural proxies are significant, their 'sensitivities' are different. Cultural distance seems more sensitive in revealing tourists' choice differences than cultural proxies. The 1st hypothesis that there is a strong relationship between the choices of the main destination in China is supported and the link is relatively strong.

Although these cultural related variables are not equally significant, the presence of these variables or categories has produced convincing evidence that culture and/or cultural difference are strongly associated with the destination choices of tourists, particularly in their choices between Guangzhou and other places. This finding confirms those found in Logit I and II. Although they did not emerge in the first logit, the result is still convincing because it is reasonable to presume that Beijing's central position has suppressed the influences of culture and culture distance. This finding confirmed the discussion made in Chapter 5 that though places of origin and/or cultural difference are important, their impact is not simply straightforward. It seems that the impact is dependent on the tourist locations.

The appearance of cultural variables in Logit II could not be compared with that discovered in Logit III because not many cultural variables appeared in the former. It still lends proofs in a different perspective. It has been discussed in Chapter 5 as well that Shanghai is more similar to Beijing in many aspects than Guangzhou is. This can be explained as to why only one cultural variable appeared which indicates the slight similarity and major difference between Beijing and Shanghai. The difference between them is that, similarly to Beijing, Shanghai has quite balanced tourist arrivals from different regions, but it is more preferred by tourists from Japan and the GCRs. The effect of culture is more evident than it is in Beijing, but not as much as in Guangzhou. These findings confirmed that tourists' spatial choices within China are associated with their cultural backgrounds.

Another strong indication from all the three logits is the disappearance of geographical distance. We could be very confident that there is no evidence that geographical distance is influential in destination choices of tourists travelling within China. This point seems puzzling, because on the 3rd logit, the result shows that tourists who prefer Guangzhou were those from the GCRs, which are close to Guangzhou. And it might be easier to jump to the conclusion that this was due to the convenient geographical distance. However, a hidden truth has been revealed that although these regions are close to Guangzhou; it was not because of the distance, or mainly because of the distance that tourists were attracted to Guangzhou, but more because of their closer cultural ties. If this result could be inferred to the whole population, we have reason to conclude that the destination choice in the whole country of tourists from all places of origin abides by this rule.

Other variables' appearances in the final logit shed more lights about the influential factors of the dependent variable. REGGROUP appears again in this logit, like that in Logit I, with a strong significance level. This explains its convincing contribution to the SDIT. Different from that in the first logit, REGGROUP has a negative sign indicating that, tourists who travelled by tour group are less likely to visit Guangzhou. Both the upper and lower values of its confidence interval are less than one adding greater certainty to this interpretation. It seems that this finding is consistent with that found in Logit I that tourists who travelled by tour group like to visit Beijing more. But there is no difference in the tourists who visited Shanghai, because this variable does not appear in Logit II.

Two financial factors appear together in this logit – REGINCOM and REGSPEND. REGINCOME has appeared in Logit I and II. Both of them are significant at 0.05 level. Their appearance in this logit tells different stories. REGINCOME (2) is highly significant with a positive sign. A possible interpretation may be that Guangzhou was more preferable than Others by tourists who had income level between US$30,000.- to US$40,000.- comparing with those who had other levels of income. Similar to this variable is REGSPEND. Only REGSPEND (1) is significant, and it has a very large *exp (B)*. The positive sign of REGSPEND (1) could be interpreted as that tourists who spent less than US$800.00 were more than 10 times likely to visit Guangzhou. It might be easy to understand if we take account of the fact that tourists tended to stay a shorter time in Guangzhou as well.

As mentioned above, two variables - ENTRY and PLACE2RE have been removed from inclusion in the model building, as a result their effects could not be examined. However, taking account of its two occurrences in both Logit I and II, it might be easy to suppose that entry points were highly related to the outcome variables even parallel with them.

The variable of 'Number of previous visitations' (REGPREV) is associated with the choice of Guangzhou versus Others, although it does not seem to be relevant in the other two logits. The two negative relationships of this variable shown by its two categories may suggest tourists choosing to visit Guangzhou had visited China before more times than those choosing to visit Others. It makes sense considering that tourists who liked to visit this place were mainly ethnic Chinese and they are high in short break, repeated travel, excursion etc. Tourists who had not been to China before liked to visit places other than Guangzhou, and as a matter of fact, mainly Beijing or Shanghai. This might be owing to the varied appeal of these three places, and some other marketing reasons.

The negative sign of REGTOTDU (2) tells something similar as that in Logit II. It has a very significant level, indicating that the probability of tourists visiting Guangzhou increased as tourists stayed shorter times. Their normal duration of their stay was 5-9 days. However, the probability of tourists choosing Guangzhou was not differentiated by those who stayed less than 5 days or more than 15 days.

## 8.11 CONCLUDING REMARKS

This chapter has expanded on Chapter 7 in investigating further the spatial distribution of international tourists by identifying appropriate logistic regression models for the investigation. It has been confirmed that the logistic regression models presented in this chapter have been fairly clearly specified. Using this technique, the relationships between tourists' main destination choices in China and relevant influencing factors have been carefully examined. The general conclusion of this study is, among the three destinations choices in China, Beijing attracts balanced tourists from different parts of the world;

Shanghai has similar tourism appeal to Beijing; but Guangzhou attracts ethnic Chinese more and it attracts specific rather than general types of international tourists. It was proved that this pattern is affected by the cultural backgrounds of tourists; but not by the geographical distance between origins and the destinations of the tourists.

One novelty of this analysis is the point stressed on the role played by cultural and geographic distance variables in determining the probabilities of the main destination choices of tourists within China. The research also revealed that cultural related variables do not have equal ability in detecting cross-cultural differences of tourists. Another strength of this analysis is that it involves the characteristics of international tourists and predicts the results in a combined behavioural and socio-economic pattern. From this aspect, the effectiveness of the logistic regression analysis in locational choices research, and ability to combining disaggregate behavioural and socio-economic factors are clearly demonstrated.

Several caveats and limitations of the logistic regression analysis should be mentioned. Major ones include the use of a convenient sampling method. The results may not be easily generalisable. The group size disparity and the varieties in data structure, such as age, gender, trip attributes between different groups means that many independent variables have been transformed with fewer categories. In this situation, many variables used are often proxies or aggregate numbers that do not capture the subtleties of the original information collected from the survey. This suggests that future research needs to use more rigorous survey method if necessary. A scarcity of data also limited the estimation of the binary logistic regression models. This resulted in the imbalance between the occurrence of an event and non-event in a dependent variable, particularly, in the second and third logit. Some similar techniques, such as the multinomial logistic regression (MNL), have not been considered because they are more sensitive to the limited sample size, and their calculations are more complicated and involve more assumptions. Future research is suggested to use different methods to explore this issue in this study. Another point of caution is that it is evident that results of the analysis are in part dependent upon some subjective decisions. One important decision relates to the reduction of the destination choices in the depend variables. In the same vein, the condensing of the cultural groups limits the ability to generalise cultural influences. Detailed discussion of the points of improvement of this research will be elaborated in Chapter 10.

Nevertheless, an approach capable of modelling all aspects involved for all destinations and all cultural groups of international tourists in China is almost impossible; the result would be very difficult to interpret as well. As a principle, in interpreting the results of the model building, it is important to bear in mind that the model building is not considered as an accurate representation of the real world in an absolute sense. Instead, there should be considered in a relative sense (Hosmer and Lemeshow 1989: 12). The strength of making those choices is that it simplifies complex phenomena in order to gain insight into some main characteristics of the issues under investigation.

Taking account of the restriction of the data, the adopted model predicted reasonably well the observed destination choices of the international tourists in China. This shows on the models' different assessment statistics, as well as their convincing interpretations. Improvements have been achieved after detailed diagnostic analyses of the three models. So far, this thesis has presented most of the aspects of this research process. The aim of this research can be seen as adequately accomplished. The following two chapters will sum up the research progress, discuss the key findings, and evaluate its practical implications and contribution to the knowledge base.

# A CROSS-CULTURAL ANALYSIS OF THE SPATIAL DISTRIBUTION OF INTERNATIONAL TOURISTS IN CHINA

A dissertation submitted to Nottingham Business School
the Nottingham Trent University
in partial fulfilment of the requirements for the degree of
(Volume II: Chapter 9 to 10; Appendix 1 to 11)

DOCTOR OF PHILOSOPHY

By
Jiaolan Bowden
焦蘭 波頓

February 2003 • Nottingham, UK

# 9 DISCUSSIONS

## 9.1 INTRODUCTION

Chapter 7 and 8 have provided details of the data collection and data analysis of this research. This chapter summarises the findings identified from these two chapters and discusses them with reference to the literature reviewed. In Chapter 2 (refer to 2.5.2) the SDT were identified as having three features – pattern, direction and intensity. Also in Chapter 6 (refer to Section 6.3.1) the data analysis designed including three levels. The two chapters were built up around these three features progressing from lower level to higher level analysis. Chapter 7 relates to the general trip characteristics of the cross-national SDIT within China. It pays attention to the patterns and directions of the SDIT. Basic descriptive and univariate/bivariate data analysis techniques were used. Chapter 8 further investigate the issues focusing on the intensity and propensity of the SDIT. The multivariate logistic regression models were used to confirm the findings obtained in Chapter 7 and their relationships with cultural distance and cultural proxy variables. The level of data analysis moved forwards from cross-national exploration to cross-cultural confirmation.

## 9.2 GENERAL TRIP CHARACTERISTICS OF THE SDIT (REFER TO CHAPTER 7)

On the whole, Chapter 7 accomplished the preliminary identification of the travel patterns and flow directions of international tourists within China, and examined the relationship between the national/ethnic characteristics and the SDIT within China. Some distinctive travel characteristics of the travel patterns and directions of the tourists have been identified. Also the functional forms of tourism regions in China are elicited. A considerable amount of evidence suggests a relationship between the SDIT within China and tourists' national backgrounds. The applicability of some of the cross-national SDT theories was examined, such as central-peripheral theory and travel route models. New findings have been obtained and these provide a new insight into the existing theories.

### *9.2.1 Functional patterns of tourism regions in China*

In Chapter 4, a literature review showed that researchers using different approaches identified that tourists travel has varied patterns and directions at different geographical scales. For example, Forer and Peace (1984: 39) in their coach tour network in New Zealand identified five types of functional forms of tourist regions. They are Gateways, Major generators, Staging points, Minor generators, and Overflow nodes (refer to Section 4.3.3; Table 4-1).

The patterns identified in Chapter 7 bear a similarity to the literature, but have their own characteristics, which are germane to the intra-national scale. Using an adjusted typology of Forer and Pearce (1984), the destinations in China can be categorised into five groups. This is based on the functions of each tourism region and the patterns of tourist flows identified in Chapter 7. Along a hierarchical ladder, the five categories of tourism destinations are international gateways, regional nodes; major generators, minor generators and passing-through points

At the top of the ladder, the most important tourist destinations are the international gateways through which international tourists enter and/or leave China. Moreover, they are not only play an active role in the transit of international tourists to/from different destinations in China; they also possess important tourist attractions themselves and are major tourist destinations for tourists who conduct multiple destination travel. The two most unquestionable international gateways are Beijing and Shanghai, but the assumed international gateway position of Guangzhou is arguable as demonstrated from the data analysis.

This is because there are no diverse types of international tourists treating Guangzhou as their main destination, especially those from America and the UK. Unlike Beijing and Shanghai, Guangzhou appeals to only a special type of tourists – tourists from the GCRs, or ethnic Chinese tourists. This is at variance with the description of an international gateway, which should be either a passing-by city or a major destination for international tourists. Guangzhou attracts mainly single destination but not multiple destination travellers. Almost half of its arrivals visit only this city and then return home. Moreover, the tourist traffic between Guangzhou and the other two international gateways – Beijing and Shanghai are fewer than the traffic between the two gateway cities themselves.

The functional form of Guangzhou suits the 2nd category of tourist destinations – regional nodes more precisely than the 1st category. This type of destination refers to the places that possess major tourism attractions and are the main destinations for most of the international tourists after they have entered into China. Guangzhou is either the single destination or the first destination for most of the tourists from the GCRs but not a gateway for a wide variety of tourists. Though slightly different from the description of regional nodes, Guangzhou is used as an entry point by many tourists, it has been noticed that, apart from tourists who originate from Hong Kong SAR, many of the international arrivals arrive in Hong Kong SAR first and then enter into Mainland China through Guangzhou. Therefore, Hong Kong SAR is used as both their starting point and departing point. Hong Kong SAR seems to have the characteristics of being an international gateway to China, and its position shadows Guangzhou. As clarified in Chapter 5 (refer to Section 5.4.1.1), tourist arrivals from Hong Kong and Macau SARs are still treated as international tourists to China, the position of Hong Kong and Macau SARs is a unique feature of tourism in China. Nevertheless, as the geographical position and tourism appeal of Hong Kong SAR is not the focus of this research, the research does not elaborate on the relationship between Guangzhou and Hong Kong SAR. Future research into the spatial relationship between Hong Kong SAR and Guangzhou is advocated by the researcher.

Other destinations that belong to the 2nd category include the GSR and Xi'an (Capital of Shaanxi province). Shanghai is counted as an international gateway, its peripheral regions, such as Zhejiang and Jiangsu, are important passing-by areas for tourists to different areas; they are also important tourist attractions in their own right. Xi'an attracts 24.8 percent of tourists who visited a 2nd destination, and is used to disperse to other destinations along their journey.

The 3rd category is major generators, which are places or regions with specific attractions of a high priority but which do not function as a major passing-by point such as Yunnan, Yangtze, Sichuan, Wuhan, and Guangxi. These regions are treated as 2nd and 3rd destinations by multiple destination travellers. But they do not receive tourists as many as the destinations in the 2nd category such as Xi'an and the GSR. The difference between this category and the 2nd category is that the former is mainly for the purpose of sightseeing, but the latter fulfils a duel purposes for both passing-through and sightseeing.

The 4th category is minor generators, which are regions with specific attractions of a lower priority than the Major generators, but with enough importance to justify their inclusion in trips in addition to one or more major generators, such as Anhui, Shandong, Sichuan, Hunan and Tibet. These places have been visited by tourists, but the variety and volume are much more limited than those visiting destinations in the 1st and 2nd categories.

The final type is passing-through points, which are places adjacent to major gateways. They have no special attractions of their own, but depend on the major attractions in adjacent regions, such as the places in Northern China that are close to Beijing, Shenzhen (in Guangdong province) that are close to Guangzhou and so on. More than 85 percent of tourists who entered through the Northern China region such as Hebei and Tianjin (in Hebei province) and Heilongjiang etc., travelled to Beijing. They are normally not very important tourism cities, but have convenient international accesses. Therefore, they sever as the passing-through points for international gateways, regional nodes and major generators in their surrounding regions.

### 9.2.2 Patterns and directions of the SDIT within China

The data analysis in Chapter 7 showed that the SDIT within China is clearly patterned. These patterns are closely linked with the functional form of the tourism regions. One obvious direction of the SDIT is from the coastal to the middle part of China and then to the interior regions. In these costal regions, tourist flows are around some traffic centres, where tourist flows from and to different regions converge. The first one is the gateway centres. They are mainly Beijing and Shanghai where the bulk of tourist flows are in and out of these two places. Tourist flows around Beijing are more concentrated, and the largest volume of the flows is to Shaanxi province (Xi'an). Tourist flows around Shanghai are more evenly spread across different regions, particularly around the GSR (refer to Figure 7-11). The second centre is the Middle east regional centre, where tourist traffic from the Northeast and Southeast converge.

Deriving from the hierarchical order of the functional form of tourism regions, the SDIT also have a central-peripheral hierarchical order. The directions of tourist flows seem partly to abide by the rule proposed by Christaller (1963), that the flow directions are normally down the hierarchical ladder. However, other directions of tourist flows are also present. Tourist flows can have three directions. One is between different traffic centres. This direction can be seen as a horizontal movement, namely that tourist flows are between locations of the same functional forms. The second direction is from centres to peripheries. This can be seen as a vertical movement. The third direction of tourist flows is also a vertical movement, but in a reverse direction, i.e. from peripheries to centres. In this direction, tourists chose a small city to embark and travel to international gateways or major or minor generators (such as from Tianjin to Beijing). The volumes of tourist flows in these three directions are different. There is a similar volume of tourist flows between centres (such as tourist flows between Beijing and Shanghai), as down to the regional nodes to major and minor generators, the volume of the flows becomes more dispersed.

As discussed above regarding Guangzhou's international gateway position, another noticeable point is that Guangzhou has very weak links of tourist flows with both Beijing and Shanghai. It is primarily linked to its neighbouring regions, such as Guangdong, Yunnan and Guangxi, but not to a wide diversity of different regions and across different centres, as are Beijing and Shanghai. These flow patterns add more evidence that Guangzhou cannot be compared with the two important international gateway cities.

After embarking, tourists' travel has two modes – multiple versus single destination travel. In multiple destination travel, there are four basic types of travel route – linear, full orbit, partial orbit and abroad (refer to Section 7.3.9). Partial orbit refers to tourists' returning to places other than their entry points along their journey, and except for this small circles, within their whole journey they travel a direct route. This type of travel mode has been described by Perdue and Gustke (1985) and Mings and McHugh (1992) in their interregional leisure studies, as an important type of tourists' travel. This research seems to generate a different result from what Mings and McHugh (1992), who discovered that tourists are involved in highly circuitous trips, which are not designed to minimise the travel cost, distance and time (p.46). In this meso level research, partial orbit travel mode has no significant application. The majority of the tourists use linear and full orbit travel routes, as well as single destination travel. They are not likely to go back to any destination along their journeys. Although the full orbit and the linear pattern are different types of travel, the full orbit can be seen as a special type of linear pattern because in the former, tourists only go back to their entry point to depart. Going abroad and then returning back to China is very rare, and this is the same as in partial orbit travel. This can be explained that in long or medium haul travel, tourists make an effort to maximise their exposure to the tourism resources, and minimise their costs and/or other resources by avoiding visiting the same destination again. It is clear that apart from their entry and departure points, tourists try to avoid visiting the same place.

### *9.2.3 Cross-national differences in the SDIT*

The analysis in Chapter 7 has provided abundant evidence that tourists from the four places of origin have different spatial distributions within China. Generally speaking the four types of tourists can be separated into two groups based on their trip characteristics.

Significant differences between these two groups have been observed, and were empirically tested in Chapter 8.

Tourists from America and the UK are in the first group. The evidence of this research unambiguously supports the placing of these two types of tourists into a similar cultural group regardless of, the presence of some divergences between them. This is in line with the literature as regards the spatial behaviours of these two types of tourists (such as Brewer 1984; Cai *et al.* 1996; Cho 1991; Dybka 1987, 1988; Gyte and Phelps 1989; Laarman *et al.* 1989; Lollar and Doren 1991; Menezes and Chandra 1989; O'Malley 1991; Pi Sunyer 1977; Pizam and Reichel 1996; Skidmore and Pyszka 1987; Taylor 1987; Yiannakis *et al.* 1991).

Tourists from Japan and the GCRs can be put into a second group because of the extent of the similarities between them and their common differences with the first group. This has been observed by many researchers (such as Pizam and Jeong 1996; Reisinger and Turner 1998c) (refer to Section 3.5.3). However, tourists from the second group have many within-group differences themselves, and to a lesser extent so do American and British tourists. The differences and similarities of these four types of tourists are reflected in the fifteen trip characteristics in discussion (see Table 9-1).

In terms of main destination choices, it is clear that the percentages of tourists who visited Beijing are disproportionately high across all tourist groups, i.e. Beijing appeals to tourists from the four parts of the world equally. Shanghai attracts fewer tourist arrivals, and is not well balanced across different groups. It appeals to Japanese tourists the most, and then to the tourists from the GCRs, but has limited appeal to American and British tourists. Except for tourists from the GCRs, all the other groups of tourists made a low number of visits to Guangzhou. Even tourists from the GCRs do not share the same preferences. Taiwanese tourists are mainly attracted to Beijing, and to a lesser extent Guangzhou. Tourists from Southeast Asian countries prefer both Beijing and Shanghai. The Compatriot tourists from Hong Kong and Macau SARs prefer both Beijing and Guangzhou.

**Table 9 - 1 A summary of the differences of the travel characteristics between the four tourists' groups**

| Trip attributes | American | British | Japanese | Ethnic Chinese |
|---|---|---|---|---|
| Main destination choices | Beijing, Others (Yangtze, Shaanxi, Tibet) | Beijing, Others (Yangtze) | Beijing, Shanghai, Others (Guangxi, Jiangsu) | Beijing, Guangzhou |
| Main motivations | Leisure, culture | Leisure, culture | Leisure, culture | Leisure, culture and shopping |
| Transport on arrivals | Air | Air | Air, sea | Air, rail/sea/motor |
| Types of travel group | Package, alone | Package, alone | Package, friends | Package, family |
| Entry points | Beijing, Shanghai | Beijing, Shanghai | Beijing, Shanghai, Others | Beijing, Guangzhou |
| Single vs. multiple destination | Multiple | Multiple | Multiple, Single | Single, Multiple |
| 2nd places visited | Shaanxi (Xi'an); Yangtze, Zhejiang | Sichuan, Yangtze, Shaanxi (Xi'an), Jiangsu | Beijing, Guangxi (Guilin), Shanghai | Guangzhou, Northern China, Zhejiang, Jiangsu, Shanghai |
| Terminations of travel | Do not leave from where they enter | Do not leave from where they enter | Leave from where they enter, specifically Shanghai | Prefer Beijing and Shanghai |
| Travel routes | Linear | Linear, full orbit | Single destination, full orbit, linear pattern` | Single destination, linear pattern, full orbit |
| Durations in the main destination (mean number of days) | 4.95 | 4.32 | 4.54 | 4.04 |
| Durations in the entry point (mean number of days) | 4.07 | 3.7 | 3.7 | 3.9 |
| Durations in the whole country (mean number of days) | 12.84 | 13.23 | 8.28 | 6.42 |
| Number of places visited (mean number) | 3.86 | 4.51 | 2.20 | 2.04 |
| Number of previous visitations | 0.63 | 0.85 | 2.39 | 12.17 |
| Trip expense | Above US$1,000.- | Above US$1,000.- | Above US$800.- | Below US$800.- |

In opposition to the preferences shown for Guangzhou, excepting tourists from the GCRs, all the other three types of tourists have high shares in 'Others' including places situated in remoter areas but with captivating tourism appeals such as Tibet and the Yangtze River. This demonstrates another important travel characteristic of the tourists. In general, tourists from the GCRs are less interested in the less popular and remoter tourism destinations than their counterparts from America, the UK and Japan. It seems to suggest that international tourists from places of origin which are less culturally related to Chinese culture are more attracted to places where cultural and natural tourist resources are rich within China. This tendency is more obvious in the 2nd tier tourism regions than in the 1st tier of tourism regions. The 1st tier destinations, such as Beijing and Shanghai appeal to a relatively balanced variety of international tourists because of their significant tourist appeal. Down the hierarchical ladder, from the 2nd tier destinations such as Xi'an and the GSR, significant differences of tourist flows become more evident (refer to Section 7.3.7). For tourists from the first group, none of the two international gateway cities – Beijing and Shanghai are key 2nd destination choices. They prefer Xi'an most, and also like the Yangtze River but have low interest shares in Guangzhou. They all like to visit 'Others' which are not in the 1st and 2nd tier tourism regions.

Japanese tourists, different to the tourists in the first group, are more dispersed in China. Tourists from the first group concentrated in Xi'an and the Yangtze River as their 2nd destinations. But Japanese tourists have very low shares in these two places. They prefer Beijing as their top 2nd destination choice, then Guilin (in Guangxi province) and the GSR. Their movements are mainly between the two gateway cities – Beijing and Shanghai, and to a wider extent, between Beijing and the GSR. They prefer both horizontal and vertical movement. This is different from American and British tourists who enter from Beijing and Shanghai, but do not like to choose them as their 2nd destinations. Their movement is mainly vertical, i.e. from the international gateways to the peripheral tourism regions.

In comparison, tourists from the GCRs have a very concentrated distribution in the North and the GSR, and to a lesser extent, the whole Northern China region. They have a very high share in Beijing, Shanghai and Guangzhou, but they made no visits to Xi'an, the Yangtze River and Guilin (in Guangxi province) or any of the other destinations which are appreciated by American, British and Japanese tourists.

From this, it seems that American and British tourists like to travel to the places unique in terms of their cultural and historical features and tourism resources, and to a lesser extent so do Japanese tourists. Also American and British tourists like to continue their travel vertically. Japanese tourists prefer both horizontal and vertical travel. The travel of tourists from the GCRs is predominantly horizontal.

In terms of travel mode, the comparative analysis showed that both American and British tourists are high in multiple destination travel and very low in single destination travel. Tourists from the GCRs have the highest percentage of single destination choice and to a lesser extent so do Japanese tourists. Single destination travellers are mainly from shorter distance origins, and are more likely to have visited China before (refer to Section 7.3.6). For multiple destination travel, American and British tourists prefer to travel by a linear route, whilst Japanese tourists like to travel a full orbit. This might be linked to the different travel arrangements of these tourists and their social-economic characteristics or attitudes toward travel. A full orbit travel seems more convenient, because the starting and ending points are the same. However, tourists have to repeat at least once visit to a destination, and are therefore deprived of a chance to go to a place they have not yet visited. This is true in tourists' choice of entry and departure point. American and British tourists are alike in that they all like to use different entry and departure points, but Japanese tourists tend to have the same entry and departure points. Similar to this fact is that the number of places visited decreases from British to American to Japanese tourists, and then to tourists from the GCRs. For tourists from the GCRs, except for their high percentage of single destination travel, they show equal preference for these two types of travel modes.

The analysis revealed that types of tourists' travel group are linked to the tourists' places of origin. American and British tourists prefer packaged tours most; they are followed by Japanese tourists. Tourists from the GCRs have the lowest share of packaged tour travel. This can be explained that, for American and British tourists, travelling to China is a long journey and therefore marketing arrangements are considered to play a more important role because of the uneasy and more costly access to the destinations. In this aspect, American and British tourists are alike again. On the other hand Japanese tourists and tourists from the GCRs are more alike, in that although they have a reasonable high share in package tour travel, they have quite a high share in travel with friends and relatives as well (refer to Section 7.3.4). For them, because they are from a shorter distance, travel is less costly, and they have more knowledge about the destination, their dependence on the packaged tour is weaker than that of American and British tourists.

Nevertheless, though the comparative analysis shows that tourists from the GCRs are quite similar to Japanese tourists in some aspects, such as their preference for Beijing and Shanghai as 2nd destination, horizontal movement and travelling with friends and relatives, they are different in many aspects as well, such as their preferences for main destinations, travel routes and durations of stay. Putting them into one cultural group is a rough categorisation. Their distinctive characteristics can outperform their similarities in many situations. This finding leads to the same classification made in Chapter 5 using correspondence analysis (refer to Section 5.4.3.6). Japanese tourists and tourists from the GCRs are two distinctive groups but within a broader similar cultural sphere.

American and British tourists have their own differences as well. For instance, after entering China British tourists are less scattered in China's tourism regions than American tourists and they tend stay longer in the whole country and visit more places. However the extent of their differences is not as significant as the tourists in the second group. This raised a question that for tourists "under a similar cultural umbrella, such as is the case with American and British tourists, if travel differences still exist, what kind of variables are causing these differences?" "Also, if these differences are due to cultural reasons, how can tourists' similarities be explained?" These questions seem to give rise to more queries about culture. But one thing is clear that cultural difference is a complex notion, and the use of cultural proxies is not effective enough to elucidate the effect of culture. This leads to the consideration of the use of more rigorous cultural variables in a cross-cultural study. As discussed in Chapter 3 (refer to Section 3.4.2), the 'cultural distance' variable has been clarified as representing individual tourists' difference at a collective cultural level. It has the potential not only to reflect the difference of cultures, but the degree of the difference. In explaining the differences of tourists identified here and answering the questions raised, this variable was used in the confirmatory analysis in Chapter 8.

### 9.2.4 Geographical distance function

In Chapter 7, the function of geographical distance has been observed with some certainties. However, the same as the effects of cultural proxies, distance effects are not consistent. First, the impeding effect of geographical distance within China was clearly indicated in some situations, such as the choices of single or multiple destinations, durations of stay, number of places visited, and number of previous visitation, etc. They basically imply that international tourists tend to visit destinations that are within a shorter distance after they have entered China, such as tourist flows between Shanghai and the GSR, Guangzhou and Guangdong, and Beijing and the Northeast tourism region. On the other hand, the geographical distance beyond the destination country shows some different features. In general it appears that distance has an encouraging effect on tourists' travel. The further tourists come from, the more likely they are to visit Beijing and Shanghai, travel to more places, stay a longer time, have fewer previous visitations, and are likely to choose those places which are rich in tourism resources, even though they are in remoter regions.

The inconsistency of distance is also reflected in the level of the hierarchy of the functional form of tourism destinations and travel patterns of tourists. Down the hierarchical ladder of tourist destinations, the lower the tourist flows go, the more evident is the distance effect and vice versa. That is that distance is more involved in vertical movement, such as from entry points to the 2$^{nd}$ destinations then to remote regions. In this situation, tourist flows diminish gradually as distance increases. Contrary to this, the distance effect is less prominent when there is a horizontal movement, such as tourist flows between international gateways (Beijing and Shanghai), or between regional nodes (Xi'an and the GSR). Though the inconsistent effects of distance across varied geographical scales have been discussed by some researchers (such as Paul and Rimmawi 1992; Murphy and Keller 1990; Flognfeldt 1999), the dependence of distance on the functional form of tourist destinations and their travel patterns has not been widely discussed in literature.

In summary, although Chapter 7 has not used cultural but origin variables, the existence of cross-national differences in the SDIT has been identified and confirmed using chi-square tests. Different functional forms of tourist destinations in relation to the patterns and directions of the SDIT within China were also identified. An easy explanation of the differences and similarities between tourists has been related to their national/ethnic backgrounds as well as the accessibility or geographical distance of tourists to different destinations within China. However, this analysis cannot be conclusive because it is not a causal analysis. Chi-square tests have the advantage of being able to analyse categorical data and are robust and easy to apply, but are limited because they provide no information concerning the direction and strength of an association. They also take no account of the effects of other variables. The analysis raised more issues relating to the incapability of cultural proxies in precisely depicting the behavioural differences of tourists. Speculations are also related to the true properties of geographical distance in view of its inconsistent appearance. In the meantime, this chapter has not discussed the intensity of tourists' travel, which is one of the key features of the SDIT, nor has it investigated attributes other than cultural proxies and geographical distance. It is clear that more work needs to be done to explore and explain the relationships identified here using a variety of socio-cultural and demographic attributes. These issues were examined in Chapter 8.

## 9.3 CROSS-CULTURAL DIFFERENCES IN THE SDIT WITHIN CHINA (REFER TO CHAPTER 8)

Based on the findings in Chapter 7 and the literature reviews, Chapter 8 aimed to expand on the confirmation of the differences of the SDIT identified in Chapter 7 using cultural attributes of tourists and to examine the intensity and propensity of the SDIT. The focus of this analysis was on the potential influence of cultural and geographical variables in combination with other relevant social-demographic variables on the SDIT. Three grand hypotheses were proposed in Chapter 8 that there are strong relationships between the choice of the main destinations in China and the cultural distance and cultural proxies (including places of origin and ethnicity) exhibited by the tourists from four different places of origin; and there is a weak relationship between the choice of the main destinations in China and the perceived geographic distance of tourists between China and the origin of the tourists. The logistic regression technique was used to test the hypotheses and three final models were obtained. They are Logit I (Beijing versus Others), Logit II (Shanghai versus Others) and Logit III (Guangzhou versus Others). The empirical results of the model building lead to the following key findings.

### *9.3.1 Cultural proxies and cultural distance*

First, four cultural related variables were used in the analysis to explore the importance of culture on the SDIT. They are two culture proxies – places of origin (REGORIGI) and ethnicity of tourists (ETHNIC); and two cultural distance variables – HARMO (maintain harmony) and UNDER (understanding Chinese culture) which are derived from factor analysis. Logit I does not show any sign of the effects of the cultural proxies and cultural distance factors on the outcome variable. However in Logit II and Logit III the effects of these variables began to show.

ETHNIC is very significant in Logit II; adding to this result, HARMO as well as one category of REGORIGI appeared significantly in Logit III. Their interpretations across the three logits were highly consistent with each other, accompanied by reliable goodness of fit assessments of the models, including similar signs, magnitudes, and suitable confidence intervals. These findings support the 1$^{st}$ and 2$^{nd}$ hypotheses. Though the importance of these cultural related variables was different in the three logits, the results validate each other convincingly. The findings provide support to the examinations in Chapter 5 (refer to Section 5.4.2) and Chapter 7, that cultural/national factors are strongly significant to the SDIT.

However, one interesting finding regarding culture is that the differences in culture are not reflected in every destination choice, that is that cultural related variables are positively linked to the destination choice of tourists within a destination country; but the linkages are not constant across all tourism destinations. This has not been widely discussed in the literature. The absence of the cultural proxies and cultural distance variables in Logit I does not contradict the 1st hypothesis; it only affirms the uniqueness of Beijing as a destination to inbound tourists in comparison to the other places. It could only be explained that Beijing does not have different appeals to diverse cultural groups of tourists. This point confirmed the discussion made in Chapter 7 (refer to 9.2.3) and Chapter 5 (refer to Section 5.4.3.3) that tourists generally have similar preferences for Beijing despite being from different origins. The special characteristics of being the capital of China and the hub of international tourism seem to grant Beijing a "culture-free" attractiveness; that is it appeals to tourists of all cultural backgrounds.

Another distinct finding in Chapter 8 regards the identification of the divergence of the cultural related variables. Despite the fact that all of the four cultural variables used in this research are similar to each other, their varied properties for deducing the differences of the SDIT are subtly indicated. The explicit culture proxies and implicit cultural distance variables are not straightforwardly different; one slim piece of evidence to reveal their differences is that when cultural factors are strongly non-influential, such as in Logit I cultural proxies and cultural distance do not diverge too much. But in Logit II and III culture's effect becomes stronger and divergence between cultural proxies and the cultural distance variables is discernible. In Logit II, only ETHNIC appeared in the final model but none of the cultural distance variables. This can be explained by Shanghai being an international gateway; it has different appeals to different types of tourists, but still keeps some extent of 'culture-free' attractiveness to general types of tourists as does Beijing. The extent of this 'culture-free attractiveness' is down the hierarchical ladder from Beijing, to Shanghai. Whereas in Logit III, more cultural related variables appeared. The cultural distance variable – HARMO is more statistically significant than the two cultural proxies. This shows that Guangzhou is a 'culture-specific destination'. It has distinctive appeal only to specific but not general types of tourists.

This might be explained that though cultural proxies such as ethnicity and origin can differentiate tourists' spatial behaviours, they can not differentiate tourists' behaviours to the same extent as the cultural distance variable does. The reason might be that the cultural distance variable is an individual-specific variable reflecting an individual's cultural characteristics; ethnic/national variables are group-specific variables reflecting the collective cultural propensity of a group. Therefore in some situations neither collective nor individual cultural variables appears significant because culture biologically has no or only minor impact on tourists, as seen in Beijing. In another situation culture has a moderate biological impact therefore collective cultural variable becomes more significant and conceals the effects of individual cultural variables, as seen in Shanghai. Furthermore in a situation where cultural effects are strongly biologically prominent, individual cultural variable can not be concealed by collective cultural variable therefore both collective and individual cultural variables appear together and strongly significant, as seen in Guangzhou. The findings from the three logits prove that the collective cultural proxies – nationality and/or ethnicity are not equivalent to the individual cultural distance variable – HARMO in revealing cross-cultural differences in the SDIT.

Researchers have argued vigorously about the difference between country of origin (or nationality) and culture in differentiating tourist behaviours. Some state that the former is more important (such as Enoch 1996; Flognfeldt 1999; Institut National de Statistiques 1980; Kozak 2001; Reid and Reid 1997; Valentine *et al. 1999;* Yuan and McDonald 1990); whilst others state that culture is the true predictor (Berry 1980; Durvasula *et al.* 1993; Garrett 1980; Grunert *et al.* 1989; Huff 1960; Kliman 1981; Murphy and Keller 1990; Richardson and Crompton 1988a, 1988b; Summers and McColl-Kennedy 1998). Most of the researchers have mixed culture with nationality in their studies, and have not distinguished between the concepts of cultural proxies and cultural difference either. Though Dann (1993), Pizam and Sussmann (1995) and Oppermann (1993a) have tried to question the relationships between culture and nationality, and state that caution should be paid in the use of these interwoven concepts, their arguments cannot be empirically proven. Many researchers have simply used cultural proxies such as nationality, language, or race at a collective level, but studies using these variables cannot be strictly seen as a cross-cultural research.

In this research, the comparison was based on a 'cultural distance' variable which was constructed by means of a series of cultural dimensions, in particular Confucian value system which have been investigated extensively by cross-cultural researchers such as Hofstede (1980a, 1983, 1991) and the Chinese Culture Connection (1987). They maintain that these dimensions are fundamental in conducting cross-cultural research because they form the grids of cultural comparisons. The comparison is also based at an individual level. The results of this research suggests that individual 'cultural distance' variable is more sensitive in detecting real cross-cultural differences than using collective cultural proxies, such as ethnicity, language and origin. The latter might produce deceptive results.

Given the importance of culture in many aspects of human behaviours, the sensitivity of the spatial choice of tourists to the cultural variable instead of the origin variable is not surprising. This can be understood that though culture is the shared way of life of a group of people, it shapes their attitudes and personalities; culture is still expressed by individuals and varies from one to another. Therefore disintegrating culture into the individual level should allow a more precise understanding of culture's effects (refer to Chapter 3.2 and 3.3).

The analysis also indicates that, as discussed in Chapter 3, the use of nationality as a proxy for culture can still be effectively adopted, even though it is less sensitive. These variables are interrelated with culture even though cultural differences across nations might be partially rather than completely different (Peabody 1985). It has been suggested that one way to avoid suffering from the limitations of using cultural proxies is to use a combination of cultural elements, such as considering a variety of contexts beyond national culture. This can include ethnicity, social class, language, value system, personality and so on (Brislin 1993; Cushner *et al.* 1992; Cushner and Brislin 1996; Pedersen 1988). The findings in this research supports the use of this cultural element approach. On the whole, this research sheds new insights onto the unresolved issue of the effect of different cultural variables. But as the findings are drawn from a discrete choice model, they are also confirmed by empirical evidence. The cultural related variables are similar and relevant to tourist' spatial behaviour, but subtle differences exist between them and they do not necessarily provide the same resolution in a cross-cultural tourists' behaviour study. The use of cultural dimensions to construct cultural distance variables represents a new way to understand the cross-cultural tourism phenomenon.

### *9.3.2 Geographical distance*

Another important finding in Chapter 8 is concerned with confirmation of the effect of geographical distance. In Chapter 5, using secondary official statistics and Chapter 7, using exploratory techniques, one major research questions relating to the tourism practice in China has been raised. It is related to the true properties of the geographical distance attribute. It seemed that distance showed distinct relationships with the patterns of the SDIT within China. In general, as distance decays, the number of tourists visiting remote regions declines. The same effect was observed in Chapter 7. However, the effect is not consistent across all tourism regions and patterns of tourists' movement. It is more observable in the travel tourists made outside China and in the pattern of vertical movement. However, neither of the Chapter 5 and 7 could confirm this effect, and none of these two chapters takes account of the effects of other socio-economic variables in their analyses. Though explanations were linked to the effect of cross-national or cultural differences, it is sometimes difficult to clarify whether the differences in tourist traffic are due to distance itself, or places of origin or something else. For example, there is a diminishing ethnic Chinese traffic to the remote tourism destinations in China. If this is because of distance, then how to explain the preferences of American and British tourists to these regions as they are from further distances?

These questions were transformed into three hypotheses in Chapter 8, and the 3rd one aims at verifying the effect of geographical distance on the SDIT within China. While it is risky to draw conclusions from only one study, the analysis in Chapter 8 yielded distinctive insight from the three binary logistics regression models that is contradictory to the observations in Chapter 5 and Chapter 7; there was no evidence to prove that geographical distance is significant in the SDIT, i.e. the probability of tourists travelling to different locations within China. The validity of this finding has been supported by the results obtained from all three binary logits in which a unified absence of distance variables is almost self-explanatory.

This finding is noteworthy in that in current literature, the distance effect and the distance decay effect in particular have been observed repeatedly by many researchers at different geographical scales (such as Archer 1976; Beaman 1974; Clark and Avery 1978; Cesario and Knetsch 1970; Crampton and Tan 1973; Flognfeldt 1999; Haider and Ewing 1990; Huyber and Bennett 2000; Font 2000; Murphy and Keller 1990; Williams and Zelinsky 1970). However research results are not always consistent across different geographical scales. If this is easy to understand, at the intra-national scale, research has contradicted each other as well. For example Murphy and Keller (1990) confirmed that the SDIT in Vancouver Island, Canada, was affected by the distance decay effect. Also, Flognfeldt (1999) noticed the same in his study of the SDIT in Northern Norway. On the other hand, at the same scale, other researchers such as Oppermann (1992), Paul and Rimmawi (1992) have reported different observations (refer to Figure 4-5, Section 4.5). As much of the meso level research is exploratory in nature, the discrepancy is unsettled (Forer and Pearce 1984). Given this situation, the findings reported in this research provide valuable information on this divergence.

This finding also attests that although in some data analysis, such as in Chapter 5 and 7, the distance variable seems to be involved in the destination choice of tourists. The analysis in Chapter 8 suggests that this is not due to tourists' intentional responsiveness to distance, but some other factors, such as culture, personality or their travel arrangements. These factors might be concealed by the overt distance factor. In this analysis, if it is easy to accept that geographical distance does not appear in Logit I and II, its absence in Logit III is unexpected. Because Guangzhou attracts the majority of the ethnic Chinese tourists from the GCRs. By instinct, distance would be expected to be involved in their spatial choice behaviour. The analysis in Chapter 5 and Chapter 7 also provided support to this impression. However, Logit III does not show any trace of the influence of the distance variable. This reveals that observation without empirical inference cannot undergo scientific scrutiny, and intuition can be misleading.

As mentioned in Chapter 4, research in the SDT is scale-specific, including the macro, meso, and micro levels. Researchers also agreed that geographical distance presents itself differently at different scales. Therefore the findings obtained in different studies might have their situational validity. It is necessary to stress that this research investigates the SDIT within a destination country, which is at the meso scale. At this scale the research verifies the hypotheses and is quite confident to conclude that the SDIT within a destination country is not significantly affected by geographical distance.

### *9.3.3 Social-demographical attributes*

In addition to the focal findings regarding culture and distance, other findings have been obtained in Chapter 8. These relate to the importance of some of the social-demographic characteristics and trip attributes of tourists to the spatial choices made by tourists. First, two financial variables have been incorporated into the model building, and have produced varied results. The first one, 'levels of income' (REGINCOM) is a significant variable. It has appeared in all the three logits with high significance levels. Its explanation is slightly subtle. One conclusion that might be reached is that the spatial behaviours of tourists within China are related to their economic status; normally Beijing tends to attract tourists of different levels of income, Shanghai attracts tourists who have media to low of income and Guangzhou is visited by the medium income group. The other trip expense variable (REGSPEND) has appeared only in Logit III, indicating that tourists who visited Guangzhou tend to spend less. But there is no big difference to those who visit Beijing and Shanghai. This seems reasonable if we consider that tourists who travelled to Guangzhou tended to be short-breakers and excursionists.

Another noticeable variable is 'type of travel groups' (REGGROUP). This variable could be seen as an indicator of market arrangements. The effects of market arrangements have previously been recognised as an influential variable (such as Woodside *et al.* 1988;

Woodside and Lysonski 1989). It appeared significant in Logit I and III, though not in Logit II. This result could clear one of the common questions raised in tourist behaviour research, "that if tourists' travel is arranged by tour operators, are all these analyses regarding other influencing factors meaningless?" However, the analysis is meaningful in that in addressing the key research questions, it has taken consideration of other interfering attributes as well. This is one of the strengths of the logistic regression model, that the entangled relationships between the independent variables and the dependent variables, as well as the relationships between the independent variables themselves can be logically presented. The findings show that we can be quite clear of the individual effects of the independent variables, when other variables are present as well as their collective effects on the dependent variables. Regarding the effect of the types of travel group of tourists, the finding suggests that even if tourists such as American and British tourists have choices to travel to different routes arranged by varied operators, they will still make the choice to travel to Beijing and Xi'an and so on. That means that although market arrangement determines the spatial choices of the tourists, their choices also shape the market arrangement conversely.

'Entry points' (ENTRY) is another observable factor. This variable has been involved in all the three logits. Although its relevance to Logit III was not directly derived from the model building, the possibility of this variable completely paralleling the dependent variable provides tentative proof that it might interfere in the model building. A second thought regarding this finding relates to the geographical distance variable. Though instinctively it seems that the choice of an entry point as the main destination represents a short travelling distance for tourists, the contradiction is that the distance variable does not appear significant in all of the three logits, whilst ENTRY seems to be significant in all of them. From this we might understand that the links between entry places and main destinations is not the result of distance, but probably marketing convenience, such as trip arrangements, types of travel groups, cultural reasons and so on.

'Number of previous visitations' (REGPREV) appeared once in Logit III, but is not very evident in the other two logits. The appearance of this variable in Logit III helps to clarify the inconsistency of the importance of this variable in the literature. Some researchers identified that this variable is influential in tourists' spatial behaviour (Fesenmaier 1985; Gyte and Phelps 1989; Mazursky 1989; Oppermann 1997, 1998; Watson, Roggenbuck and Williams 1991; Woodside and MacDonald 1994); but other researchers identified different results (such as Schmidhauser 1976; Woodside and Lysonski 1989). This finding does not contradict either of the views, in that in Beijing and Shanghai it does not have any effect when the destinations have a strong appeal to all types of tourists, but it does have an impact in a destination such as Guangzhou that attracts special types of tourists. Therefore, like cultural variables, the effects of tourists' previous travelling experience are also destination related.

The function of attractiveness was investigated in this analysis. It only appeared in Logit I suggesting that tourists who rated low the attractiveness of their main destinations tended to visit Beijing more and vice versa. This finding seems difficult to explain at first. But another possible direction of the causality might be that tourists who chose to visit Beijing tend to rate low on the attractiveness of their main destination. The low rating happened after they had arrived in the country, and probably after they had visited their main destination. This means that tourists who visited Beijing are less satisfied than those who chose to visit Others. This feature has not been identified in Logit II and III. A possible explanation can be that tourists who chose Beijing as their main destination tend to have a higher expectation of their main destination than those who chose to visit Others. Therefore the attractiveness of the destination itself is more important to them. Whilst tourists who visit places other than Beijing tend to travel for the purpose of VFR and/or leisure, therefore, the attractiveness of the destination is less important than the activities they conduct, hence less significant in their rating.

Another important finding is that, contrary to the performance of trip attributes and socio-economic attributes, most of the demographic characteristics of tourists show insignificant effects in this analysis. Among all the 19 involved variables, those that have not appeared once in any of the three logits are mostly demographic variables. They are gender (GENDER), final levels of education (REGEDUCA), marital status

(MARRIAGE) and one trip attribute variable – transport on arrivals (REDTRANS). It is suggested that socio-economic factors, such as culture and income are more important in determining tourists' spatial behaviour than demographic attributes. This seems to contradict some of the research results in the literature (such as Huybers and Bennett 2000; Lang *et al.* 1997; Oum and Lemire 1991; Richardson and Crompton 1988; Um and Crompton 1990; Woodside and Lysonski, 1989). For example, in Richardson and Crompton's (1988) cross-cultural study of French and English Canadian vacation patterns in Canada, they found that demographic variables, such as age, education and income are influential variables to differentiate the spatial behaviour of these two types of tourists. Also, in Oum and Lemire's (1991) research, they found that marital status and gender could affect Japanese tourists' destination choices among a set of countries. Though these studies are at varied scales, the findings obtained here provide a source of caution in interpreting the effects of demographic characteristics on the SDT.

What is more, all of these findings obtained in Chapter 8 shed lights on the varied functional appeals of the three gateway cities of China. It has been discussed that the choices of the three destinations in the logistic regression model building actually represent three major tourism regions in China – the Northeast, Middle east and Southeast tourism regions; and Others represents the rest of the country. The functional differences have been identified in Chapter 7. The findings in Chapter 8 empirically confirmed these observations. The results indicate that Beijing and Guangzhou are quite opposite to each other in terms of their natural attractiveness. Beijing attracts general types of tourists because of its culture-free appeal. Guangzhou attracts special types of tourists, such as tourists from the GCRs. Shanghai rests in the middle of Beijing and Guangzhou attracting less broad types of tourists than Beijing. The functional differences between these three cities seem to lie on their tourism appeals more than on their locality, i.e. the geographical distances to tourists' origins. This finding has significant implications to tourism practioners in China.

In conclusion, the analysis in Chapter 8 concludes that hypothesis one and two regarding the cultural proxies and cultural distance variables affecting the SDIT were strongly supported. However, some of the findings are consistent with the literature, such as the importance of these cultural variables in the SDIT; some are novel to it, such as the different sensitivities between these variables in detecting the differences of SDIT. The third hypothesis was not supported. This questioned the results regarding the effect of distance that has been emphasised widely in the literature. Finally, Chapter 8 also identified that some of the socio-economic variables and trip attribute variables are important in the SDIT, but provided no strong evidence that demographic variables such as gender and marital status link to the SDIT. The functional forms of tourist destinations identified in China particular the three metropolises strengthened the practical values of this research. Table 9-2 summarises the key statistics from the three logits and the characteristics of tourists who are likely to choose the three destinations.

**Table 9 - 2 Destination choices of tourists and influential factors**

| Attributes | Logit I (Beijing vs. Others) | | Logit II (Shanghai vs. Others) | | Logit III (Guangzhou vs. Others) | |
|---|---|---|---|---|---|---|
| | Exp (B) | Sig. | Exp (B) | Sig. | Exp (B) | Sig. |
| 1. REGGROUP (1) | 2.857 | .015 | - | - | .103 | .001 |
| 2. ENTRY | - | .000 | - | .000 | - | .113 |
| ENTRY(1) | 5.049 | .004 | .023 | .004 | .122 | .474 |
| ENTRY(2) | .326 | .044 | 10.407 | .013 | .005 | .098* |
| ENTRY(3) | .031 | .001 | .000 | .728 | .050 | .290 |
| 3. PLACE2RE | | -.065 | - | - | - | - |
| PLACE2RE(1) | 1.227 | .806 | - | - | - | - |
| PLACE2RE(2) | 3.494 | .126 | - | - | - | - |
| PLACE2RE(3) | .744 | .685 | - | - | - | - |
| 4. REGATTRA | | .030 | - | - | - | - |
| REGATTRA(1) | .096 | .029 | - | - | - | - |
| REGATTRA(2) | .048 | .009 | - | - | - | - |
| 5. REGINCOM | | .008 | - | .116 | - | .007 |
| REGINCOM(1) | .981 | .965 | 7.192 | .041 | .280 | .169 |
| REGINCOM(2) | .141 | .003 | 4.943 | .109 | 13.297 | .010 |
| 6. ENTRYDUR | - | - | 1.289 | .022 | - | - |
| 7. TOTALDUR | - | - | .874 | .058* | - | - |
| 8. ETHNIC(1) | - | - | 12.216 | .007 | .010 | .107 |
| 9. REGAGE | - | - | 3.985 | .090* | - | - |
| 10. REGSPEND | - | - | - | - | - | .036 |
| REGSPEND(1) | - | - | - | - | 10.485 | .016 |
| REGSPEND(2) | - | - | - | - | .980 | .986 |
| 12. HARMO | - | - | - | - | .034 | .303 |
| 13. REGPREV | - | - | - | - | - | .051* |
| REGPREV(1) | - | - | - | - | .108 | .024 |
| REGPREV(2) | - | - | - | - | .134 | .048 |
| 14. REGTOTDU | - | - | - | - | - | .007 |
| REGTOTDU(1) | - | - | - | - | 2.791 | .366 |
| REGTOTDU(2) | - | - | - | - | .093 | .039 |
| REGTOTDU(3) | - | - | - | - | .382 | .380 |
| **Tourists' characteristics** | Appeals to a wide range of tourists of different cultural backgrounds; tourists who use packaged tour; like to enter at Beijing; have high or low levels of income. | | Appeals to a wide range of international tourists, but more to Japanese tourists and tourists from the GCRs; tourists who enter at Shanghai, have low income level; below 45 years; stay shorter duration in the whole country but longer duration in the entry point. | | Appeals to tourists from the GCRs, few Japanese and American tourists, but not to British tourists; tourists who have cultural backgrounds closer to Chinese culture; have medium level of income; spend less and visited China more previously. | |

*: Significant at 0.10 level.

## 9.4 CONCLUSIONS

This chapter summarised the findings obtained from Chapter 7 and Chapter 8, and discussed them with reference to the literature as well as the discussion made in Chapter 5. Chapter 7 investigates the general trip characterises of tourists and identifies the key travel patterns and directions of the SDIT and links them with tourists' places of origin. Chapter 8 conducted a confirmatory investigation of the findings obtained from Chapter 7 using a discrete choice approach and focuses on explaining the cross-cultural differences of the propensity of the SDIT.

In conclusion, the findings obtained in this research partially support the literature, it also expands the literature in the following aspects. First, the empirical results confirmed that the SDIT within a destination are differentiated by their cultural backgrounds. This is reflected in the different choices of tourists from the four places of origin. However, despite their differences, there is also a great extent of similarities between tourists from America and the UK. Tourists from Japan and the GCRs are distinct, but they share more similarities with each other than with American and British tourists. This finding confirms the separation of Western travellers from Asian travellers (such as Pizam *et al.* 1997; Pizam and Jeong 1996; Pizam and Reichel 1996; Pizam and Sussmann 1995).

In terms of travel patterns and directions, American and British tourists prefer vertical movement (i.e. movement down the functional hierarchy of destinations), travel liner routes and visit multiple destinations; Japanese tourists prefer both vertical and horizontal travel (i.e. travel between destinations of the same hierarchical rank), like to travel a full orbit route and visit both single and multiple destinations. On the other hand, tourists from the GCRs like to travel horizontally and to visit both single and multiple destinations. In terms of destination choices, American and British tourists prefer Beijing, Xi'an, the Yangtze River, and some remote destinations, such as Tibet and Sichuan. Japanese tourists prefer Shanghai and Guilin. Tourists from GCRs prefer Guangzhou, Guangxi and the GSR. This shows that American and British tourists like to enrich their travel by travelling to more places, to remoter places and to more culturally endorsed tourism destinations. But Japanese tourists prefer a more relaxed travelling method; they travel to fewer places, to less remoter places and to places with a more standardised appeal such as Beijing and Shanghai. On the other hand, tourists from the GCRS have a very different travel itinerary from the rest, they like to visit the places where tourism appeal is standard rather than distinct, travel a shorter distance and tend to visit less places.

Regarding the functional form of the tourism destinations in China, the gateway position of Beijing and Shanghai is confirmed because they are the main destination choices, and major passing-by cities for many of the tourists; also Beijing appeals to general types of tourists; and to a lesser extent, so does Shanghai. However, the position of Guangzhou is dubious because it has no significant appeal to a wide variety of international tourists as do Beijing and Shanghai. Its traffic links with Beijing and Shanghai are very weak, and the tourist dispersion from this city to the whole country is very limited. Other important tourist destinations are categorised into appropriate categories based on the characteristics of the SDIT. This includes regional nodes such as Xi'an and the GSR, major generators such as Yunnan and the Yangtze River, minor generators such as Tibet, Sichuan, and passing through points such as Hebei and Tianjin. Two traffic centres can be identified, one is Beijing and the other is the Middle east centre where tourists' traffic converges.

More importantly, this research also empirically confirmed the importance of cultural related variables to the SDIT. Different cultural related variables, such as cultural proxies (nationalities and places of origin) and cultural differences (expressed by the cultural distance variables), are not equivalent at expressing cross-cultural differences in the SDIT. The variable designed using a dimensional approach at the individual cultural level, proved to be more sensitive than nationality or ethnicity variables, which explore the cross-cultural relationship at a collective level.

Moreover, regarding the effect of geographical distance on the SDIT within a destination, this research has produced a convincing outcome which disagrees with the literature, that although in many research settings geographical distance seemingly couples with the

SDT, this research cannot confirm its significance. It has been proposed that this is because firstly geographical distance is highly likely to add 'noise' into spatial analysis because it can outperform other variables. Secondly the meso scale of this research produces situational specific outcomes, which emphasises that the geographical scale in a spatial research is fundamental to its outcomes. Finally socio-demographic characteristics of tourists, such as age, marital status and gender cannot be confirmed as influential to the SDIT within China, which provide a new insight into literature.

Despite the research findings, the data analyses also contribute to the methodological advancement of the cross-cultural SDT research and the regional tourism phenomenon in China. The following chapter will conclude the whole research, elaborated on its main contributions, and discuss main points of improvement and further research directions.

# 10 CONCLUSIONS

## 10.1 INTRODUCTION

Despite a rich tourism literature, researchers have recognised for a long time that existing tourism studies is fraught with unproven assumptions, ambiguous terminology and contradictory evidence (Gilbert 1990, 1992). This is particularly troubling considering the inconsistency of some of the key tourism concepts, such as tourism, tourism geography and the SDT. Additionally, there are numerous studies that have examined 'cross-cultural differences' in tourist behaviours. There is also plentiful research on the SDT. However, studies that combine the two aspects together, incorporating cultural elements into cross-cultural SDT research, are scant. Most of the cross-cultural studies use cultural proxies such as nationality, ethnicity, race, and language, etc. In addition studies investigating the complementary movement of tourists within a destination, i.e. the patterns, directions and intensity of the SDT at meso scale have not been overtly seen. The paucity of empirical research, specifically into solving tourism problems in China, adds more gravity to this dearth. In summary this research has identified that the literature of the cross-cultural SDT suffers from the following deficiencies, and this has delimited the chief objectives of this research:

(1) a lack of consensus of the concept of cross-cultural SDT;

(2) a lack of holistic studies investigating the integrated movement of international tourists, i.e. the pattern, direction and intensity of tourists' movement;

(3) a lack of empirical studies that investigate the SDT within a meso level, i.e. intra-national level, in a diversified societal context in terms of both tourism supply and demand;

(4) a lack of empirical studies into cross-cultural differences of the SDT, which incorporates cultural elements instead of cultural proxies;

(5) a lack of empirical studies of the tourism phenomenon in China.

The main purposes of this research therefore, are to tackle these issues, and the structure of this thesis was organised accordingly. The scale of this research is at the meso level, and the study was set in China. The focus of this cross-cultural SDT research is on the behavioural and geographical perspective. The interpretations and insight about tourists' behaviour come from a combined analysis including quantitative and qualitative analyses. The whole process of this research abides by the rules of scientific investigation, starting from an identification of research problem(s), to the establishment of a conceptual and theoretical framework and the empirical testing and contribution to the base of knowledge.

A solid conceptual and theoretical framework is the important first step in developing a successful and justified study. The initial task of this research was to review and build up the theoretical and conceptual frameworks of the SDT research. This was done in Chapter 2 and 3. Two branches of knowledge underpin this research. Chapter 2 deals with the first one. The SDT is clarified involving pattern, direction and intensity; and Chapter 3 clarifies the second one – cross-cultural differences in the SDT. Cultural difference is operationalised as 'cultural distance' consisting Confucian value system. After this, Chapter 4 reviews the theoretical approaches used in investigating the SDT. The discrete choice model was verified as an effective method, particularly suitable for explaining the behavioural choice of the SDT. This was conducted in combination with the descriptive approaches used in investigating the patterns and directions of the SDIT within China. Chapter 5 outlines the research context and rationalises the research questions. A preliminary analysis based on secondary statistics was conducted regarding the SDIT within China, and some patterns and regularities were identified. This raised questions like 'how do cultural and geographical distances work together in the SDT?' and 'are the patterns identified due to chance or reality?' Chapter 6 verifies the research paradigm and the methodological design of this research including data collection and analysing strategies, upon which subsequent empirical work was built.

The final task of this research related to the interpretation and discussion of the research findings in relation to the literature review. Descriptive and multivariate techniques were used in Chapter 7 and 8, with a focus on two focal variables - cultural and geographical distance. Chapter 7 discussed cross-national differences in the SDT within China and is exploratory in nature. Based upon this, Chapter 8 focused on a confirmatory investigation of the research questions and the intensity of the SDT. Chapter 9 presented a combined discussion of the research findings of all the principle areas in Chapter 7 and 8, and assessed their significance.

## 10.2 RESEARCH CONTRIBUTIONS

The contributions that this study makes to the existing body of knowledge are threefold – a contribution to the concept and theories of the cross-cultural SDT within a destination country; a contribution to the methodological development of cross-cultural SDT research; and a contribution to the regional tourism phenomenon in China.

### *10.2.1 Reinforcements of the concepts and theories in cross-cultural SDT*

The reinforcement of the conceptual issues concerned with the cross-cultural SDT within a destination country, was based on a systematic view of the tourism phenomenon and the SDT system. There are two areas in the body of knowledge that this research relates and contributes to – cross-cultural and the SDT studies. The SDT was conceptualised as a holistic system involving three basic features of tourists' movement – pattern, direction and intensity; and this research was conducted around these three features. This holistic understand of the SDT system synthesises the individual movement that embrace a range of self-determined spatial activities and experiences and operationalise movement into measurable entities.

The cross-cultural analysis is established upon a real cultural variable – cultural distance, instead of cultural proxies. This variable is constructed by the use of a dimensional approach incorporating Confucian value system and some other cultural bearing elements, which has been justified as forming the cultural framework of cultural comparison between western cultural and Chinese culture.

As discussed in Chapter 9, the research outcome provides empirical evidence to support some of the literature, also challenge some of them. These form the principle areas of the theoretical contributions of this research. Focuses are placed on two important attributes of investigation – cultural and geographical distance. The primary contributions and findings obtained are that:

1. the SDT have been conceptualised as having three features – direction, pattern and intensity;
2. the key patterns and directions of the SDIT within China have been identified;
3. the functional hierarchy of tourism destinations in China have been identified;
4. cultural distance is significant in determining the propensity of the SDIT;
5. cultural proxies (such as nationality and ethnicity) are influential to the SDIT;
6. cultural distance and cultural proxies are not equal in detecting the behavioural differences of tourists, the former is more sensitive than the latter;
7. the geographical distance is not important in the SDIT within China;
8. general trip attributes such as entry points, 2$^{nd}$ places visited, type of travel group; and social economic variables, such as income levels make significant contributions to the SDT. Contrary to this, demographic characteristics such as age, gender and educational level do not seem significance to the SDT.

### *10.2.2 Methodological contributions*

The means of a research development is as important as the actual findings of the research. A research methodology determines if a research is operational and justifies if it is scientific. In this research the methodological contributions are drawn from two respects – the formation of the cultural distance variable in the cross-cultural research and the application of the discrete choice model to investigate the SDT from a behavioural perspective. Traditional methods of conducting cross-cultural research tend to use cultural proxies such as nationality and place or origin. However, the use of these variables and the collective cultural proxies assumes that cultural homogeneity exits within a national or linguistic group, and explicitly expects that individuals within it share uniform characteristics. In this research the cultural distance is used at the individual level in combination with the cultural proxy variables. The research demonstrated that the combined use of different cultural variables helps to detect the more sensitive cultural distance variable in reflecting more accurately cross-cultural differences in tourists' behaviour. The advantage of an individual-level construct is that a specific aspect of culture can be linked within a given homogenous group of people, rather than simply relying on generalised differences attributable to citizenship status, country of origin, and attributed cultural characteristics. On the basis of this clarification, this research takes the advantages of the combined use of cultural variables at both individual and collective levels.

The research methodology integrated both the qualitative and quantitative, and allowed the strength of both approaches to contribute to this research from their particular angles. The use of the logistic regression models proved to be successful and effective in modelling the destination choices of tourists. Theoretically, the model is able to incorporate behavioural factors into model building. The importance of the behavioural aspects of tourism studies has been increasingly realised owning to the recognition of the notion that the spatial pattern of tourists' activities within a tourism system is an ultimate end product of human decisions. However, the emphasis is difficult to be realised because it is difficult to be empirically verified. This use of the logistic regression models makes the shift of research emphasis operational. Both of the novelties of this research have incorporated the behavioural elements. The first is the use of the designed 'cultural distance' variable which has been formed using value dimensions; and the second one relates to the investigation of the propensity instead of direct volume of tourists' travel between origin-destination pairs using the discrete choice model. This enables the research focusing on the investigation of the choice behaviour of tourists instead of the choice outcome of the tourists.

Moreover, the logistic regression model has many methodological advantages. It is less likely to produce estimation errors if the assumptions are not satisfied (Hair *et al.* 1998; Horowitz 1985). It does not require a large volume of data, as some of the other types of techniques do. In summary, the method used in this research may provide a potentially valuable approach to the study of tourists' spatial behaviour in general and the SDT in particular. It gives the power of investigating the effects of behavioural variables and make robust predictions about tourists' spatial choices.

### *10.2.3 Practical implications*

The final contribution relates to the practical purposes of this research – the benefit to the tourism industry. Studies on Chinese tourist travel behaviour are scant, especially those published in English journals. From a theoretical perspective, the locational choice of this empirical research in China is an advantage. It is different from much SDT research in that China is renowned for its vast tourism resources and diversified tourist arrivals. Though this setting added some difficulties in the spatial analysis, the complexity makes a spatial analysis more representative. Practically, it provides a useful input into tourism geography and marketing, which can be of considerable value in the assessment of tourism planning and decision-making, most notably to Chinese marketers.

Maintenance of a strong tourism industry growth in China depends upon the four major generators – American, Asian and Europe as well as the ethnic Chinese market. The study subjects selected were from these four markets. This study enables tourism marketers to be more knowledgeable of the cultural characteristics of the international tourists as well as the characteristics of the different destinations. The different travel patterns of these international tourists within China highlight the need for sound marketing and destination development strategies. The results suggest that tourists from Americas, the UK and Japan are more likely to be receptive to different marketing and promoting strategies, because they use packaged tours more. The focus might still be put on the cultural appeal of China, because these tourists are more attracted to this point.

Contrary to American, British and Japanese tourists, tourists from the GCRs might be more likely to be responsive to other types marketing strategies such as segmentation strategies, or promotions of travel means, such as transport or accommodation instead of the package tour. This is because the research tells us that the preference and the profiles of these tourists are different from the rest. They prefer to travel with friends or relatives and they are less attracted to tourism attractions than the former. Therefore convenient infrastructure and tourism facilities may be more appeal to them.

From a tourism destination perspective, this research provides information on the potential impact of various cultural and social economic factors on the spatial behaviour of tourists within a destination country. Based upon these findings, the destination management authorities could learn that Beijing is a 'culture-free' destination, its attractiveness appeals to general types of tourists, but Shanghai and Guangzhou attract specific types of tourists. Therefore, the recommended marketing strategy should be different for the three main destinations, and refer to broader tourism regions based upon the types of tourists they attract.

It is also suggested that the interior regions should learn that they are not necessarily made less appeals to tourists by their remoter locations, but that their attractiveness to tourists suitably depends upon their marketing efforts. Tourists travel within China is not necessarily affected by their perceived distance, but much does rely on marketing arrangements and socio-economic factors. Therefore, an improved marketing strategy for the less appealing tourism regions should emphasises on making proper arrangements for tourists and the appropriateness of tourism destinations, but not on the distance effect of these destinations.

In summary, while this research has been focused in China, it illustrates the importance of cross-cultural SDT research as an important element for developing marketing strategies for the tourism industry. Chinese tourism marketers need to balance and develop a grand marketing policy to incorporate different public forces. When marketing the whole of China to different tourist markets, it is necessary to consider the level of importance of certain factors to tourists from varied origins. On the other hand, for marketers in different tourism destinations, they have to identify their special appeal in order to make the most of their locational advantages.

## 10.3 LIMITATIONS AND RESEARCH IMPROVEMENT

Despite the contributions that this research makes and its implications, it is not without its limitations. Recommendations for improving this research methodology can be taken from the following points. The first one is the theoretical limitations which are reflected in the research design. The study of the SDT is about the direction, pattern and intensity of tourists' movement within the whole country. However, in the final logistic regression models, the study of the SDT was reduced into only three main destination choices and one choice made from the rest of the destinations. In reality, it is rarely the case that the phenomena under study is that simple and can be represented by only four choices. For example, the three main destinations are all gateway cities, but tourists might be attracted to destinations in the 2nd tier, such as Xi'an, or 3rd tier, such as Tibet. The analysis summarised these 2nd and 3rd tier destinatiosn into one category – Others, therefore, the modelling method is actually focued on explaining the choice of important versus unimportant destinations based on their geographical locations, but not on the choice among a variety of destinations based on their tourist appeals. However interpreting the four choices is already very complicated; models incorporating more than four choices would be even more biologically difficult to interpret.

The design of the independent variables might bring subjectivity into places, such as the formation of the cultural distance variables and the use of cognitive distance variables in measuring the geographical distance variable. A possible instance might be that they added difficulties in accurately expressing the real cultural differences and the actual geographical distance (Ankomah and Crompton 1992).

Limitations also stem from the research methodology. Although a carefully designed sampling method can help to minimise these problems, no survey instrument can avoid all errors or unintended biases. This research used a convenient multi-stage stratified and geographical clustered sampling method, although this research method has many advantages (refer to Chapter 6), one major disadvantage is that the randomness of the sample is reduced. However, considering a real random sample is difficult to obtain under many research constraints, this sampling method is appropriate under the constraints of this research.

Although the total number of usable questionnaires is not particularly large, it is enough for different types of cross-group comparisons. However, one area in this study that could be improved is the limited sample size. Although the analyses above show strong regularities of tourists' travel preference, when analyses regarding cross-cultural groups were conducted, the small size of some groups has hindered a more lucid explanation of the travel patterns of tourists in some respects.

For example, at the first level of data analysis, chi-square tests were frequently used. The advantage of this technique is its ability to analysis categorical data and its robust and easy application. However, one requirement of this technique in achieving a more reliable outcome is that less than 5 per cent of the expected frequencies be in each group for comparison. Though studies suggested that while this is ideal, this condition can be relaxed (Everitt 1977; Norusis 1993), some of the instances in Chapter 7 could not meet this requirement. Some of the attributes have been regrouped to reduce this problem.

Also because of the sample size, MNL were not used, three binary logistic models were used instead because the former is more complicated and needs a larger sample size to model more than two choices of dependent variable. The use of three binary versus one MNL are advantageous to this research in that the former uses individual level data, with individuals' characteristics as covariates, allows the binominal model to be estimated on the whole sample, and yields predictions for market segment without requiring large sample numbers in each segment as multinomial modelling does (Morley 1994a: 783). It is hoped that the findings and methodologies of this study will serve as a starting point for future investigations of similar research issues.

All the multivariate techniques cannot avoid underlying assumptions, both statistical and conceptual. The logistic regression model is not exempt, though one of the biggest advantages of the logistic regression is that it does not strictly rely on some of the regular assumptions that other techniques do, such as a normal distribution assumption (Hair 1998: 276). One unique assumption of the logistic regression model is the IIA assumption. Under this assumption, a change in the attributes of one alternative changes the probabilities of the other alternatives proportionately (Stynes and Peterson 1984; Train 1998). Although this study has made every effort to avoid the failure of the IIA assumption, such as using a carefully defined truly independent alternatives in a dependent variable (Stynes and Peterson 1984), and the use of binary logistic regression model instead of MNL model because the dependent variable contains only dichotomous alternatives, it is considered that in reality this assumption cannot be completely satisfied.

The logistic regression models also rely on some other assumptions such as the "random utility maximisation" and the "linear function of the utility" which are also the theoretical groundings of this technique. The "random utility maximization" concept has been used to provide behavioural and theoretical bases for modelling tourist spatial interaction (Ben-Akiva and Lerman 1997; Husbands 1983; Kitamura 1984). It refers to how tourists have equal chances to visit any of the alternative destinations. They can compare all the alternative destinations of their trips on the basis of the utilities they have and to visit the respective region which attach the highest level of utility. With regard to the form of the logistic regression model, all tourists in the population have the same utility function, which is linear in attributes or linear transformations of the attributes (Richards 1979). Also the assumption of the error terms in model building is an essential one. It is assumed that the error is independently and identically distributed (IID) over the population. However in reality all these assumptions are not necessarily true that tourists have equal chances and all the attributes have a similar importance in determining the probability of tourists' destination choice.

Other small assumptions that need to be stressed relate to the experimental design of the study. For instance, the individual tourists are assumed to be perfectly transitive, rational and consistent in their choices. They must make a choice, and only one choice from the choice set. They only purposely visit one destination at a time in their trips, and are assumed to possess full or equal information about the attributes (Louviere 1988: 96). These assumptions, not surprisingly, are difficulty to hold in a real situation. For instance, it is very likely that tourists may not visit the same place on repeated occasions, even when they are faced with the exactly same choice set and same conditions.

As a result, this study holds the notion that although assumptions restrict the conditions of a theory's development, scientific assumptions are inevitable because they possibly make an idealised standardisation of conditions of a theory development. There are also advantages in making assumptions. Parsimonious assumptions do little harms to theory development but save a researcher's time; and realistic assumptions might simply be axiomization; and are themselves parts of theories. They facilitate the explanation of the research and enhance a theory's generality (Mayer 1995: 70)

## 10.4 FURTHER RESEARCH RECOMMENDATIONS

Making a contribution to the body of knowledge is one of the ultimate goals of this research. One implicit contribution of this study, as well as similar social science research, is that they can generate more questions than the questions they answer. In this research these questions relate to choice characteristics of tourists for destinations other than the four destinations in the choice set, and similarly how tourists from origins other than the four chosen, would react in these similar situations? The more significant role of social and economic variables than demographic variables in the SDIT is quite unexpected which might need some further examination. Another question is that can geographical distance have the same performance if it is set in a different research context. All these queries open new doors into new areas of social inquires, into which potential future research can advance. For future work, a theoretical research addressing these questions is required particularly in the following directions.

Firstly, clearer broader selections of tourist origins and their destination choices are needed to validate the research findings. That is to investigate whether cross-cultural differences in the SDIT from the four selected places of origin would hold true for a greater variety of origins and destinations. It would be useful to confirm the general results of the importance of cultural distance and geographical distance in different research situations.

Secondly, the research was scientifically grounded, especially in its use of the discrete choice models and cultural distance construct; therefore its methodology may be of interest to others who want to research into different choice situations – such as the SDT at macro or micro levels. It would also be of interest to identify the constraints of the SDT, which were not discussed in this research. More constraints or the use of different ways to operationalise these key constraints, such as geographical distance and attractiveness are recommended.

Finally, with regard to the data collection and data analysis methods, some improvements might be expected. As this research has used a convenient sampling method, it was confined by the sample size which leads to the adjustment of the research techniques. A more restrict random sampling method, destination or en-route sampling method could be considered in a similar situations. On the condition that a larger sample size can be obtained, a MNL model is recommend to replicate the research process to see if similar conclusions would be drawn again. Using the MNL method all the destination choices can be analysed together and the propensity of the choices compared as a whole, integrating all the trip and behavioural characteristics of tourists.

It was considered that the research objectives were satisfactorily achieved. Major contributions have been made into the cross-cultural SDT literature. Practical implications for the tourism industry in China can also be drawn from it. Most importantly, this research raises new questions. As this chapter brings conclusion to the whole research it is realised that the completion of a research is not an end of building up the known but a start of exploring the unknown. Clearly, more work needs to be done in advancing the knowledge base and understanding more of the intricate nature of tourist behaviour.

# REFERENCES


Agarwal, D. and C. Schorling (1996). Market Share Forecasting: An Empirical Comparison of Artificial Neural Networks and Multinomial Logit Model. *Journal of Retailing*. 72 (4): 383-407.

Agarwal, Vinod B. and Gilbert R. Yochum (1999). Tourist Spending and Race of Visitors. *Journal of Travel Research*. 38 (November): 173-76.

Agresti, A. and B. Finlay (1986). *Statistical Methods for the Social Sciences* (2nd ed). San Francisco: Dellen.

Ahmed, Z. U. and F. B. Krohn (1992). Understanding the Unique Consumer Behaviour of Japanese Tourists. *Journal of Travel & Tourism Marketing*. 1 (3): 73-86.

Albers-Miller, Nancy D. (1996). Designing Cross-Cultural Advertising Research: A Closer Look at Paired Comparisons. *International Marketing Review*. 13 (5): 59-75.

Aldskogius, H. (1977). A Conceptual Framework and a Swedish Case Study of Recreational Behaviour of Recreational Behaviour and Environmental Cognition. *Economic Geography*. 53: 163-83.

Aldskogius, Hans (1974). "*Recreational Day Trip Patterns in Urban Regions: Some Thoughts on the Relationship Between Information and Activity Space*," in Working Conference of the IGU Working Group, Geography of Tourism and Recreation, J. Matznetter (Ed.) Vol. Heft 17. Salzburg: Frankfurter Wirtschafts - und Sozialgeographische Schriften.

Alzua, Aurkene, Joseph T. O'Leary, and Alastair M. Morrison (1998). Cultural and Heritage Tourism: Identifying Niches for International Travellers. *Journal of Tourism Studies*. 9 (2): 2-13.

Anas, Alex (1983). Discrete Choice Theory, Information Theory and the Multinomial Logit and Gravity Models. *Transportation Researches B*. 17B (1): 13-23.

Anderson, J. (1971). Space-Time Budgets and Activity Studies in Urban Geography and Planning. *Environment and Planning*. 3: 353-68.

Ankomah, P. K., J. L. Crompton, and D. Baker (1996). Influence of Cognitive Distance in Vacation Choice. *Annals of Tourism Research*. 23 (1): 138-50.

Ankomah, Paul K. and John L. Crompton (1992). Tourism Cognitive Distance: A Set of Research Propositions. *Annals of Tourism Research*. 19: 323-42.

Ankomah, P. K., J. L. Crompton, and D. Baker (1996). Influence of Cognitive Distance in Vacation Choice. *Annals of Tourism Research*. 23 (1): 138-50.

Anon (1993). *China Tourism* News, 17 July 1993, Beijing.

Applbaum, Kalman and Ingrid Jordt (1996). Notes toward an Application of McCracken's "Cultural Categories" for Cross-Cultural Consumer Research. *Journal of Consumer Research*. 23 (December): 204-18.

Appleton, I. Ed. (1974). *Leisure Research and Policy*. Edinburgh: Scottish Academic Press.

Archer, B. and S. Shea (1973). "Gravity Models and Tourist Research," in Tourist Research Paper TUR 2. Bangor: Economic Research Unit.

Archer, Brian (1976). "*Demand Forecasting in Tourism*," in Bangor Occasional Papers in Economics, Jack Revell, Ed. Bangor: University of Wales Press.

Archer, Brian H. (1980). Forecasting Demand - Quantitative and Intuitive Techniques. *International Journal of Tourism Management*. 1 (1): 5-12.

Armstrong, C. W. G. (1972). International Tourism: Coming or Going - The Methodological Problems of Forecasting. *Futures*. 4 (2): 115-25.

Arnold, S. J., V. Roth, and D. J. Tigert (1980). Conditional Logit Versus MDA in the Prediction of Store Choice. *Advances in Consumer Research*. 20: 665-70.

Artus, J. R. (1972a). An Econometric Analysis of International Travel. *Annals of Tourism Research*. 18: 663-65.

Artus, J. R. (1972b). An Econometric Analysis of International Travel. *International Monetary Fund Staff Papers*. 19: 579-614.

Ashworth, G. (1989). Urban Tourism: An Imbalance in Attention. In P.Cooper, C., editor, *Progress in Tourism, Recreation and Hospitality Management*. London: Belhaven.

Ashworth, G. J. (1992). Planning for Sustainable Tourism: A Review Article. *Town and Planning Review,* 63(3): 325-29.

Ashworth, G. J. and J. E. Turnbridge. (1990). *The Tourist-Historic City*. London: Belhaven.

Ashworth, G. J. and H. Voogd. (1988). Marketing the City: Concepts, Processes and Dutch Applications. *Town Planning Review*, 59(1): 65-80.

Ashworth, G. J. and H. Voogd. (1990a). *Selling the City*. London: Belhaven.

Ashworth, G. J. and H. Voogd. (1990b). Can Places be Sold for Tourism? In Ashworth, G. J. & B. Goodall, editors, *Marketing Tourism Places*. London: Routledge, pp. 1-16.

Ashworth, G. J. and H. Voogd. (1994). Marketing of Tourism Places: What are We Doing? In Uysal, M., editor, *Global Tourist Behaviour*. New York: International Press.

Assael, H. (1992). *Consumer Behaviour and Marketing Action*. Boston: PWS-KENT.

Beaman, J. (1974). Distance and the 'Reaction' to Distance as a Function of Distance. *Journal of Leisure Research*. 6 (3).

Bailey, A. C. (1992). "A Yen for Travel," in the Annual Review of Travel: American Express.

Bailey, Kenneth D. (1982). *Methods of Social Research* (2nd ed). London: Collier Macmillan Publishers.

Baker, Kenneth G., George C. Jr. Hozier, and Robert D. Rogers (1994). Marketing Research Theory and Methodology and the Tourism Industry: A Nontechnical Discussion. *Journal of Travel Research*. 32 (3): 3-7.

Bakkalsalihoglu, I. (1987). "*Analysis of Demand for International Tourism in Northern Mediterranean Countries*," Ph.D. dissertation, Northern Illinois University.

Baloglu, Seyhmus and Muzaffer Uysal (1996). Market Segments of Push and Pull Motivations: A Canonical Correlation Approach. *International Journal of Contemporary Hospitality Management*. 8 (3): 32-38.

Barry, M. (1969). Cross-Cultural Research with Matched Pair of Societies. *Journal of Social Psychology*. 79: 25-33.

Barry, Kevin and John O'Hagan (1972). An Econometric Study of British Tourist Expenditure in Ireland. *Economic and Social Review*. 3 (2): 143-61.

Bartlett, F. C. (1923). *Psychology and Primitive Culture*. Cambridge: Cambridge University Press.

Bauman, Z. (1996). "From Pilgrim to Tourist - Or a Short History of Identity," in *Questions of Cultural Identity*, s. Hall and P. DuGay, Eds. London: Sage Publications Ltd.

Baxter, M. J. (1978). Long Distance Day Tripping: A Comment. *Journal of Transport Economics and Policy*. 12: 209-10.

Baxter, Mike and Gordon Ewing (1981). Models of Recreational Trip Distribution. *Regional Studies*. 15 (5): 327-44.

Beaman, J., Y. Kim, and S. Smith (1979). The Effect of Recreation Supply on Participation. *Leisure Sciences*. 2 (1): 71-87.

Bell, Michael (1977). The Spatial Distribution of Second Homes: A Modified Gravity Model. *Journal of Leisure Research*. 9 (3): 225-33.

Ben-Akiva, M. and Steven R. Lerman (1997). *Discrete Choice Analysis: Theory and Application to Travel Demand. Cambridge*, Massachusetts; London, England: The MIT Press.

Bendel, R. B. and A. A. Afifi. (1977). Comparison of Stopping Rules in Forward Regression. *Journal of the American Statistical Association*. 72: 43-46.

Bennett, David (1998), *Multicultural States and Identity*. Routledge.

Benthien, Bruno (1984). Recreational Geography in the German Democratic Republic. *GeoJournal*. 9 (1): 59-63.

Bergstrom, John C. and H. Ken Cordell (1991). An Analysis of the Demand for and Value of Outdoor Recreation in the United States. *Journal of Leisure Research*. 23 (1): 67-86.

Berry, B.J.L. (1964). Approaches to Regional Analysis: A Synthesis. *Annals of the Association of American Geographers*. 54: 2-12.

Berry, John W. (1991). Ecological and Cultural Factors in Spatial Perceptual Development. *Canadian Journal of Behavioural Science*. 3: 324-36.

Berry, John W. (1971). Ecological and Cultural Factors in Spatial Perceptual Development. *Canadian Journal of Behavioural Science*. 3: 324-36.

Berry, John W. (1975). An Ecological Approach to Cross-Cultural Psychology. *Nederlands Tijdschrift voor de Psychologie*. 30: 51-84.

Berry, John W. (1976). *Human Ecology and Cognitive Style: Comparative Studies in Cultural and Psychological Adoption*. Beverly Hills: California: Sage.

Berry, John W. (1980). "Introduction to Methodology," in *Handbook of Cross-Cultural Psychology*, Harry C. Triandis and John W. Berry, Eds. Vol. 2. Boston, MA: Allyn and Bacon, Inc.

Berting, Jan (1987). "The Significance of Different Types of Cultural Boundaries in International Comparative and Cooperative Research in the Social Sciences," in *3. Language and Culture in Cross-National Research: Doing Cross-National Research (Cross-National Research Papers).* Linda Hantrais and Steen Mangen, Eds. Birmingham: Aston Modern Languages Club, Aston University.

Bhat, Vasanthakumar N. (1995). A Multivariate Analysis of Airline Flight Delays. *International Journal of Quality & Reliability Management.* 12 (2): 54-9.

Bian, Jie (1992). "Trends of Tourism in China," in *Spatial Implications of Tourism,* Conny A. M. Fleischer-van Roàjen, Ed.

Bird, James (1989). *The Changing Worlds of Geography - A Critical Guide to Concepts and Methods.* Oxford. Clarendon.

Blackwell, John (1970). Tourist Traffic and the Demand for Accommodation: Some Projections. *Economic and Social Review.* 1 (3): 323-43.

Blau, J. R. (1989). *The Shape of Culture: A Study of Contemporary Cultural Patterns in the United States.* New York: Cambridge University Press.

Bocher, S. (1982). *Cultures in Contacts: Studies in Cross-Cultural Interaction.* Oxford; New York: Pergamon Press.

Boissevain, J. and P. Inglott (1979), "Tourism in Malta," in *Tourism: Passport to Development?,* E. De Kadt, Ed. Oxford: UK: Oxford University Press.

Bond, M. E. and J. R. Ladman (1972). International Tourism and Economic Development: A Special Case for Latin America. *Mississippi Valley Journal of Business and Economics.* VIII (1, Fall): 43-55.

Bond, D., B. Cohen, and G. Schachter (1977). The Spatial Distribution of Tourism Demand and Exchange Rate Variation: OECD European Countries. *Revue de Tourisme.* 32: 13-17.

Boniface, Brian G. and Chris Cooper (1994). *The Geography of Travel & Tourism.* London: Butterworth-Heinemann.

Boniface, Priscilla (1998). "Tourism and Cultures: Consensus in the Making?," in *Tourism and Culture Conflicts,* M. Robinson and Priscilla Boniface, Eds.: CABI Publishing.

Box, G. E. P. and P. W. Tidwell. (1962). Transformation of the Independent Variables. *Technometrics.* 4: 531-50.

Brewer, J. D. (1984). Tourism and Ethnic Stereotypes: Variation in a Mexican Town. *Annals of Tourism Research.* 11 (3): 487-501.

Brewer, J. and A. Hunter (1989). *Multimethod Research*: A Synthesis of Styles. Newbury Park: CA: Saga Publications.

Briggs, R. Ed. (1973). *Urban Cognitive Distance.* Chicago: Aldine.

Brislin, Richard. W. (1976). *Translation, Applications and Research.* New York: Wiley.

Brislin, Richard W. (1993). *Understanding Culture's Influence on Behavior.* Fort Worth TX: Harcourt Brace College Publishers.

Britton, S. G. (1982). The Political Economy of Tourism in the Third World. *Annals of Tourism Research.* 9 (3): 331-58.

Britton, S. (1991). Tourism, Capital, and Place: Towards a Critical Geography of Tourism. *Environment and Planning D: Society and Space*, 9: 451-78.

Brown, R. M. (1935). The Business of Recreation. *Geographical Review*. 25: 467-75.

Brown, M. A. and M. J. Broadway (1981). The Cognitive Maps of Adolescents: Confusion about Inter-town Distances. *Professional Geographer*. 33 (3): 315-25.

Bruner, J. S. (1957). On Perceptual Readiness. *Psychological Review*. 64: 123-52.

Bryman, A. (1984). The Debate About Quantitative and Qualitative Research: A Question of Method or Epistemology? *The British Journal of Sociology*. 35 (1): 75-92.

Bull, A. (1991). *The Economics of Travel and Tourism* (2nd ed.). Melbourne, Australia: Pitman.

Burger, C. J. S. C., M. Dohnal, M. Kathrada, and R. Law (2001). A practitioners Guide to Time-Series Methods for Tourism Demand Forecasting - A Case Study of Durban, South Africa. *Tourism Management*. 22: 403-09.

Burkart, A. J. and S. Medlik (1974). *Tourism: Past, Present and Future*. London: Heinemann.

Business Korea (1991). The Way of Korean Travelling, Koreans Are So Strange? *Business Korea*. 9 (2): 29.

Butler, R. (1980). The Concept of a Tourist Area Cycle of Evolution: Implications for Management of Resources. *Canadian Geographer*. 24: 5-12.

Butler, R. W. (1990). Alternative Tourism: Pious Hope or Trojan Horse. *Journal of Travel Research*, 28(3): 40-5.

Butler, R. W. (1991). Tourism, Environment, and Sustainable Development. *Environmental Conservations*, 18(3): 201-9.

Butler, R. W. (1992). "Alternative Tourism: The Thin Edge of the Wedge". In Smith, V. L. & W. R. Eadington, editors, *Tourism Alternatives: Potentials and Problems in the Development of Tourism*. Philadelphia: University of Pennsylvania Press, pp. 31-46.

Butler, R. W. and T. Hinch, editors. (1996). *Tourism and Indigenous Peoples*. London: International Thomson Publishing.

Buter, Richard W. and Baodi Mao (1995). "Tourism Between Quasi-states: International, Domestic or What?," in *Change in Tourism: People, Places, Processes*, Richard Butler and Douglas Pearce, Eds.: Routledge.

Buter, R. W., C. M. Hall, and J. M. Jenkins, editors. (1998). *Tourism and Recreation in Rural Areas*. Chichester: Wiley.

CAAC (2003) Civil Aviation Administration of China: www.caac.gov.cn/tjxx/

Cadwallader, M. (1981). Towards a Cognitive Gravity Model: The Case of Consumer Spatial Behavior. *Regional Studies*. 15 (4): 275-84.

Cai, Liping A., Alastair Morrison, Carl Braunlich, and Joseph O'Leary (1996). Analysing the U.S. Pleasure Travelers to China/Hong Kong: A Classification Model. *Journal of Hospitality and Leisure Marketing*. 4 (2): 49-61.

Calais, S. S. and J. B. Kirkpatrick. (1986). The Impact of Trampling on the Natural Ecosystems of the Cradle Mt. Lake St. Claire National Park. *Australian Geographer*, 17(6-15).

Calantone, Roger J., C. Anthony Di Benedetto, and David Bojanic (1987). A Comprehensive Review of the Tourism Forecasting Literature. *Journal of Travel Research*. Fall: 28-39.

Calantone, Roger J., C. Anthony Di Benedetto, and David C. Bojanic (1988). Multimethod Forecasts for Tourism Analysis. *Annals of Tourism Research*. 15: 387-406.

Calantone, Roger, C. di Benedetto, A. Hakam, and D. Bojanic (1989). Multiple Multinational Tourism Positioning Using Correspondence Analysis. *Journal of Travel Research*. 28 (2): 25-32.

Calantone, Roger and J. A. Mazanec (1991). Marketing Management and Tourism. *Annals of Tourism Research*. 18 (1): 101-19.

Callahan, Robey (1998). Ethnic Politics and Tourism: A British Case Study. *Annals of Tourism Research*. 25 (4): 818-36.

Campbell, Colin K. (1967). *"An Approach to Research in Recreational Geography,"*: Dept. of Geography, University of British Columbia.

Canter, D. (1975). *The Psychology of Place*. London: The Architectural Press.

Carlson, A. W. (1978). The Spatial Behaviour Involved in Honeymoons: the Case of Two Areas in Wisconsin and North Dakota. *Journal of Popular Culture*, 11: 977-88.

Carmichael, Barbara (1992). "Using Conjoint Modelling to Measure Tourist Images and Analyses Ski Resort Choice," in *Choice and Demand in Tourism*, Peter Johnson and Barry Thomas, Eds. London, New York: Mansell Publishing Limited.

Carr, Deborah S. and Daniel R. Williams (1993). Understanding the Role of Ethnicity in Outdoor Recreation Experience. *Journal of Leisure Research*. 25 (1): 22-38.

Cater, E. A. (1993). Ecotourism in the Third World: Problems for Sustainable Development. *Tourism Management*, 14(2): 85-90.

Cater, E. A. and G. Longman, editors. (1994). *Ecotourism: A Sustainable Option?* Chichester: Wiley.

Cesario, F. J. (1973). A Generalized Trip Distribution Model. *Journal of Regional Science*. 13 (2): 233-47.

Cesario, Frank J. and Jack L. Knetsch (1970). Time Bias in Recreation Benefit Estimates. *Water Resources Research*. 6 (June): 700-04.

Cha, S., K. W. McCleary, and M. Uysal (1995). Travel Motivations of Japanese Overseas Travellers: A Factor-Cluster Segmentation Approach. *Journal of Travel Research*. 34 (1): 33-39.

Chadee, Doren D. and Justine Cutler (1996). Insights into International Travel by Students. *Journal of Travel Research*. 35 (2): 75-81.

Chadwick, R. (1994). "Concepts, Definitions and Measures Used in Travel and Tourism Research," in *Travel, Tourism and Hospitality Research: A Handbook for Managers and Researchers*, J. R. Brent Ritchie and C. Goeldner, Eds. Vol. 2. New York: Wiley.

Chang, T. C., S. Milne, D. Fallon, and C. Pohlmann (1996). Urban Heritage Tourism: the Global-Local Nexus. *Annals of Tourism Research*, 23: 1-19.

Chen, Joseph S. and Dogan Gursoy (2001). An Investigation of Tourists' Destination Loyalty and Preferences. *International Journal of Contemporary Hospitality Management.* 13 (2): 79-86.

Child, Elizbeth (1983). Play and Culture: A Study of English and Asian Children. *Leisure Studies.* 2: 169-86.

China Ministry of Public Security

Cho, Sun-Young (1991). The Ugly Koreans Are Coming. *Business Korea.* 9 (2): 25-31.

Choi, Tat Y. and Raymond Chu (2000). Levels of Satisfaction among Asian and Western Travellers. *International Journal of Quality & Reliability Management.* 17 (2): 116-31.

Choy, Dexter J. L. (1992). Life Cycle Models for Pacific Island Destinations. *Journal of Travel Research.* Winter: 26-31.

Christaller, Walter (1963). Some Considerations of Tourism Location in Europe: The Peripheral Regions - Underdeveloped Countries - Recreation Areas. *Regional Science Association.* Papers XII (Lund Congress): 95-105.

Clark, William A. V. and Karen L. Avery (1978). "Patterns of Migration: A Macroanalytic Case Study," in *Geography and the Urban Environment: Progress in Research and Applications*, D. T. Herbert and R. J. Johnston, Eds. Vol. 1: John Wiley & Sons.

Clawson, M. and J. Knetsch (1966). *Economics of Outdoor Recreation.* Baltimore: Johns Hopkins Press.

Clift, S. and S. J. Page, editors. (1996). *Health and the International Tourist.* London: Routledge.

CNTA (1999). *The Yearbook of China Tourism Statistics, 1999.* Beijing, China: National Tourism Administration of the People's Republic of China.

CNTA (2001a), *Tourism Development 'Fifteen-Year' Planning and Prospects for Year 2015 and 2020: General Subjects.* Beijing, China: National Tourism Administration of the People's Republic of China.

CNTA (2001b), *Tourism Development 'Fifteen-Year' Planning and Prospects for Year 2015 and 2020: Special Subjects.* Beijing, China: National Tourism Administration of the People's Republic of China.

CNTA (2001c). *The Yearbook of China Tourism Statistics, 2001.* Beijing, China: National Tourism Administration of the People's Republic of China.

CNTA (2003a). CNTA website: http://www.cnta.com/.

CNTA (2003b). *CNTA Tourist Map.* Beijing.

CNTA and CNSB (2001). *Rujing Luyouzhe Chouyang Diaocha (Inbound Tourist Survey). 2001.* Beijing, China: National Tourism Administration of the People's Republic of China; China National Statistic Bureau; China Tourism Press.

Cohen, Erik (1988). Traditions in the Qualitative Sociology of Tourism. *Annals of Tourism Research.* 15: 29-46.

Cole, Michael and Sylvia Scribner (1974). *Culture and Thought: A Psychological Introduction.* John Wiley & Sons, Inc.

Cole, D. N., M. E. Petersen, and R. C. Lucas. (1987). Managing Wilderness Recreation Use: Common Problems and Potential Solutions, *USDA Forest Service General Technical Report INT-230*: Utah: Intermountain Forest and Range Experiment Station.

Colenutt, R. J. (1970). *"An Investigation into the Factors Affecting the Pattern of Trip Generation and Route Choice of Day Visitors to the Countryside,"* Ph.D., Bristol University.

Colenutt, R. J. (1969). Modelling Travel Patterns of Day Visitors to the Countryside. *Area*. 2: 43-47.

Collins, Darrian and Clem Tisdell (2000). Changing Travel Patterns with Age: Australian Evidence and the Need to Modify Current Theories. *Australian Journal of Hospitality Management*. 7 (1): 15-25.

Cook, R. L. and K. W. McCleary (1983). Redefining Vacation Distances in Consumer Minds. *Journal of Travel Research*. 21: 31-34.

Cooke, K. (1982). Guidelines for Socially Appropriate Tourism Development in British Columbia. *Journal of Travel Research*, 21(1): 22-8.

Cooper, C. P. (1981). Spatial and Temporal Patterns of Tourist Behaviour. *Regional Studies*. 15 (5): 359-71.

Cooper, C. P. (1987). The Changing Administration of Tourism in Britain. *Area*, 19(3): 249-53.

Cooper, C. P. and S. Jackson (1989). Destination Life Cycle, the Island of Man Case Study. *Annals of Tourism Research*. 16 (3): 377-98.

Cooper, Chris (1992). "The Life Cycle Concept and Tourism," in *Choice and Demand in Tourism*, Peter Johnson and Barry Thomas, Eds. London, New York: Mansell Publishing Limited.

Coppock, J. T., editor. (1977a). *Second Homes: Curse or Blessing?* Oxford: Pergamon Press.

Coppock, J. T. (1977b). Tourism as a Tool for Regional Development. In Duffield, B. S., editor, *Tourism: A Tool for Regional Development*. Edinburgh: Tourism and Recreation Research Unit, University of Edinburgh.

Coppock, J. T. and B. S. Duffield. (1975). *Recreation in the Countryside: A Spatial Analysis*. London: Macmillan.

Corsi, T. M. and M. E. Harvey. (1979). Changes in Vacation Travel in Response to Motor Fuel Shortages and Higher Prices. *Journal of Travel Research*, 17(4): 6-11.

Costanza, M. C. and A. A. Afifi (1979). Comparison of Stopping Rules in Forward Stepwise Discriminant Analysis. *Journal of the American Statistical Association*. 74: 777-85.

Court, D. (1991). "*Curricular Integration and Teachers' Personal Practical Knowledge*," in FOCI Occasional Paper Series Number 5: British Columbia.

Cox, Kevin R. (1972). *Man, Location, and Behavior: An Introduction to Human Geography*: John Wiley & Sons, Inc.

Crampton, L. J. (1966). Gravitational Model Approach to Travel Market Analysis, a paper re-work from 'A New Technique to Analysis Tourist Markets'. *Journal of Marketing*. 30 (April).

Crask, M.R. (1981). Segmenting the Vacationer Market: Identifying the Vacation Preferences, Demographics and Magazine Readership of Each Group. *Journal of Travel Research*. 20 (1): 29-34.

Crompton, J. L. and S. L. Richardson (1986). The Tourism Connection Where Public and Private leisure Services merge. *Parks and Recreation*. October: 38-44, 67.

Crompton, John L. (1979). Motivations for Pleasure Vacation. *Annals of Tourism Research*. 6 (4): 408-24.

Crompton, John L. and Stacey L McKay (1997). Motives of Visitors attending Festival Events. *Annals of Tourism Research*. 24 (2).

Crompton, L. John and K. T. Tan (1973). A Model of Tourism Flow into the Pacific. *Revue de Tourisme (Tourism Review)*. 28 (3): 98-104.

Crouch, Geoffrey I. (1994a). The Study of International Tourism Demand: A Review of Findings. *Journal of Travel Research*. 33 (1): 12-23.

Crouch, Geoffrey I. (1994b). The Study of International Tourism Demand: A Survey of Practice. *Journal of Travel Research*. 32 (4): 41-63.

Crouch, Geoffrey I. and Robin N. Shaw (1992). "International Tourism Demand: A Meta-analytical Integration of Research Findings," in *Choice and Demand in Tourism*, Peter Johnson and Barry Thomas, Eds. London, New York: Mansell Publishing Limited.

Currim, I. S. (1982). Predictive Testing of Consumer Choice Models not Subject to Independence of Irrelevant Alternatives'. *Journal of Marketing Research*. 19 (May): 208-22.

Cushner, K., A. McClelland, and P. Safford (1992). *Human Diversity in Education: An Integrative Approach*. New York: McGraw-Hill.

Cushner, Kenneth and Richard W. Brislin (1996). *Intercultural Interactions: A Practical Guide* (2nd ed.). Thousand Oaks, London, New Delhi: SAGE Publications.

Dace, R. (1995). Japanese Tourism: How a Knowledge of Japanese Buyer Behaviour and Culture can be of Assistance to British Hoteliers in Seeking to Develop This Valuable Market. *Journal of Vacation Marketing*. 1 (3): 281-88.

Dalrymple, Kelvin and Kevin Greenidge (1999). Forecasting Arrivals to Barbados. *Annals of Tourism Research*. 26 (1): 188-218.

Dann, G. (1977). Anomie, Ego-enhancement and Tourism. *Annals of Tourism Research*. 4 (4): 184-94.

Dann, G (1993). "Limitation in the Use of "Nationality" and "Country of Residence" Variables (Chapter 6)." in *Tourism Research: Critiques and Challenges*, D Pearce and R. Butler, Eds. London: Routledge.

Dann, G. (1981). Tourist Motivation: An Appraisal. *Annals of Tourism Research*. 8: 187-219.

Dann, G. and E. Cohen (1991). Sociology and Tourism. *Annals of Tourism Research*. 18: 155-69.

Darnell, Adrian, Peter Johnson, and Barry Thomas (1992). "Modelling Visitor Flows at the Beamish Museum," in *Choice and Demand in Tourism*, Peter Johnson and Barry Thomas, Eds. London, New York: Mansell Publishing Limited.

Davies, E. (1987). Planning in the New Zealand National Parks. *New Zealand Geographer*, 43(2): 73-8.

Dearden, P. (1993). Cultural Aspects of Tourism and Sustainable Development: Tourism and the Hilltribes of Northern Thailand. In Nelson, J. G., R. Butler, & G. Wall, editors, *Tourism and Sustainable*

*Development: Monitoring, Planning and Managing.* Waterloo: Department of Geography: University of Waterloo.

Debbage, Keith G. (1990). Oligopoly and the Resort Cycle in the Bahamas. *Annals of Tourism of Research,* 18(2): 251-68.

Debbage, Keith G. (1991). Spatial Behavior in a Bahamian Resort. *Annals of Tourism Research.* 18: 251-68.

Decrop, Alain (1999). Triangulation in Qualitative Tourism Research. *Tourism Management.* 20: 157-61.

Defert, P. (1967). *Le Taux de Fonction Touristique: Mise au Point et Critique.* Aix-en-Provence: Cahiers du Tourisme, C-13, C. H. E. T.

Deng, Guan Li (1994). *Tourism (Lü You Xüe).* Tianjin: Tianjin People's Press.

Desbarats, J. (1983). Spatial Choice and Constraints on Behaviour. *Annals of the Association of American Geographers.* 73 (3): 340-57.

Deshpande, R. (1983). Paradigms Lost: On Theory and Method in Research in Marketing. *Journal of Marketing.* 47 (Fall): 101-10.

Dharmaratne, Gerard S. (1995). Forecasting Tourist Arrivals in Barbados. *Annals of Tourism Research.* 22 (4): 804-18.

Dilley, R. S. (1986). Tourist Brochures and Tourist Images. *The Canadian Geographer*, 30(1): 59-65.

Dimanche, F. (1994). Cross-Cultural Tourism Marketing Research: An Assessment and Recommendations for Future Studies. *Journal of International Consumer Marketing.* 6 (3/4): 123-34. In M. Uysal (Ed.) *Global Tourist Behaviour* (pp. 23-34). New York; London; Norwood: International Business Press.

Ding, P. and J. J. Pigram. (1995). Environmental Audits: An Emerging Concept for Sustainable Tourism Development. *Journal of Tourism Studies*, 2: 2-10.

Dowling, R. K. (1993). Tourism Planning, People and the Environment in Western Australia. *Journal of Travel Research*, 31(4): 52-58.

Dowling, R. K. (1997). Plans for the Development of Regional Ecotourism: Theory and Practice. In Hall, C. M., J. Jenkins, & G. Kearsley, editors, *Tourism Planning and Policy in Australia and New Zealand: Cases, Issues and Practice.* Sydney: Irwin Publishers.

Downs, James F. and Hermann K. Bleibtreu (1975). "Culture: Man's Ecological Niche," in *Cultural and Social Anthropology: Introductory Readings in Ethnology*, Peter B. Hammond. 2nd ed. New York, London: Macmillan Publishing Co. Inc.

Downs, R. M. (1970). Geographic Space Perception: Past Approaches and Future Prospects. *Progress in Geography.* 2: 65-108.

Doxey, G. (1975). *"A Causation Theory of Visitor-Resident Irritants: Methodology and Research Inferences,"* In: Travel and Tourism Research Association Sixth Annual Conference Proceedings. San Diego, pp. 195-198.

Drenth, P. J. D. and B. Groenendijk (1984). "Work and Organisational Psychology in Cross-Cultural Perspective," in *Handbook of Work and Organisational Psychology*, P. J. D. Drenth and H. Thierry and P. J. Willems and C. J. de Wolff, Eds. New York: Wiley.

Duffield, B. S. (1975). "The Nature of Recreational Travel Space," in *Recreational Economics and Analysis*, G. A. C. Searle, Ed. London: Longman.

Duke, Keith E. (1981). "*Survey of Travel Forecasting Techniques*," in Looking Ahead, 8th Annual Travel Research Seminar. Christchurch, N. Z., San Francisco: PATA.

Durden, G. C. and J. Silberman (1975). The Determinants of Florida Tourism Flows: A Gravity Model Approach. *Review of Regional Studies*. 5: 31-41.

Durvasula, Srinivas, Stephen Lysonski, and J. Craig Andrews (1993). Cross-Cultural Generalizability of a Scale for Profiling Consumers' Decision-Making Styles. *The Journal of Consumer Affairs*. 27 (1): 55-65.

Dybka, Jerry M. (1987). A Look at the American Traveller: The U.S. Pleasure Travel Market Study. *Journal of Travel Research*. XXV (3): 2-4.

Dybka, Jerry (1988). Overseas Travel to Canada: New Research on the Perceptions and Preferences of the Pleasure Travel Market. *Journal of Travel Research*. XXVI (4): 12-15.

Echtner, Charlotte M. and J.R. Brent Ritchie (1993). The Measurement of Destination Image: An Empirical Assessment. *Journal of Travel Research*. Spring: 3-13.

Edgell, David and Richard Seely (1980). "A Multi-Stage Model for the Development of International Tourism Forecasts for States and Regions," in *Tourism Planning and Development Issues*, Donald E. Hawkins and Elwood L. Shafer and James M. Roverlstad, Eds. Washington D. C.: George Washington University.

Ellis, J. B. and C. S. Van Doren (1966). A Comparative Evaluation of Gravity and System Theory Models for Statewide Recreational Traffic Flows. *Journal of Regional Science*. 6 (2): 57-70.

Enoch, Yael (1996). Contents of Tour Packages: A Cross-Cultural Comparison. *Annals of Tourism Research*. 23 (3): 599-616.

Erisman, H. M. (1983). Tourism and Cultural Dependency in the West Indies. *Annals of Tourism Research*. 10: 337-61.

Esman, Marjorie R. (1984). Tourism as Ethnic Preservation: The Cajuns of Louisiana. *Annals of Tourism Research*. 11: 451-67.

Everitt, B. S. (1977). *The Analysis of Contingency Tables*. London: Chapman and Hall.

Ewing, G. O. (1983). "Forecasting Recreation Trip Distribution Behaviour," in Recreation Planning and Management, S. R. Lieber and D. R. Fesenmaier, Eds. London: E. & F. N. Spon.

Ewing, G. O. (1980). Progress and problems in the Development of Recreational Trip Generation and Trip Distribution Models. *Leisure Sciences*. 3 (1): 1-24.

Ewing, Gordon and Wolfgang Haider (1999). "Estimating What Affects Tourist Destination Choice," in *Consumer Behaviour in Travel and Tourism*, Abraham Pizam and Yoel Mansfeld, Eds. New York: The Haworth Hospitality Press.

Eymann, A. and G. Ronning (1997). Microeconometric Models of Tourist Destination Choice. *Regional Science and urban Economics*. 27 (6): 735-61.

Faulkner, Bill and C.R. Goeldner (1998). Progress in Tourism and Hospitality Research. *Journal of Travel Research*. 37 (1): 76-80.

Faulkner, Bill and Chris Ryan (1999). Innovations in Tourism Management Research and Conceptualisation. *Tourism Management.* 20: 3-6.

Fennell, David A. (1996). A Tourist Space-Time Budget in the Shetland Islands. *Annals of Tourism Research.* 23 (4): 811-29.

Ferrario, F. F. (1979a). The Evaluation of Tourist Resources: An Applied Methodology. Part 1. *Journal of Travel Research.* 17 (3): 18-22.

Ferrario, F. F. (1979b). The Evaluation of Tourist Resources: An Applied Methodology. Part 2. *Journal of Travel Research.* 17 (4): 24-30.

Fesenmaier, Danel R. (1985). Modeling Variation in Destination Patronage for Outdoor Recreation Activity. *Journal of Travel Research.* Fall: 17-23.

Fesenmaier, Daniel R. (1990). Theoretical and Methodological Issues in Behavioural Modelling: Introductory Comments. *Leisure Sciences.* 12 (1): 1-7.

Fesenmaier, D. R. and S. R. Lieber. (1987). Outdoor Recreation Expenditure and the Effects of Spatial Structure. *Leisure Sciences*, 9(1): 24-29.

Field, Andy (2000). *Discovering Statistics - Using SPSS for Windows (Advanced Techniques for the Beginner).* London: SAGE Publications.

Flognfeldt, Thor, Jr. (1999). Traveler Geographic Origin and Market Segmentation: The Multi Trips Destination Case. *Journal of Travel & Tourism Marketing.* 8 (1): 111-24.

Font, Antoni Riera (2000). Mass Tourism and the Demand for Protected Natural Areas: A Travel Cost Approach. *Journal of Environmental Economic and Management.* 39: 97-116.

Font, X. and T.E. Ahjem (1999). Searching for a balance in tourism development strategies. *International Journal of Contemporary Hospitality Management.* 11 (23): 73-77.

Forer, P.C. and D. G. Pearce (1984). Spatial Patterns of Package Tourism in New Zealand. *New Zealand Geographer.* 40 (1): 34-43.

Frasquet, Marta, Irene Gil, and Alejandro Mollá (2001). Shopping-centre Selection Modelling: A Segmentation Approach. *The International Review of Retail, Distribution and Consumer Research.* 11 (1): 23-38.

Fretter, A. D. (1993). Place Marketing: A Local Authority Perspective. In Kearns, G. & C. Philo, editors, *Selling Places: The City as Cultural Capital, Past and Present.* Oxford: Pergamon Press.

Freund, J. R. and R. R. Wilson (1974). An Example of a Gravity Model to Estimate Recreation Travel. *Journal of Leisure Research.* 6 (3): 241-56.

Fridgen, Joseph D. (1987). Use of Cognitive Maps to Determine Perceived Tourism Regions. *Leisure Sciences.* 9 (2): 101-17.

Fritz, Richard G., Charles Brandon, and James Xander (1984). Combining Time-Series and Econometric Forecast of Tourism Activity. *Annals of Tourism Research.* 11: 219-29.

Gale, F. and J. M. Jacobs. (1987). Tourists and the National Estate Procedures to Protect Australia's Heritage, *Australian Heritage Commission Special Australian Heritage Publication Series No. 6.* Canberra: Australian Government Publishing Service.

Garland, R. (1990). A Comparison of Three Forms of the Semantic Differential. *Marketing Bulletin.* 1: 19-24.

Garrett, W. (1980). "Review of the Difference Between the Quebec French market and Selected English Markets," in *Caribbean Tourism Markets: Structures and Strategies*, Wilson C., Ed.: Caribbean Tourism Research and Development Centre, Christ Church.

Gartner, William c. (1989). Tourism Image: Attribute Measurement of State Tourism Products Using Multidimensional Scaling Techniques. *Journal of Travel Research.* Fall: 16-20.

Geertz, C. (1973). *The Interpretation of Cultures.* New York: Basic Books.

Genereux, Randy L. , Lawrence M. Ward, and James A. Russell (1983). The Behavioral Component in the Meaning of Places. *Journal of Environmental Psychology.* 3: 43-55.

Gensch, D. H. and W. W. Recker (1979). The Multinomial, Multiattribute Logit Choice Model. *Journal of Marketing Research.* 16 (Feb.): 124-32.

Getz, D. (1981). Tourism and Rural Settlement Policy. *Scottish Geographical Magazine*, 97 (December): 158-68.

Getz, D. (1986). Models in Tourism Planning towards Integration of Theory and Practice. *Tourism Management*, 7(1): 21-32.

Getz, D. and S. J. Page, editors. (1997). *The Business of Rural Tourism: International Perspectives.* London: International Thomson Publishing.

Gilbert, David Clifford (1990), "Conceptual issues in the meaning of tourism," in *Progress in Tourism, Recreation and Hospitality Management*, C. P. Coper, Ed. Vol. 2. London: Belhaven.

Gilbert, David Clifford (1992), "*A Study of the Factors of Consumer Behavior Related to Overseas' Holidays from the UK*," Unpublished PhD thesis, University of Surrey.

Ginier, J. (1974). *Géographie Touristique de la France. SEDES, Paris.*

Glyptis, S. (1991). *Countryside Recreation.* Harlow: Longman.

Golledge, R. G. and R. J. Stimson (1987). *Analytical Behavioural Geography.* London: Croom Helm.

Goodenough, Ward Hunt (1981). *Culture, Language, and Society* (2nd ed.): Menlo Park, Calif. : Benjamin/Cummings Pub. Co.

Gormsen, Erdmann (1988). Tourism in Latin America - Spatial Distribution and Impact on Regional Change. *Applied Geography & Development.* 32: 65-80.

Graburn, Nelson H. and Jafar Jafari (1991). Tourism Social Science. *Annals of Tourism Research.* 18 (1).

Graburn, Nelson H. H. (1983). The Anthropology of Tourism. *Annals of Tourism Research.* 10 (3): 9-33.

Greene, Judith and Mark Coulson (1995). *Language Understanding: Current Issues* (2 ed.). Buckingham, Philadelphia: Open University Press.

Greene, William H. (1997). *Econometric Analysis*: Upper Saddle River. Prentice Hall, Englewood Cliffs, NJ.

Grano, O. (1981). "External Influence and Internal Change in the Development of Geography," in *Geography, Ideology and Social Concern*, D. R. Stoddart, Ed. Oxford: Blackwell, pp. 17-36.

Grunert, K. G., S. Grunert, and S. Beatty (1989). Cross-Cultural Research on Consumer Values. *Marketing and Research Today*. 17 (1): 30-39.

Guba, E. G. (1990). *The Paradigm Dialog*. Newbury Park: Sage.

Guerro, V. M. and R. A. Johnson (1982). Use of the Box-Cox Transformation with Binary Response Models. *Biometrika*. 69: 309-14.

Gunn, C. (1994). "A Perspective on the Purpose and Nature of Tourism Research Methods," in *Travel, Tourism and Hospitality Research: A Handbook for Managers and Researchers*, J.R.B. Ritchie and C.R. Goeldner, Eds. 2nd ed. New York: John Wiley.

Gunn, Clare A. (1980). "An Approach to Regional Assessment of Tourism Development Potential," in *Tourism Planning and Development Issues*, Donald E. Hawkins and Elwood L. Shafer and James M. Roverlstad, Eds. Washington D. C.: George Washington University.

Gunn, Clare A. (1988). *Vacationscape* (2nd ed.). New York: Van Nostrand Reinhold Co.

Guo, Lai Xi (1990). A Study on China's Tourist Resources and Their Development. *GeoJournal*. 21 (1/2): 123-26.

Gursoy, Dogan and Joseph S. Chen (2000). Competitive Analysis of Cross Cultural Information Search Behaviour. *Tourism Management*. 21: 583-90.

Guthrie, H. W. (1961). Demand for Goods and Services in a World Market. *Regional Science Association papers*. 7: 159-75.

Gyte, Douglas M. and Angela Phelps (1989). Patterns of Destination Repeat Business: British Tourists in Mallorca, Spain. *Journal of Travel Research*. XVIII (1): 24-28.

Haahti, Antti J. (1986). Finland's Competitive Position as a Destination. *Annals of Tourism Research*. 13: 11-35

Haider, W. and G. Ewing (1990). A Model of Tourist Choices of Hypothetical Caribbean Destinations. *Leisure Sciences*. 12 (1): 33-47.

Hair, Joseph F., Jr., Rolph E. Anderson, Ronald L. Tatham, and William C. Black (1998). *Multivariate Data Analysis* (5th ed.). New Jersey: Prentice-Hall, Inc.

Hall, C. M. (1992). *Wasteland to World Heritage: Preserving Australia's Wilderness*. Carlton: Melbourne University Press.

Hall, C. M. (1994). *Tourism and Politics: Policy, Power and Place*. London: John Wiley.

Hall, C. M. (1997). Geography, Marketing and the Selling of Places. *Journal of Travel & Tourism Marketing*, 6(3/4): 61-84.

Hall, C. M. (1999). *Tourism Planning: Destinations, Organisations, People and the Environment*. Harlow: Addison Wesley Longman.

Hall, C. M. and J. Jenkins. (1995). *Tourism and Public Policy*. London: Routledge.

Hall, C. M. and A. A. Lew, editors. (1998). *Sustainable Tourism Development: Geographical Perspectives.* Harlow: Addison Wesley Longman.

Hall, C. M., J. M. Jenkins, and G. Kearsley, editors. (1997). *Tourism Planning and Policy in Australia and New Zealand: Cases and Issues.* Sydney: Irwin Publishers.

Hall, C. M. and S. McArthur, editors. (1996). *Heritage management in Australia and New Zealand: The Human Dimension.* Sydney: Oxford University Press.

Hall, C. M. and S. J. Page (1999). *The Geography of Tourism & Recreation: Environment, Place and Space.* London, New York: Routledge.

Hall, S. (1991). "The Local and the Global: Globalization and Ethnicity," in Culture, Globalization and the World-System, A. King, Ed. London: Macmillan.

Hanson, S. (1980). Spatial Diversification and Multipurpose Travel: Implication for Choice Theory. *Geographical Analysis`.* 12: 245-57.

Harding, Stephen D. (1987). "Contrasting Values in Western Europe: Some Methodological Issues Arising from the EVSSG European Values Project," in *3. Language and Culture in Cross-National Research: Doing Cross-National Research (Cross-National Research Papers),* Linda Hantrais and Steen Mangen, Eds. Birmingham: Aston Modern Languages Club, Aston University.

Harpaz, Itzhak (1996). "International Management Survey Research," in *Handbook for International Management Research,* Betty Jane Punnett and Oded Shenkar, Eds.: Blackwell.

Harris, M. (1980). *Cultural Materialism: The Struggle for a Science of Culture.* New York: Vintage.

Harrison-Hill, Tracey (2001). How Far is a Long Way? Contrasting Two Cultures' Perspectives of Travel Distance. *Asia Pacific Journal of Marketing and Logistics.* 13 (3): 3-17.

Harvey, D. (1967). "Models of the Evolution of Spatial Patterns in Human Geography," in *Integrated Models in Geography,* R. J. Chorley and P. Haggett, Eds. London, Methuen: University Paperbacks.

Harvey, David (1969). *Explanation in Geography*: Edward Arnold (Publishers) Ltd.

Harvey, Greig (1985). Research Directions in Travel Demand Analysis. *Transportation Research A.* 19A (5/6): 455-59.

Hashimoto, Atsuko (1996). "*A Cross-Culture Study of Attitudes Towards the Natural Environment and Tourism Development - North Europe & East Asia,*" PhD Thesis, Surry University.

Hauser, J. R. and F. S. Koppelman (1979). Alternative Perceptual Mapping Techniques: Relative Accuracy and Usefulness. *Journal of Marketing Research.* 16 (November): 495-506.

He, Guang Wei (1999a). *Tourism Industry in China (Zhong Guo Lü You Ye).* Beijing: China Tourism Press.

He, Guang Wei Ed. (1999b). *New Century, New Industry, New Development - A Research on the Impact of Tourism on Economic Growth (Xin She Ji, Xin Chan Ye, Xin Zheng Zhang - Lü You Ye Cheng Wei Xin de Jing Ji Zeng Zhang Dian Yan Jiu).* Beijing: China Tourism Press.

Heath, E. and G. Wall. (1992). *Marketing Tourism Destinations: A Strategic Planning Approach.* Chichester: Wiley.

Henle, Paul (1975). "Language, Thought and Culture," in *Cultural and Social Anthropology: Introductory Readings in Ethnology,* Peter B. Hammond. 2nd ed. New York, London: Macmillan Publishing Co. Inc.

Herskovitz, M. (1948). *Man and His Works*. New York, NY.

Hinch, T. D. (1990). A Spatial Analysis of Tourist Accommodation in Ontario: 1974-1988. *Journal of Applied Recreation Research*, 15(4): 239-64.

Hinch, T. D. (1996). Urban Tourism: Perspectives on Sustainability. *Journal of Sustainable Tourism*, 4(2): 95-110.

Hofstede, G. (1980a). *Culture's Consequence: International Differences in Work-Related Values*. Beverly Hills CA: Sage.

Hofstede, G. (1980b). "Motivation, Leadership, and Organization: Do American Theories apply Abroad?," in *Organisational Dynamics*, G. Hofstede, Ed.: AMACOM, a division of American Management Association.

Hofstede, Geert (1991). *Cultures and Organisations: Software of the Mind*. London: McGraw Hill.

Hofstede, Geert (1983). National Cultures in Four Dimensions: A Research-Based Theory of Cultural Differences Among Nations. *International Studies of Management and Organisation*. XIII (1-2): 46-74.

Hofstede, Geert and Michael H. Bond (1988). The Confucius Connection: From Cultural Roots to Economic Growth. *Organizational Dynamics*. 16 (Spring): 5-21.

Horowitz, Joel L. (1985). Travel and Location Behaviour: State of the Art and Research Opportunities. *Transportation Research A*. 19A (5/6): 441-53.

Hosmer, David W. and Stanley Lemeshow (1989). *Applied Logistic Regression*. New York: Wiley-Interscience publication, John Wiley & Sons.

Howe, Christine Z. (1985). Possibilities for Using A Qualitative Research Approach in the Sociological Study of Leisure. *Journal of Leisure Research*. 17(?) (3): 212-24.

Hu, Clark (1996). Diverse Developments in Travel and Tourism Marketing: A Thematic Approach. *International Journal of Contemporary Hospitality Management*. 8 (7): 33-43.

Hu, Yangzhou and J. R. Brent Ritchie (1993). Measuring Destination Attractiveness: A Contextual Approach. *Journal of Travel Research*. Fall: 25-34.

Huybers, Twan and Jeff Bennett (2000). Impact of the Environment on Holiday Destination Choices of Prospective UK Tourists: Implications for Tropical North Queensland. *Tourism Economics*. 6 (1): 21-46.

Hudson, L. E. and R. H. Jackson (1998). *The Geography of Travel and Tourism*. Albany: Delmar Publishers.

Huff, David L. (1960). A Topographical Model of Consumer Space Preferences. *Papers and Proceedings of the Regional Science Association*. 6: 159-73.

Hughes, G. (1995). Authenticity in Tourism. *Annals of Tourism Research*. 22 (4): 781-803.

Huisman, Suzanne and Kevin Moore (1999). Natural Language and that of Tourism. *Annals of Tourism Research*. 26 (2): 445-49.

Hull, R. B. and G. R. B. Revell. (1989). Cross-Cultural Comparison of Landscape Scenic Beauty Evaluations: A Case in Bali. *Journal of Environmental Psychology*, 9(3): 177-91.

Husbands, W. c. (1983). Tourist Space and Tourist Attraction: An Analysis of the Destination Choices of European Travelers. *Leisure Sciences*. 5 (4): 289-307.

Hutchison, Ray (1987). Ethnicity and Urban Recreation: Whites, Blacks, and Hispanics in Chicago's Public Parks. *Journal of Leisure Research*. 19 (3): 205-22.

Huybers, Twan and Jeff Bennett (2000). Impact of the Environment on Holiday Destination Choices of Prospective UK Tourists: Implications for Tropical North Queensland. *Tourism Economics*. 6 (1): 21-46.

Institut National de Statistiques (1980). "*Enquête Vacances 1978-1979*,". Brussels: Institut National de Statistiques.

International Herald Tribune (1999). *China to Become a Major Force in International Tourism.*: p2.

Iverson, T. J. (1997a). Japanese Visitors to Guam: Lessons from Experience. *Journal of Travel & Tourism Marketing*. 6 (1).

Iverson, Thomas J. (1997b). Decision Timing: A Comparison of Korean and Japanese Travellers. *International Journal of Hospitality Management*. 16 (2): 209-19.

Jackson, R. T. (1990). VFR Tourism: Is It Underestimated. *Journal of Tourism Studies*. 1 (2): 10-17.

Jafari, J. (1977). Editor's Page. *Annals of Tourism Research*. 5: 8.

Jafari, Jafar (1989). "Structure of Tourism," in *Tourism Marketing and Management Handbook*, Stephen F. Witt and Luiz Moutinho, Eds. Herfordshire, UK: Prentice Hall International (UK) Ltd.

Jameson, Fredric (1993). Cultural Studies. *Social Text*. 34: 33.

Jansen-Verbeke, Myriam (1995). A Regional Analysis of Tourist Flows within Europe. *Tourism Management*. 16 (1): 73-82.

Jeng, Jiann-Min and Daniel R. Fesenmaier (1998). Destination Compatibility in Multidestination Pleasure Travel. *Tourism Analysis*. 3: 77-87.

Jenkins, J. (1993). Tourism Policy in Rural New South Wales - Policy and Research Priorities. *GeoJournal*, 29(3): 281-90.

Jenkins, J. and D. J. Walmsesley. (1993). Mental Maps of Tourists: A Study of Coffs Harbour, New South Wales. *GeoJournal*, 29(3): 233-41.

Jones, H. R. (1981). *Population Geography*. London: Harper and Row.

Kao, John (1993). The Worldwide Web of Chinese Business. *Harvard Business Review*. 71 (2): 24-7, 30-5.

Kaplan, H. (1964). *The Conduct of Enquiry*. San Francisco, CA: Chandler.

Kearns, G. and C. Philo, editors. (1993). *Selling Places: The City as Cultural Capital, Past and Present*. Oxford: Pergamon Press.

Kemperman, Astrid D. A. M., Aloys W. J. Borgers, Harmen Oppewal, and Harry J. P. Timmermans (2000). Consumer Choice of Theme Parks: A Conjoint Choice Model of Seasonality Effects and Variety Seeking Behaviour. *Leisure Sciences*. 22: 1-18.

Keown, Charles F. (1989). A Model of Tourists' Propensity to Buy: The Case of Japanese Visitors to Hawaii. *Journal of Travel Research*. XXVII (3): 31-34.

Kim, Jae Min (2000). Report: A Study of Tourist Demand and Accommodation in the Mt Paekdusan/Changbaishan Area. *Tourism Economics*. 6 (1): 73-83.

King, A.R. and J Brownell (1966). *The Curriculum and the Disciplines of Knowledge*. New York: John Wiley.

Kinnaird, V. and D. Hall, editors. (1994). *Tourism: A Gender Analysis*. Chichester: John Wiley.

Kitamura, R. (1984). Incorporating Trip Chaining into Analysis of Destination Choice. *Transportation Research, B*. 18B (1): 67-81.

Klaric, Zoran (1992). Establishing Tourist Regions: The Situation in Croatia. *Tourism Management*. September: 305-11.

Kleiner, R. J. and B. I. Okeke (1991). Advances in Field Theory: New Approaches and Methods in Cross-Cultural Research. *Journal of Cross-Cultural Psychology*. 22 (4): 509-24.

Klenosky, David B., Charles E. Gengler, and Michael S. Mulvey (1999). "Understanding the Factors Influencing Ski Destination Choice: A Mean-End Analytic Approach," in *Consumer Behaviour in Travel and Tourism*, Abraham Pizam and Yoel Mansfeld, Eds. New York: The Haworth Hospitality Press.

Kliskey, A. D. and Kearsley G. W. (1993). Mapping Multiple Perceptions of Wilderness in Southern New Zealand. *Applied Geography & Development*, 13: 203-23.

Kluckhorn, C. (1951). "The Study of Culture," in *The Policy Science*, D. Lewer and H. D. Lasswell, Eds. Stanford, CA: Stanford University Press.

Kmenta, J. (1971). *Elements of Econometrics*. Macmillan.

Koppelman, F. S. and J. R. Hauser (1978). Destination Choice Behaviour for Non-Grocery-Shopping Trips. *Transportation Research Record*. 673: 157-65.

Kotler, P. (1994). *Marketing Management: Analysis, Planning, Implementation, and Control* (8th ed.). New Jersey: Prentice Hall.

Kroeber, A. and C. Kluckhorn (1985). *Culture: A Critical Review of Concepts and Definitions*. New York, NY: Random House.

Kozak, M. (2001). Comparative Assessment of Tourist Satisfaction with Destinations Across Two Nationalities. *Tourism Management*. 22: 391-401.

Kuchinke, K Peter (1999). Leadership and Culture: Work-related Values and Leadership Styles Among One Company's U.S. and German Telecommunication Employees. *Human Resource Development Quarterly*. 10 (2): 135-54.

Kulendran, Nada and Kenneth Wilson (2000). Modelling Business Travel. *Tourism Economics*. 6 (1): 47-59.

Kuhn, T. S. (1962). *The Structure of Scientific Revolutions*. Chicago.

Laarman, Jan G., Timothy P. Stewart, and Jeffrey P. Prestemon (1989). International Travel by U.S. Conservation Groups and Professional Societies. *Journal of Travel Research*. XVIII (1): 12-17.

Lang, Cheng-Te and Joseph T. O'Leary (1997). Motivation, Participation, and Preference: A Multi-Segmentation Approach of the Australian Nature Travel Market. *Journal of Travel & Tourism Marketing*. 6 (3/4): 159-80.

Larrain, Jorge (1994). *Ideology and Cultural Identity: Modernity and the Third World Presence.* Polity Press.

Law, C. M. (1992). Urban tourism and its Contribution to Economic Regeneration. *Urban Studies*, 29(3/4): 599-618.

Law, C. M. (1993). *Urban tourism: Attracting Visitors to Large Cities.* London: Mansell.

Law, C. M., editor. (1996). *Tourism in Major Cities.* London: International Thomson Business Publishing.

Leaming, G. F. and N. de Gennaro (1974). City Characteristics in the Development of an Air Travel Forecasting Model: The Case of Tucson, Arizona. *Journal of Travel Research.* 12 (3): 7-9.

Lee, Choong-Ki (1996). Major Determinants of International Tourism Demand for South Korea: Inclusion of Marketing Variable. *Journal of Travel & Tourism Marketing.* 5 (1/2): 101-18.

Leiper, N. (1979). A Framework of Tourism. *Annals of Tourism Research.* 6: 390-407.

Leiper, N. (1990). "*Tourism Systems: An Interdisciplinary Perspective,*" Occasional Paper, Massey University.

Leung, K. and M. H. Bond (1989). On the Empirical Identification of Dimensions for Cross-Cultural Comparisons. *Journal of Cross-Cultural Psychology.* 20 (2): 133-51.

Lew, A. A. (1985). Bringing Tourists to Town. *Small Town*, 16: 4-10.

Lew, A. A. (1987). A Framework for Tourist Attraction Research. *Annals of Tourism Research*, 14(4): 553-75.

Lew, A. A. (1989). Authenticity and Sense of Place in the tourism Development Experience of Older Retail Districts. *Journal of Travel Research*, 27(4): 15-22.

Lew, A. A. (1995). "Overseas Chinese and Compatriots in China Tourism Development," in *Tourism in China: Geographic, Political, and Economic Perspectives*, Alan A. Lew and Lawrence Yu, Eds.: Westview Press.

Lew, A. A. and G. A. van Otten, editors. (1997). *Tourism on American Indian Lands.* New York: Cognizant Communications Corporation.

Ley, D. and K. Olds. (1988). Landscape as Spectacle: World's Fairs and the Culture of Heroic Consumption. *Environment and Planning D*, 6: 191-212.

Lim, C. (1997). Review of International Tourism Demand Models. *Annals of Tourism Research.* 24: 835-49.

Lim, Christine (1999). A Meta-Analytic Review of International Tourism Demand. *Journal of Travel Research.* 37 (February): 273-84.

Linton, Ralph (1945). *The Cultural Background of Personality.* New York: Appleton-Century.

Lipton, Douglas W. (1999). Boat Location Choice: The Role of Boating Quality and Excise Taxes. *Coastal Management.* 27: 81-89.

Liu, Chu Mei (1999). Tourist Behaviour and the Determinants of Secondary Destination. *Asia Pacific Journal of Marketing and Logistics.* 11 (4): 3-22.

Lloyd, Peter E. and Peter Dicken (1972). *Location in Space: A Theoretical Approach to Economic Geography* (2 ed.): Harper & Row, Publishers.

Lloyd, R. and C. Heivly (1987). Systematic Distortions in Urban Cognitive Maps. *Annals of the Association of American Geographers*. 77: 191-207.

Lollar, Sam A. and Gcarlton Van Doren (1991). U.S. Tourist Destinations: A History of Desirability. *Annals of Tourism Research*. 18: 622-38.

Louviere, Jordan J. (1988). Conjoint Analysis Modelling of Stated Preferences. *Journal of Transport Economics and Policy*. Jan. : 93-119.

Lue, Chi-Chuan, John L. Crompton, and Daniel R. Fesenmaier (1993). Conceptualization of Multidestination Pleasure Trips. *Annals of Travel Research*. 20: 289-301.

Lundgren, J. O. (1972). The Development of Tourist Travel Systems - A Metropolitan Economic Hegemony Par Excellence. *Jahrbuch fur Fremdenverkehr*. 20 (Jahrgang): 86-120.

Lundgren, Jan O.J. (1984). Geographic Concepts and the Development of Tourism Research in Canada. *GeoJournal*. 9 (1): 17-25.

Luzar, E. Jane, Assane Diagne, and et al. (1998). Profiling the Nature-based Tourist: A Multinomial Logit Approach. *Journal of Travel Research*. 37 (1): 48-54.

Ma, Yaofeng and Tianshun Li (1999). *A Study of the Inbound Tourism in China (Zhongguo Rujing Luyou Yanjiu):* A Project of the Chinese National Foundation of Natural Science. Scientific Press: Beijing.

MacCannell, D. (1976). *The Tourist: A New Theory of the Leisure Class*. London: Macmillan.

Machlup, Fritz (1978). *Methodology of Economics and Other Social Sciences*. New York San Francisco, London: Academic Press Inc.

Madsen, H. (1992). Place-Marketing in Liverpool: A Review. *International Journal of Urban and Regional Research*, 16(4): 633-40.

Malamud, B. (1973). Gravity Model Calibration of Tourist Travel to Las Vegas. *Journal of Leisure Research*. 5 (1): 23-33.

Malhotra, N. K. (1984). *The Use of Linear Logit Models in Marketing Research. 21*. Feb. (20-31).

Malhotra, Naresh K., James Agarwal, and Mark Peterson (1996). Methodological Issues in Cross-cultural Marketing Research: A State-of-the-Art Review. *International Marketing Review*. 13 (5): 7-43.

Malinowski, Bronislaw (1944). *A Scientific Theory of Culture and Other Essays*. Chapel Hill, NC: University of North Carolina Press.

Manrai, Lalita A. and Ajay K. Manrai (1996). Current Issues in the Cross-Cultural and Cross-National Consumer Research. *Journal of International Consumer Marketing*. 8 (3/4): 9-22.

Mansfeld, Y. (1995). The Value Stretch Model and Its Implications in Detecting Tourists Class-Differentiated Destination Choice. *Journal of Travel & Tourism Marketing*. 4 (3): 71-92.

Mansfeld, Yoel (1990). Spatial Patterns of International Tourist Flows: Towards a Theoretical Framework. *Progress in Human Geography*. 14: 372-90.

March, Roger (1997). Diversity in Asian Outbound Travel Industries: A Comparison between Indonesia, Thailand, Taiwan, South Korea and Japan. *International Journal of Hospitality Management*. 16 (2): 231-38.

Marsh, J. G. (1983). Canada's Parks and Tourism: A Problematic Relationship. In Murphy, P.E., editor, *Tourism in Canada: Selected Issues and Options*. Western Geographical Series, Vol.21, Victoria: Department of Geography, University of Victoria, 271-307.

Marsh, J. G. (1985). The Rocky and Selkirk Mountains and teh Swiss Connection 1885-1914. *Annals of Tourism Research*, 12: 417-33.

Martin, Christine A and Stephen F Witt (1989). Accuracy of Econometric forecasts of Tourism. *Annals of Tourism Research*. 16 (3).

Master, Hoda and Bruce Prideaux (2000). Culture and Vacation Satisfaction: A Study of Taiwanese Tourists in South East Queensland. *Tourism Management*. 21: 445-49.

Mathieson, A. and G. Wall. (1982). *Tourism: Economic, Physical and Social Impacts*: Harlow: Longman.

Matley, Ian M. (1976). *The Geography of International Tourism.* Resource Paper No. 76-1, Michigan State University.

Matsumoto, Shoji and Luperfina E. Rojas (1998). "Discrete Logit Modelling Based on Stated Preference Data of the Analytic Hierarchy Process for Parking Choice," in *Travel Behaviour Research: Updating the State of Play*, Juan de Dios Ortuzar and David Hensher and Sergio Jara-Diaz, Eds. Amsterdam, Oxford, New York: Elsevier.

Mayer, Thomas (1995). *Doing Economic Research: Essays on the Applied Methodology of Economics.* Economists of the Twentieth Century, Edward Elgar Publishing Ltd.

Mazanec, J.A. (1984). How to Detect Travel Market Segments: A Clustering Approach. *Journal of Travel Research*. 23 (1): 17-23.

Mayo, E. and L. Jarvis (1981). *The Psychology of Leisure Travel*. Boston: CBI Publishing.

McFadden, D. (1973). "Conditional Logit Analysis of Qualitative Choice Behaviour," in *Frontiers in Econometrics*, P. Zarembka, Ed. New York: Academic Press.

McFadden, D. (1974a). Aggregate Travel Demand Forecasting From Disaggregated Behavioural Models. *TRB Record*. 534: 24.

McFadden, D. (1974b). "Conditional Logit Analysis of Qualitative Choice Behaviour," in *Frontiers in Econometrics*, Paul Zarembka, Ed. New York: Academic Press, Inc.

McGrath, J. E., J. Martin, and R. A. Kulka (1982). *Judgement Calls in Research*. Beverly Hills, CA: Saga Publications.

McIntosh, Robert W. and Charles R. Goeldner (1986). *Tourism Principles, Practices, Philosophies* (5 ed.): New York John Wiley and Sons.

McKean, P. (1978). "Economic Dualism and Cultural Involution in Bali," in *Host and Guests: The Anthropology of Tourism*. V. Smith, Ed. Oxford: Blackwell.

McKercher, B. (1993a). Some Fundamental Truths about Tourism: Understanding Tourism's Social and Environmental Impacts. *Journal of Sustainable Tourism*, 1(1): 6-16.

McKercher, B. (1993b). The Unrecognized Threat to Tourism: Can Tourism Survive Sustainability. *Tourism Management*, 14(2): 131-36.

McKercher, B. (1993c). Australian Conservation Organisations' Perspectives on Tourism in National Parks: A Critique. *GeoJournal*, 29(3): 131-36.

McKercher, Bob (1996). Host Involvement in VFR Travel. *Annals of Tourism Research*. 23 (3).

Mead, Margaret (1948). *Male and Female*. New York: William Morrow.

Menard, Scott W. (1995). *Applied Logistic Regression Analysis*. Thousand Oaks, CA: Sage.

Menezes, Dennis and Satish Chandra (1989). The Distant Overseas U.S. Tourist: An Exploratory Study. *Journal of Travel Research*. XXVIII (2): 6-10.

Mercer, D. C. (1994). Native Peoples and Tourism: Conflict and Compromise. In Theobald, W. F., editor, *Global Tourism: The Next Decade*. Boston: Butterworth Heinemann.

Miles, J. C. and J. N. Hammond (1977). "*A Survey of Routes Taken by Motor Vehicles in the Lake District*,". Crowthorne, Berks: Transport and Road Research Laboratory.

Miles, J. C. and N. Smith (1977). "*Models of Recreational Traffic in Rural Areas*,". Crowthorne, Berks: Transport and Road Research Laboratory.

Mills, R. C. and A. M. Morrison (1985). *The Tourism System*. Englewood Cliffs, NJ: Prentice Hall.

Mings, Robert C. and Kevin E. McHugh (1992). The Spatial Configuration of Travel to Yellowstone National Park. *Journal of Travel Research*. 30 (4): 38-46.

Miossec, J. M. (1976). "Elements pour une Theorie de l'Espace Touristique,". *Les Cahiers du Tourisme*, C-36, C.H.E.T., Aix-en-Provence.

Mitchell, Lisle S. (1994). "Research on the Geography of Tourism," in *Travel, Tourism, and Hospitality Research*, J. R. Brent Ritchie and Charles R. Goeldner, Eds. 2 ed.: John Wiley & Sons, Inc.

Mitchell, Lisle S. and Richard V. Smith (1989). "The Geography of Recreation, Tourism, and Sport," in *Geography in America*, G.L. Gaile, Ed. Columbus, Ohio: Merrill Publishing Company.

Mitchell, Lisle S. and Peter E. Murphy (1991). Geography and Tourism. *Annals of Tourism Research*. 18: 57-70.

Mok, C., R. W. Armstrong, and F. Go (1995). Taiwanese Travellers' Perception of Leisure Destination Attributes. *Australian Journal of Hospitality Management*. 2 (1): 17-22.

Mok, C. and T. Lam (1997). A Model of Tourists' Shopping Propensity: A Case of Taiwanese Visitors to Hong Kong. *Pacific Tourism Review*. 1 (2): 137-45.

Mok, Connie and Agnes L. DeFranco (1999). Chinese Cultural Values: Their Implications for Travel and Tourism Marketing. *Journal of Travel and Tourism Marketing*. 8 (2): 99-114.

Moore, Kevin, Grant Cushman, and David Simmons (1995). Behavioural Conceptualization of Tourism and Leisure. *Annals of Tourism Research*. 22 (1): 67-85.

Morgan, C. T. and R. A. King (1965). *Introduction to Psychology*. New York: McGraw-Hill.

Morley, Clive L. (1991). Modeling International Tourism Demand: Model Specification and Structure. *Journal of Travel Research*. 30 (1): 40-44.

Morley, Clive L. (1992). A Microeconomic Theory of International Tourism Demand. *Annals of Tourism Research*. 19: 250-67.

Morley, Clive L. (1994a). Experimental Destination Choice Analysis. *Annals of Tourism Research*. 21 (4): 780-91.

Morley, Clive L. (1994b). Discrete Choice Analysis of the Impact of Tourism Prices. *Journal of Travel Research*. 33 (2): 8-14.

Morley, Clive L. (1997). An Evaluation of the Use of Ordinary Least Squares for Estimating Tourism Demand Models. *Journal of Travel Research*. 35 (4): 69-73.

Morse, J. M. (1994). "Emerging from the Data: the Cognitive Process of Analysis in Qualitative Enquiry," in *Critical Issues in Qualitative Research Methods*, J. M. Morse, Ed. Thousand Oaks, CA: Sage Publications.

Moutinho, Luiz (1987). Consumer Behaviour in Tourism. *European Journal of Marketing*. 21 (10): 3-44.

Moutinho, Luiz and John Trimble (1991). A Probability of Revisitation Model: The Case of Winter Visits to the Grand Canyon. *The Service Industries Journal*. 11 (4, October): 439-57.

Mowen, J. C. (1993). *Consumer Behaviour*. USA: Macmillan.

Muller, Thomas E. (1989). The Two Nations of Canada vs. the Nine Nations of North America: A Cross-Cultural Analysis of Consumers' Personal Values. *Journal of International Consumer Marketing*. 1 (4): 57-79.

Muller, Thomas E. (1991). Using Personal Values to Define Segments in an International Tourism Market. *International Marketing Review*. 8 (1): 57-70.

Murakami, K. and F. Go (1990). Transnational Corporations Capture Japanese market. *Tourism Management*. December: 348-53.

Murphy, P.E. (1963). Geography and Outdoor Recreation: An Opportunity and an Obligation. *The Professional Geographer*. XV (5): 33-34.

Murphy, P. E. (1985). *Tourism: A Community Approach*. London: Routledge.

Murphy, P. E. (1994). Tourism and Sustainable Development. In Theobold, W., editor, *Global Tourism: The Next Decade*. Oxford: Butterworth Heinemann.

Murphy, P. E., editor. (1997). *Quality Management in Urban Tourism,* International Western Geographical Series, Chichester: Wiley.

Murphy, Peter E. and C. Peter Keller (1990). Destination Travel Patterns: An Examination and Modeling of Tourist Patterns on Vancouver Island, British Columbia. *Leisure Sciences*. 12 (1): 49-65.

Murphy, Peter E. and Lorne Rosenblood. (1974). Tourism: An Exercise in Spatial Search. *Canadian Geographer*, 18(3): 201-10.

Nash, D. (1978). An Anthropological Approach to Tourism. *Tourism and Economic Change Studies in Third World Societies*. 7: 133-52.

Nelson, J. G. (1973). Canada's National Parks - Past, Present and Future. *Canadian Geographical Journal*, 86(3): 68-89.

Nijkamp, P. (1979). "Gravity and Entropy Models: The State of Art," in *New Development in Modelling Travel Demand and Urban Systems: Some Results of Recent Dutch Research*, G. R. M. Jansen and P. H. L. Bovy and J. P. J. M. van Est and F. le Clercq, Eds. Westmead, Farnborough, Hants., England: Saxon House.

Norusis, M. J. (1993). *SPSS for Windows Bass System User's Guide Release 6.0.* SPSS Inc.

Norušis, Marija J. (1999). *SPSS Regression Models™ 10.0.* Chicago: SPSS Inc.

Nozawa, H. (1992). A Marketing Analysis of Japanese Outbound Travel. *Tourism Management*. June: 226-34.

O'Hagan, J. and M. Harrison (1984a). Market Shares of US Tourist Expenditure in Europe: An Econometric Analysis. *Applied Economics*. 16: 919-31.

O'Hagan, J. W. and M. J. Harrison (1984b). Tourism expenditure in Europe: an Econometric Analysis. *Applied Economics*. 16: 919-31.

O'Malley, G. L. (1991). "*The Role of Past Experience in U.S. Travellers' Destination of Canada*," Master's Thesis, Purdue University.

Olwig, K. and K. Olwig. (1979). Underdevelopment and the Development of "natural" parks ideology. *Antipode*, 11(2): 16-25.

Oppermann, Martin (1992a). Intranational Tourist Flows in Malaysia. *Annals of Tourism Research*. 19 (3): 482-500.

Oppermann, Martin (1992b). Spatial Structure of Tourism in Peninsular Malaysia A Preliminary Study. *Tourism Recreation Research*. 17 (1): 54-59.

Oppermann, Martin (1993a). Regional Market Segmentation Analysis in Australia. *Journal of Travel & Tourism Marketing*. 2 (4): 59-74.

Oppermann, Martin (1993b). German Tourists in New Zealand. *New Zealand Geographer*. 49 (1): 30-34.

Oppermann, Martin (1993c). Tourism space in Developing Countries. *Annals of Tourism Research*. 20 (3).

Oppermann, Martin (1995). A Model of Travel Itineraries. *Journal of Travel Research*. 33 (4, Spring): 57-61.

Oppermann, Martin (1997a). Geography's Changing Role in Tourism Marketing. *Journal of Travel & Tourism Marketing*. 6 (3/4): 1-3.

Oppermann, Martin (1997b). First-Time and Repeat Visitors to New Zealand. *Tourism Management*. 18 (3/4): 177-81.

Oppermann, Martin (1998). Destination Threshold Potential and the Law of Repeat Visitation. *Journal of Travel Research*. 37 (2): 131-37.

Oppermann, Martin (1999). "Where Psychology and Geography Interface in Tourism Research and Theory," in *Consumer Psychology of Tourism Hospitality and Leisure*, A.G. Woodside and G.I. Crouch and J.A. Mazanec and M. Oppermann and M.Y.Sakai, Eds.: CABI Publishing.

Ostergaard, P. (1974). "*A Geographically-Oriented marketing Model of Automobile Tourist Flows from the United States to Canada*". Ottawa: Marketing Research Office, Canadian Government Office of Tourism.

Oum, Tae Hoon and Nicole Lemire (1991). An Analysis of Japanese International Travel Destination Choices. *International Journal of Transport Economics*. XVIII (3): 289-307.

Oxford English Dictionary (2003). http://dictionary.oed.com/cgi/entry/00255233.

Page, S. (1995). *Urban Tourism*. London: Routledge.

Papatheodorou, A. (1999). The Demand for International Tourism in the Mediterranean Region. *Applied Economics*. 31 (5): 619-30(12).

Papatheodorou, Andreas (2001). Why People Travel to Different Places. *Annals of Tourism Research*. 28 (1): 164-79.

Paul, Bimal Kanti and Hussein Snaf Rimmawi (1992). Tourism in Saudi Arabia: Asir National Park. *Annals of Tourism Research*. 19: 501-15.

Peabody, D. (1985). *National Characteristics*. Cambridge: University Press.

Pearce, Douglas G. (1978). Demographic Variations in International Travel. *Tourist Review*. 33 (1): 4-9.

Pearce, Douglas G. (1979). Towards A Geography of Tourism. *Annals of Tourism Research*. 6 (3): 245-72.

Pearce, D. G. (1981). *Tourist Development*. London: Longman.

Pearce, Douglas G. (1984). "*International Tourist Flows: An Integrated Approach with Examples from French Polynesia*," in 12th New Zealand Geography Conference. New Zealand, Christchurch: New Zealand Geography Society.

Pearce, Douglas G. (1987a). *Tourism Today: A Geographical Analysis*. Longman Scientific & Technical.

Pearce, Douglas G. (1987b). Spatial Patterns of Package Tourism in Europe. *Annals of Tourism Research*. 14: 183-201.

Pearce, Douglas G. (1988a). Tourist Time-Budgets. *Annals of Tourism of Research*. 15: 106-21.

Pearce, Douglas G. (1988b). Tourism and Regional Development in the European Community. *Tourism Management*, 9: 11-22.

Pearce, Douglas G. (1989). *Tourist Development*. 2nd ed. Harlow: Longman.

Pearce, Douglas G. (1990). Tourism, the Regions and Restructuring in New Zealand. *The Journal of Tourism Studies*. 1 (2): 33-42.

Pearce, Douglas G. (1992a). Tourism and the European Regional Development Fund: the First Fourteen Years'. *Journal of Travel Research*, 30: 44-51.

Pearce, Douglas G. (1992b). *Tourist Organisation*. Harlow: Longman.

Pearce, Douglas G. (1993). Domestic Tourist Travel Patterns in New Zealand. *GeoJournal*, 29(3): 225-32.

Pearce, Douglas G. (1995). *Tourism Today: A Geographical Analysis*. 2nd ed. Harlow: Longman.

Pedersen, P. (1988). *A Handbook for Developing Multicultural Awareness.* Alexandria, VA: American Association for Counselling and Development.

Pedrini, L. (1984). The Geography of Tourism and Leisure in Italy. *GeoJournal.* 9 (1): 55-57.

Perdue, Richard R. and Larry d. Gustke (1985). Spatial Patterns of Leisure Travel by Trip Purpose. *Annals of Tourism Research.* 12: 167-80.

Peterson, G. L., D. H. Anderson, and D. W. Lim (1982). Multiple Use Site Demand Analysis: An Application to the BWCA Wilderness. *Journal of Leisure Research.* 14: 27-36.

Peterson, George L., Daniel J. Stynes, and J. Ross Arnold (1985). The Stability of a Recreation Demand Model over Time. *Journal of Leisure Research.* 17 (2): 121-32.

Phelps, Angela (1986). Holiday Destination Image - The Problem of Assessment: An Example Developed in Menorca. *Tourism Management.* 17: 168-80.

Philipp, Steven F. (1994). Race and Tourism Choice: A Legacy of Discrimination? *Annals of Tourism Research.* 21 (3): 479-88.

Pi Sunyer, O. (1977). "Through Native Eyes: Tourists and Tourism in a Catalan Maritime Community," in *Hosts and Guests: The Anthropology of Tourism*, V. Smith, Ed. Philadelphia: University of Pennsylvania Press.

Pigram, J. J. (1977). Beach Resort Morphology. *Habitat International*, 2(5-6): 525-41.

Pigram, J. J. (1980). Environmental Implications of Tourism Development. *Annals of Tourism Research*, 7: 554-83.

Pike, K. (1954). *Language in Relation to a Unified Theory of the Structure of Human Behaviour.* Glendale: Summer Institute of Linguistics.

Pike, K. (1956). *Language in Relation to a Unified Theory of the Structure of Human Behaviour.* Glendale: Summer Institute of Linguistics.

Pike, K. (1960). *Language in Relation to a Unified Theory of the Structure of Human Behaviour.* Glendale: Summer Institute of Linguistics.

Piperoglou, John (1966). Identification and Definition of Regions in Greek Tourist Planning. *Regional Science Association: Papers.* 18 (Vienna Congress): 169-76.

Pizam, Abraham (1999). "Cross-Cultural Tourist Behaviour," in *Consumer Behaviour in Travel and Tourism*, Abraham Pizam and Yoel Mansfeld, Eds. New York: The Haworth Hospitality Press.

Pizam, Abraham, M. Jansen-Verbeke, and L. Steel (1997). Are All Tourists Alike Regardless of Nationality? The Perceptions of Dutch Tour-Guides. *Journal of International Hospitality, Leisure and Tourism Management.* 1 (1): 19-40.

Pizam, Abraham and Gang-Hoan Jeong (1996). Cross-Cultural Tourist Behavior: Perceptions of Korean Tour-Guides. *Tourism Management.* 17 (4): 277-86.

Pizam, Abraham and A. Reichel (1996). The Effect of Nationality on Tourist Behaviour: Israeli Tour Guides' Perceptions. *Journal of Hospitality and Leisure Marketing.* 4 (1): 23-49.

Pizam, Abraham and S. Sussmann (1995). Does Nationality Affect Tourist Behavior. *Annals of Tourism Research.* 22 (4): 901-17.

Plog, Stanley C. (1974). Why Destination Areas Rise and Fall in Popularity. *Cornell H.R.A. Quarterly*. Feb.: 55-58.

Popelka, C. A. and M. A. Littrell. (1991). Influence of Tourism on Handicraft Evolution. *Annals of Tourism Research*, 18(3): 392-413.

Popper, Karl R. (1935). *Die Logik der Forschung (The Logic of Scientific Discovery)*. Vienna: Julius Springer. Translation: London: Hutchinson; New York: Basic Books, 1959.

Popper, Karl R. and John Carew Eccles (1977). *The Self and Its Brain* (xvi,597p.. 24cm ed.). Berlin, London: Springer International.

Poston, Dudley L., Jr. and Mei Yu Yu (1990). The Distribution of the Overseas Chinese in the Contemporary World. *International Migration Review*. xxiv (3): 480.

Potter, C. C. (1989). What is Culture: And Can it be Useful for Organisational Change Agents? *Leadership and Organisation Development Journal*. 10 (3): 17-24.

Powell, John A. (1978). "*Report of the Tourism Sector Consultative Task Force*". Ottawa: Department of Industry, Trade and Commerce.

Prideaux, Bruce R. (1998). Korean Outbound Tourism: Australia's Response. *Journal of Travel & Tourism Marketing*. 7 (1): 93-102.

Qiu, Han Qin and Jun Sen Zhang (1995). Determinants of Tourist Arrivals and Expenditures in Canada. *Journal of Travel Research*. Fall: 43-49.

Qu, H. and I Li (1997). The Characteristics and Satisfaction of Mainland Chinese Visitors to Hong Kong. *Journal of Travel Research*. 35 (4): 37-41.

Rajotte, F. (1975). *The Different Travel Patterns and Spatial Framework of Recreation and Tourism*. Peterborough: Department of Geography, Trent University, Occasional Paper 4.

Reid, Laurel J. and Stanley D. Reid (1997). "Traveler Geographic Origin and Market Segmentation for Small Island Nations: The Barbados Case," in *Geography and Tourism Marketing*, Martin Oppermann, Ed.: The Haworth Press Inc.

Reisinger, Y. and L. Turner (1997a). Cross-Cultural Differences in Tourism: Indonesian Tourists in Australia. *Tourism Management*. 18 (3): 139-47.

Reisinger, Yvette and Lindsay Turner (1998a). A Cultural Analysis of Japanese Tourists: Challenges for Tourism Marketers. *European Journal of Marketing*. 33 (11/12): 1203-27.

Reisinger, Yvette and Lindsay Turner (1998b). Cross-Cultural Differences in Tourism: A Strategy for Tourism Marketers. *Journal of Travel and Tourism Marketing*. 7 (4): 79-106.

Reisinger, Yvette and Lindsay Turner (1998c). Cultural Differences between Mandarin-Speaking Tourists and Australian Hosts and Their Impact on Cross-Cultural Tourist-Host Interaction. *Journal of Business Research*. 42 (2): 175-87.

Relph, E. (1976). *Place and Placeless*. London: Pion.

Richards, M. C. (1982). Disaggregate Demand Models - Promises and Prospects. *Transportation Researches A*. 16: 339-34.

Richards, M. C. (1979). "Disaggregate Choice Models: An Evaluation," in *New Development in Modelling Travel Demand and Urban Systems: Some Results of Recent Dutch Research*, G. R. M. Jansen and P. H. L. Bovy and J. P. J. M. van Est and F. le Clercq, Eds. Westmead, Farnborough, Hants., England: Saxon House.

Richard, M. D. and James B. Faircloth (1994). A Factor/Regression Model of Public Golf Course Choice Intentions. *Journal of Hospitality & Leisure Marketing*. 2 (4): 37-52.

Richards, M. G. and M. E. Ben-Akiva (1975). *A Disaggregate Travel Demand Model*. Farnborough: Saxon House, Lexington Books.

Richardson, Sarah L. and John L. Crompton (1988a). Cultural Variations in Perceptions of Vacation Attributes. *Tourism Management*. June: 128-36.

Richardson, S. L. and J. L. Crompton (1988b). Vacation Patterns of French and English Canadians. *Annals of Tourism Research*. 15 (3): 430-35.

Riddington, Geoff, Colin Sinclair, and Nicola Milne (2000). Modelling Choice and Switching Behaviour between Scottish Ski Centres. *Applied Economics*. 32: 1011-18.

Robinson, Mike (1998). "Cultural Conflicts in Tourism: Inevitability and Inequality," in *Tourism and Culture Conflicts*, M. Robinson and Priscilla Boniface, Eds. CABI Publishing.

Roehl, Wesley S. and Daniel R. Fesenmaier (1992). Risk Perceptions and Pleasure Travel: An Exploratory Analysis. *Journal of Travel Research*. 30 (4): 17-?

Rohner, R. P. (1984). Toward a Conception of Culture for Cross-Cultural Psychology. *Journal of Cross-Cultural Psychology*. 15 (2): 111-38.

Rokeach, M. (1979). *Understanding Human Values: Individual and Societal*. New York: Free Press.

Ronen, S. (1986). *Comparative and Multinational Management*. New York: Wiley.

Roper, Angela and Maureen Brookes (1999). Theory and Reality of Interdisciplinary Research. *International Journal of Contemporary Hospitality Management*. 11 (4): 174-79.

Rugg, Donald D. (1973). The Choice of Journey Destination: A Theoretical and Empirical Analysis. *Review of Economics and Statistics*. 55 (1): 64-71.

Ruijgrok, C. J. (1979). "Disaggregate Choice Models: An Evaluation," in New Development in *Modelling Travel Demand and Urban Systems: Some Results of Recent Dutch Research*, G. R. M. Jansen and P. H. L. Bovy and J. P. J. M. van Est and F. le Clercq, Eds. Westmead, Farnborough, Hants., England: Saxon House.

Saige, G. and S. H. Schwartz (1996). "National Differences in Value Consensus," in *Key Issues in Cross-Cultural Psychology*, H. Grad and A. Blanco and J. Georgas, Eds. Lisse, The Netherlands: Swets & Zeitlinger.

Sapir, Edward (1916). Time Perspective in Aboriginal American Culture: A Study in Method. Department of Mines, Geological Survey, Anthropological Series. Memoir 90, Series No. 13. Reprinted in D. Mandelbaum, ed., *Selected Writing of Edward Sapir,* 1949. Berkeley: University of California Press.

Sapir, Edward (1929). The Status of Linguistics as a Science. *Language*. 5: 207-14.

Sarre, Philip and Geoffrey Edge (1972). "Unit 17 Diffusion and Conclusion," in *Social Sciences: A Second Level Course - New Trends in Geography* V. Walton Hall, Bletchley, Bucks: The Open University Press.

Saunders, Mark, Philip Lewis, and Adrian Thornhill (1997). *Research Methods for Business Studies* (2nd ed.): Prentice Hall.

Schmidhauser, H. (1976). Neue Erkenntnisse über Gesetzmässigkeiten bei der Wahl des Reiseziels (New Insights in the Regularities in Destination Choice). *Jahrbuchfür Fremdenverkehr*. 24/25: 86-102.

Schroeder, Herbert W. and Jordan Louviere (1999). Stated Choice Models for Predicting The Impact of User Fees at Public Recreation Sites. *Journal of Leisure Research*. 31 (3): 300-24.

Seaton, A V and Christine Palmer (1997). Understanding VFR tourism behaviour: the first five years of the United Kingdom tourism survey. *Tourism Management*. September.

Segall, Marshall H. (1979). *Cross-Cultural Psychology: Human Behaviour in Global Perspective*. Monterey, California: Brooks/Cole Publishing Company, Wadsworth, Inc.

Senge, P. J. (1975). *Testing Estimation Techniques for Social Models*. Cambridge, Mass.: Massachusetts Institute of Technology.

Shaw, G. and A. M. Williams. (1994). *Critical Issues in Tourism: A Geographical Perspective*. Oxford: Blackwell.

Sheldon, Pauline J. (1995). The Demand for Incentive Travel: An Empirical Study. *Journal of Travel Research*. Spring: 23-28.

Sheldon, Pauline J. and M. Fox (1988). The Role of Foodservice in Vacation Choice and Experience: A Cross-Cultural Analysis. *Journal of Travel Research*. 27 (3): 9-15.

Sheldon, Pauline J. and T. Var (1985). Tourism Forecasting: A Review of Empirical Research. *Journal of Forecasting*. 4: 183-95.

Shen, Yanrong (1993). "Regional Policies of Tourist Industry," in *Tourism in China: Industry Policy and Coordinated Development*, W. Xiaojing and F. Zongsu, Eds. Beijing: Tourism Education Press.

Shirasaka, Shigeru (1980). "Foreign Visitors' Flow in Japan," in Proceedings of the Meeting of the IGU Working Group: *Geography of Tourism and Recreation. Alpinism & Tourism and Other Problems of the Geography of Tourism* Vol. Heft 41. Karuizawa 25: Frankfurter Wirtschafts - und Sozialgeographische Schriften.

Shweder, R. (1991). *Thinking through Cultures: Expeditions in Cultural Psychology*. Cambridge: Harvard University Press.

Siderelis, Christos, Gene Brothers, and Phil Rea (1995). A Boating Choice Model for the Valuation of Lake Access. *Journal of Leisure Research*. 27 (3): 264-82.

Siderelis, Christos and Roger L. Moore (1998). Recreation Demand and the Influence of Site Preference Variables. *Journal of Leisure Research*. 30 (3): 301-18.

Simmons, D.G. and N. Leiper (1993). "Tourism: A Social Scientific perspective," in *Leisure, Recreation and Tourism*, H. C. Perkins and G. Cushman, Eds. London: Longman Paul.

Skidmore, S. and R. Pyszka (1987). U.S. International Pleasure Travel Market - A Values Perspective. *Tourism Management*. 8: 121-22.

Slagmolen, M. H. (1979). "Definition of Available Alternatives and Specification of Individual Choice Behaviour for a Train Choice Model," in *New Development in Modelling Travel Demand and Urban*

*Systems: Some Results of Recent Dutch Research*, G. R. M. Jansen and P. H. L. Bovy and J. P. J. M. van Est and F. le Clercq, Eds. Westmead, Farnborough, Hants., England: Saxon House.

Smeral, Egon, Stephen F Witt, and Christine A Witt (1992). Econometric forecasts tourism trends to 2000. *Annals of Tourism Research*. 19 (3).

Smith, S. L. J. (1983). Restaurants and Dining Out: Geography of a Tourism Business. *Annals of Tourism of Research*, 10(4): 515-49.

Smith, S. L. J. (1988). Defining Tourism: A Supply-Side View. *Annals of Tourism Research*. 15: 179-90.

Smith, S. L. J. (1989). *Tourism: A Geographical Analysis*. Harlow: Longman Scientific and Technical.

Smith, S. L. J. and B. A. Brown (1981). Directional Bias in Vacation Travel. *Annals of Tourism Research*. 8: 257-70.

Smith, Stephen L. J. (1985). Location Patterns of Urban Restaurants. *Annals of Tourism Research*. 12: 581-602.

Smith, Stephen L. J. (1987). Regional Analysis of Tourism Resources. *Annals of Tourism Research*, 14: 254-73.

Smith, Stephen L. J. (1990). A Test of Plog's Allocentric/Psychocentric Model: Evidence from Seven Nations. *Journal of Travel Research*. Spring: 40-43.

Smith, Valene L (1986). California's Highway 89 A Regional Tourism Model. *Annals of Tourism Research*. 13 (3).

Song, Haiyan, Peter Romilly, and Xia Ming Liu (2000). An Empirical Study of Outbound Tourism Demand in the UK. *Applied Economics*. 32 (5): 611-25.

Spotts, Daniel M. (1997). Regional Analysis of Tourism Resources for Marketing Purpose. *Journal of Travel Research*. Winter: 3-15.

SPSS (2001). *SPSS for Windows Release 11.0* (19 September 2001): SPSS Inc. 1989 - 2001.

Squire, S. J. (1994). Accounting for Cultural Meanings: The Interface Between Geography and Tourism Studies Revisited. *Progress in Human Geography*, 18: 1-16.

Stemerding, Marc, Harmen Oppewal, and Harry Timmermans (1999). A Constraints-Induced Model of Park Choice. *Leisure Sciences*. 21 (2): 145-58.

Stewart, Edward C. and Milton J. Bennett (1991). *American Cultural Patterns: A Cross-Cultural Perspective* (Revised ed.). Maine, USA: Intercultural Press, Inc.

Stewart, S.I. and C.A. Vogt (1997). Multi-Destination Trip Patterns. *Annals of Tourism Research*. 24 (2): 458-61.

Stoner, James and Vincenzo Milione (1978). "Behavioural Analysis of Travel and Activity Choices," in *Determinants of Travel Choice*, David A. Hensher and Quasim Dalvi, Eds.: Saxon House.

Sturdivant, F. B. (1985). *Business and Society: A Managerial Approach* (3 ed.). New York: Harcourt Brace Jovanovich, Inc.

Stynes, Daniel J. and George L. Peterson (1984). A Review of Logit Models with Implications for Modeling Recreation Choices. *Journal of Leisure Research*. 16 (4): 295-310.

Summary, R. (1987). Estimation of Tourism Demand by Multivariable Regression Analysis. *Tourism Management*. 8 (4): 317-22.

Summers, Jane and Janet R. McColl-Kennedy (1998). Australia as a Holiday Destination: Young Americans' vs. Young Chinese Malaysians' Decision Making. *Journal of Hospitality and Leisure Marketing*. 5 (4): 33-55.

Sussmann, Silvia and Catherine Rashcovsky (1997). A Cross-Cultural Analysis of English and French Canadians' Vacation Travel Patterns. *International Journal of Hospitality Management*. 16 (2): 191-208.

Sutton, W. (1967). Travel and Understanding Notes on the Social Structure of Touring. *International Journal of Comparative Sociology*. 8 (2): 218-23.

Taft, R. (1977). "Coping with Unfamiliar Cultures," in *Studies in Cross-Cultural Psychology*. I, N. Warren, Ed. London: Academic Press.

Taylor, Gordon D. (1987). Foreign Pleasure Travel by American. *Journal of Travel Research*. XXV (3): 5-7.

Thanopoulos, John and A. H. Walle (1988). Ethnicity and Its Relevance to Marketing: The Case of Tourism. *Journal of Travel Research*. XXVI (3): 11-14.

The Chinese Culture Connection (1987). Chinese Values and the Search for Culture-Free Dimensions of Culture. *Journal of Cross-Cultural Psychology*. 18 (2): 143-64.

The Economist (1992). *The Overseas Chinese: A Driving Force*. 324 (July 18): 21-2, 24.

The Economist Intelligence Unit Limited (1995). *International Tourism Reports No. 1 "China"*: 19-37.

Thill, J. and I. Thomas (1987). Toward conceptualizing Trip-Chaining Behaviour: A Review. *Geographical Analysis*. 19: 1-17.

Tideswell, Carmen and Bill Faulkner (1999). Multidestinational Travel Patterns of International Visitors to Queensland. *Journal of Travel Research*. 37 (May): 364-74.

Tomlinson, John (1999). Globalization and Culture. Chichester: Polity Press.

Towner, J. (1996). *An Historical Geography of Recreation and Tourism in the Western World 1540-1940*. Chichester: Wiley.

Train, Kenneth E. (1998). Recreation Demand Models with Taste Differences Over People. *Land Economics*. 74 (2): 230-39.

Triandis (1977). *Interpersonal Behaviour*. Monterey, CA: Brooks/Cole.

Triandis, Harry C. (1972). *The Analysis of Subjective Culture*. New York, Chichester: Wiley-Interscience.

Triandis, Harry C. (1995). *Individualism and Collectivism*. Boulder, Colorado, London: Westview.

Triandis, Harry C. (1976a). Some Universals of Social Behaviour. *Personality and Social Psychology Bulletin*. 4: 1-17.

Triandis, Harry C. (1976b). "Approaches toward Minimizing Translation," in *Translation: Applications and Research*, R. W. Brislin, Ed. New York: Wiley/Hasted.

Triandis, Harry C. (1984). A Theoretical Framework for the More Efficient Construction of Culture Assimilators. *International Journal of Intercultural Relations*. 8 (3): 301-30.

Triandis, Harry C. (1988). "Collectivism vs. Individualism: A reconceptualisation of a Basic Concept in Cross-Cultural Psychology," in *Cross-Cultural Studies of Personality, Attitudes, and Cognition*, G. Vermaa and C. Bagley, Eds. London: Macmillan.

Triandis, Harry C. (1995). *Individualism and Collectivism*. Boulder, Colorado, London: Westview.

Tribe, John (2001). Research Paradigms and the Tourism Curriculum. *Journal of Travel Research*. 39 (May): 442-48.

Trompensaars, Fons (1993). *Riding the Waves of Culture*. London: Nicholas Bready.

Tuan, Yi Fu (1977). *Space and Place: The Perspective of Experience*. London: Edward Arnold.

Tunbridge, J. E. and G. J. Ashworth. (1996). *Dissonant Heritage: the Management of the Past as a Resource in Conflict*. Chichester: Wiley.

Turner, L. and J. Ash (1975). *The Golden Hordes: International Tourism and the Pleasure* Periphery. London: Constable.

Udy, Stanley H., Jr. (1975). "Cross-Cultural Analysis," in *Cultural and Social Anthropology: Introductory Readings in Ethnology*, Peter B. Hammond. 2nd ed. New York, London: Macmillan Publishing Co. Inc.

Ullman, Edward L. (1956). "The Role of Transportation and the Basis of Interactions," in *Man's Role in Changing the Face of the Earth*, Jr. et al. William L. Thomas, Ed. Chicago: The Chicago University Press.

Um, S. and J. L. Crompton (1990). Attitude Determinants in Pleasure Travel Destination Choice. *Annals of Tourism Research*. 17: 432-48.

Urry, J. (1990). *The Tourist Gaze: Leisure and Travel in Contemporary Societies*. London: Sage.

USTTA (1984a). *A Survey of Potential Vacation Travelers to the U.S. from Britain, West Germany, and France*, Conducted by the Gallup Organisation, for the USTTA. Washington, DC: United States Travel and Tourism Administration.

USTTA (1984b). *A Survey of Potential Vacation Travelers to the U.S. from Australia and Japan*, Conducted by the Gallup Organisation, for the USTTA. Washington, DC: United States Travel and Tourism Administration.

Usunier, J. C. (1996). *Marketing across Cultures* (2nd ed.). London, New York: Prentice Hall Europe.

Usunier, J (2000). "Cross-Cultural Market Research," in *Marketing across Cultures*. Harlow, Essex: Pearson.

Uysal, Muzaffer (1985). "Construction of a Model Which Investigates the Impact of Selected Variables on International Tourist Flows," in *The Battle for Market Share: Strategies in Research and Marketing* Vol. November: TTRA 16th Annual Conference.

Uysal, M. (1998). "The Determinants of Tourism Demand: A Theoretical Perspective," in *The Economic Geography of Tourism*, D. Ioannides and K. Debbage, Eds. London: Routledge.

Uysal, Muzaffer and J. L. Crompton (1984). Determinants of Demand for International Tourist Flows to Turkey. *Tourism Management*. 5 (4): 286-97.

Uysal, M. and J. L. Crompton (1985). An Overview of Approaches Used to Forecast Tourism Demand. *Journal of Travel Research.* 23 (4): 7-15.

Uysal, M. and C. Jurowski (1993). *An Empirical Testing of the Push and Pull Factors of Tourist's Motivations.* in Proceedings of 1993 CHRIE Conference. Chicago.

Uysal, Muzaffer and Joseph T. O'leary (1996). A Canonical Analysis of International Tourism Demand. *Annals of Tourism Research.* 13 (4): 651-55.

Uzzell, D. (1984). An Alternative Structuralist Approach to the Psychology of Tourism Marketing. *Annals of Tourism Research.* 11: 79-99.

Van der Goot, D. (1978). *Analyse van de Parkeerplaatskeuze,.* Dutch, Delft: Delft University of Technology, Transportation Research Laboratory.

Var, Turgut, Golam Mohammad, and Orhan Icoz (1990). A Tourism Demand Model. *Annals of Tourism Research.* 17: 622-26.

Vijver, Fons van de and Kwok Leung (1997). *Methods and Data Analysis for Cross-Cultural Research.* Thousand Oaks, London, New Delhi: SAGE Publications.

Viña, Lynda de la and Jamie Ford (2001). Logistic Regression Analysis of Cruise Vacation Market Potential: Demographic and Trip Attribute Perception Factors. *Journal of Travel Research.* 39 (May): 406-10.

Vygotsky, L. S. (1978). *Mind in Society.* Cambridge, MA: Harvard University Press.

Waitt, G. (1997). Selling Paradise and Adventure: Representations of Landscape in the Tourist Advertising of Australia. *Australian Geographical Studies*, 35(1): 47-60.

Waitt, G. and P. M. McGuirk. (1997). Marking Time: Tourism and heritage Representation at Millers Point, Sydney. *Australian Geographer*, 27(1): 11-29.

Wall, Geoffrey, D. Dudycha, and J. Hutchinson. (1985). Point Pattern Analysis of Accommodation in Toronto. *Annals of Tourism Research*, 12(4): 603-18.

Wall, G. and J. Marsh, editors. (1982). *Recreational Land Use, Perspectives on its Evolution in Canada.* Ottawa: Carleton University Press.

Walle, A.H. (1997). Quantitative Versus Qualitative Tourism Research. *Annals of Tourism Research.* 24 (3): 524-36.

Walmsley, D. J. and J. M. Jenkins (1992a). Cognitive Distance: A Neglected Issue in Travel Behaviour. *Journal of Travel Research.* 31 (1): 24-29.

Walmsley, D. J. and J. M. Jenkins (1992b). Tourism Cognitive Mapping of Unfamiliar Environments. *Annals of Tourism Research.* 19 (3): 268-86.

Walmsley, D. J. and J. M. Jenkins (1999). "Cognitive Distance: A Neglected Issue in Travel Behaviour," in *Consumer Behaviour in Travel and Tourism*, Abraham Pizam and Yoel Mansfeld, Eds. New York: The Haworth Hospitality Press.

Walmesley, D. J. and G. J. Lewis 1993 People and Environment: Behavioural Approaches in Human Geography (2nd ed.). Harlow: Longman.

Wang, Y. and P. J. Sheldon (1995). The Sleeping Dragon Awakes: The Outbound Chinese Travel Market. *Journal of Travel & Tourism Marketing*. 4 (4): 41-54.

Warszyńska, J. and A. Jackowski (1986). Studies on the Geography of Tourism. *Annals of Tourism Research*. 13: 655-58.

Warwick, D. P. and C. A. Lininger (1975). *The Sample Survey: Theory and Practice*. New York: McGraw-Hill.

Watson, A. E. , J. W. Roggenbuck, and D. R. Williams (1991). The Influence of Past Experience on Wilderness Choice. *Journal of Leisure Research*. 23 (1): 21-26.

Wayne, Scott (1999). The Tourism Engine. *The China Business Review*. Nov. - Dec.: 38-41.

Weber, K. (1997). The Assessment of Tourist Satisfaction Using the Expectancy disconfirmation Theory: A Study of the German Travel Market in Australia. *Pacific Tourism Review*. 1 (2): 35-45.

Wee, Chow Hou (1986). Temporal and Regional Differences in Image of a Tourist Destination. *Service Industries Journal*. 6 (1).

Wei, Ying Qi, Xia Ming Liu, David Parker, and Kirit Vaidya (1999). The Regional Distribution of Foreign Direct Investment in China. *Regional Studies*. 33 (9): 857-67.

Wen, G. Y. (1985). The Definition of Overseas Chinese and the Stage of Overseas Chinese History. *Guangzhou Study*. 2: 34-35.

Wen, Jie (1998). Evaluation of Tourism and Tourist Resources in China: Existing Methods and Their Limitations. *International Journal of Social Economics*. 25 (2/3/4): 467-85.

Wen, J. and C. Tisdell (1996). Spatial Distribution of Tourism in China: Economic and Other Influences. *Tourism Economics*.

Werner, O and D. T. Campbell (1970). "Translating, Working Through Interpreters and the Problems of Decentering," in *Handbook of Method in Cultural Anthropology*, R. Naroll and R. Cohen, Eds.: Natural History Press.

Wertsch, J. V. (1991). *Voices of the Mind: A Sociocultural Approach to Mediated Action*. London: Harvester Wheatsheaf.

Whiting, B. B. (1976). "The Problem of the Packaged Variable," in *The Developing Individual in a Changing World* (Vol. 1). K. F. Riegel and J. A. Meacham, Eds. Hawthorne, NY: Aldine.

Whorf, B. L. (1956). *Language, Thought and Reality*. Boston: M.I.T. Press; New York: Wiley.

Williams, Anthony V. and Wilbur Zelinsky (1970). On Some Patterns in Intentional Tourist Flows. *Economic Geography*. 46 (4): 549-67.

Williams, Stephen (1998). *Tourism Geography* (1st ed.): Routledge.

Wines, William A. and Nancy K. Napier (1992). Toward an Understanding of Cross-Cultural Ethics: A Tentative Model. *Journal of Business Ethics*. 11: 831-41.

Witt, C. A. and S. F. Witt (1990). Appraising An Econometric Forecasting Model. *Journal of Travel Research*. Winter: 30-34.

Witt, F. S. and C. A. Witt (1992). *Modeling and Forecasting Tourism*. London: Academic Press.

Witt, F. S. and C. A. Witt (1995). Forecasting Tourism Demand: A Review of Empirical Research. *International Journal of Forecasting*. 41 (Feb.): 212-35.

Witt, Christine A. and Peter L. Wright (1992). "Tourist Motivation: Life after Maslow," in *Choice and Demand in Tourism*, Peter Johnson and Barry Thomas, Eds. London: Mansell Publishing Limited.
Wolfe, R. J. (1951). Summer Cottages in Ontario. *Economic Geography*. 27 (1): 10-32.

Wolfe, R. J. (1970). Discussion of Vacation Homes, Environmental Preferences and Spatial Behaviour. *Journal of Leisure Research*, 2(1): 85-7.

Wolfe, R. J. (1972). The Inertia Model. *Journal of Leisure Research*. 4: 73.

Woodside, Arch G. and Steven Lysonski (1989). A General Model of Traveler Destination Choice. *Journal of Travel Research*. Spring: 8-14.

Woodside, Arch G., S. Lysonski, and A. Carr (1988). Consumer Decision making and Competitive marketing Strategies: Applications for Tourism Planning. *Journal of Travel Research*. 26 (Winter): 2-7.

Woodside, A. G. and R. MacDonald Eds. (1994). *General Systems Framework of Customer Choice Processes for Tourism Services*. Thaur, Austria: Kulturverlag.

Wright, Lorna L. (1996). "Qualitative International Management Research," in *Handbook for International Management Research*, Betty Jane Punnett and Oded Shenkar, Eds.: Blackwell.

WTO (1991). "*International Tourism Statistics*,". Madrid, World Tourism Organization.

WTO (1998). *Executive Summary. Tourism 2020 Vision - A New Forecast from the WTO*. World Tourism Organisation: Spain.

WTO (2000). *Tourism Highlights 2000*, World Tourism Organisation: Spain.

WTO (2002). *Tourism Highlights 2002*, World Tourism Organisation: Spain.

WTO (2003). www.world-tourism.org. World Tourism Organisation. Spain

Yai, Tetsuo (1989). Disaggregate Behavioural Models and Their Applications in Japan. *Transportation Researches A*. 23 (1): 45-51.

Yan, Xiao Pei (1990). The Spatial Dimension of Chinese Urbanization. *GeoJournal*. 21 (1/2): 13-23.

Yarmy, William M. (1992). Growth Potential of Korea's Outbound Tourist Market to United States Travel and Tourism. *Journal of Travel & Tourism Marketing*. 1 (1): 89-94.

Yiannakis, A., S. Leivadi, and Y. Apostolopoulos (1991). Some Cross-Cultural Patterns in Tourist Role Preference: A Study of Greek and American Tourist Behaviours. *World Leisure and Recreation*. 33 (2): 33-37.

Yu, Lawrence (1992). Emerging Markets for China's Tourism Industry. *Journal of Travel Research*. 31 (1): 10-3.

Yuan, Sue and Cary McDonald (1990). Motivational Determinates of International Pleasure Time. *Journal of Travel Research*. Summer: 42-44.

Zhang, Han Qin and Ap John King Chong (1999). An Analysis of Tourism Policy Development in Modern China. *Tourism Management*. 20: 471-85.

Zhang, Yong Wei (1995). "An Assessment of China's Tourism Resources," in *Tourism in China: Geographic, Political, and Economic Perspectives*, Alan A. Lew and Lawrence Yu, Eds.: Westview Press.
Zins, Andreas H. (1998). Leisure Traveler Choice Models of Theme Hotels Using Psychographics. *Journal of Travel Research*. 36 (Spring): 3-15.

Zurick, D. N. (1992). Adventure Travel and Sustainable Tourism in the Peripheral Economy of Nepal. *Annals of the Association of American Geographers*. 82 (4): 608-28.

**Internet sources:**

http://www.chinapage.com/map/map.html

http://www.sinopolis.com/library/MAP/china_facts.htm

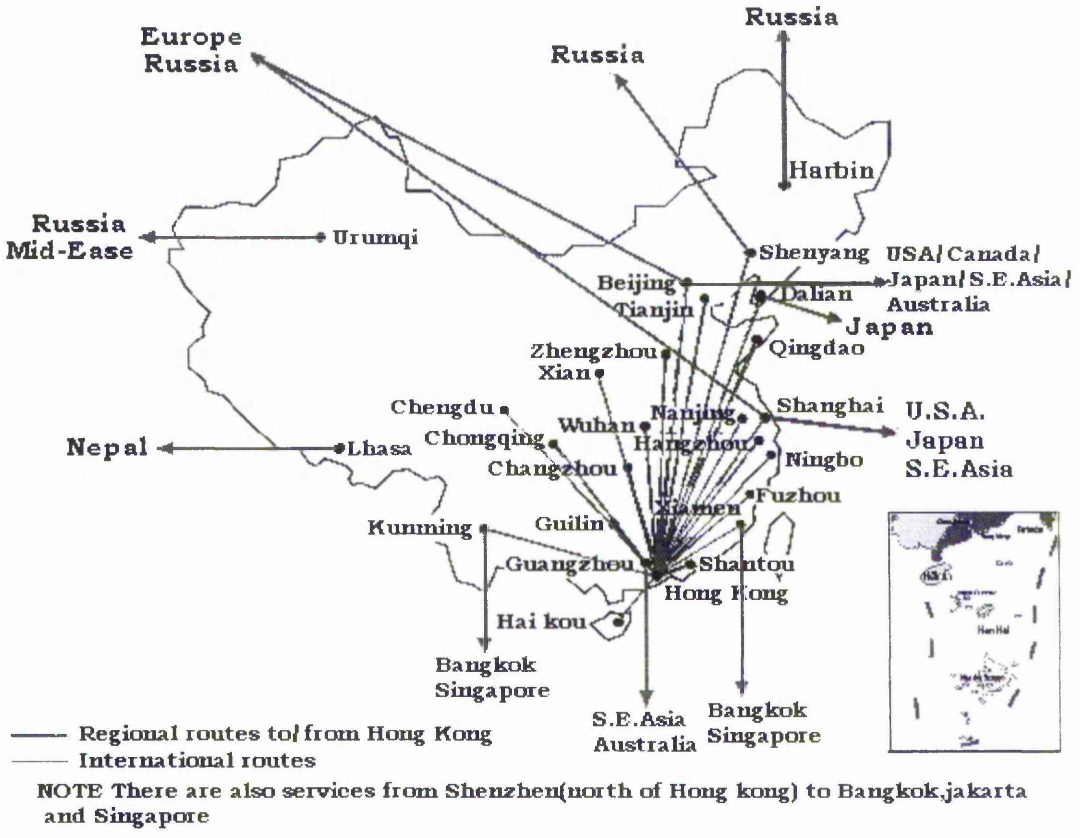
http://www.solidsoftware.com.au/Yangtze/map1.html

http://www.traveljournals.net/countries/

# APPENDIX 1

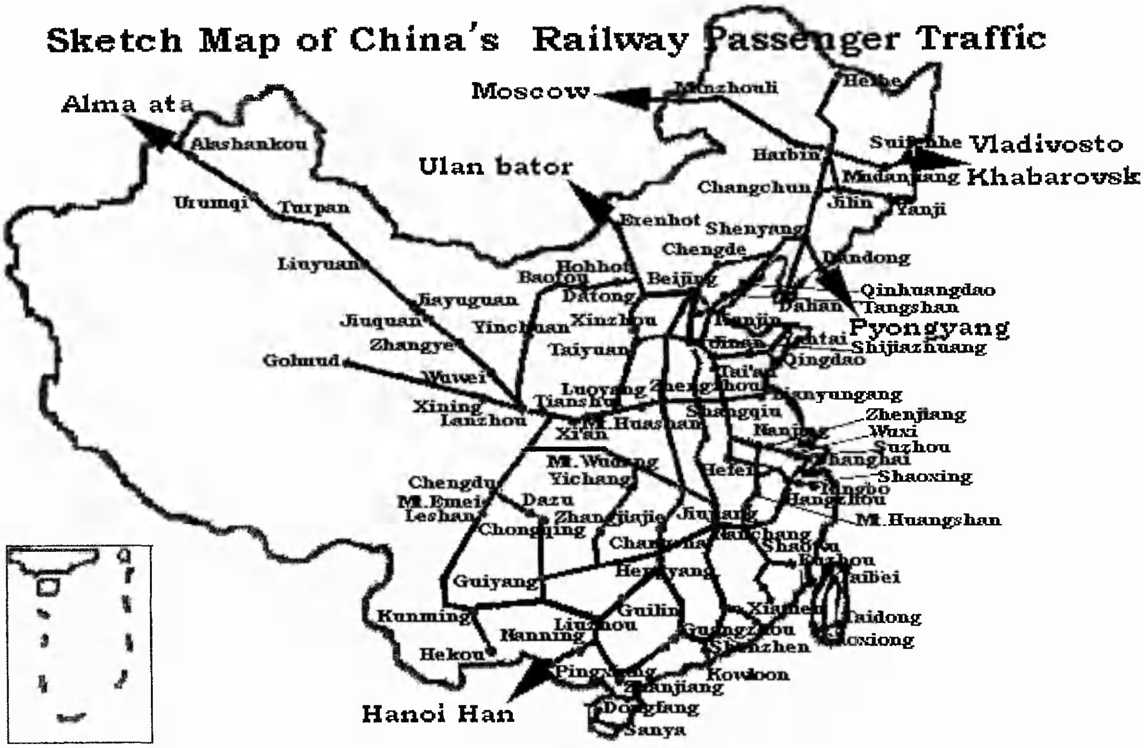
## Illustrated travel routes by air, rail and bus in and from China

## A. TRAVEL ROUTE BY AIR TO AND WITHIN CHINA



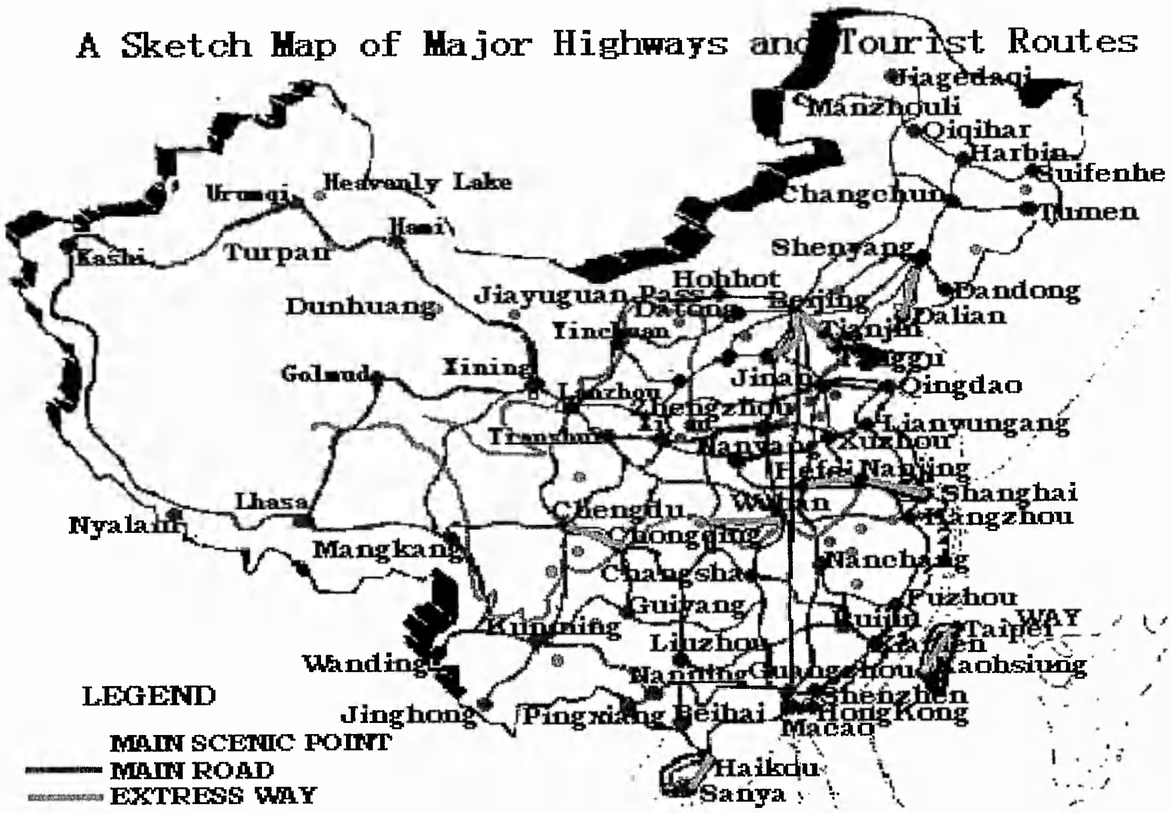

Source: http://www.cnta.com/HTMLE/travel/AIRLINE.html

## B. TRAVEL ROUTE BY RAILWAY IN CHINA




Source: http://www.cnta.com/HTMLE/travel/AIRLINE.html

## C. TRAVEL ROUTE BY BUS IN CHINA




Source: http://www.cnta.com/HTMLE/travel/AIRLINE.html

## D. INTERNATIONAL AIR ROUTES

**International Air Routes**


Source: CNTA Tourist Map (2003b).

# APPENDIX 2

# Correspondence analysis of destinations versus places of origin

**Correspondence Table**

| DESTINA | COUNTRY | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | HK/MC | TW | JP | S K. | MAL | PHI | SING | THAI | USA | CAN | UK | FRA | GER | AUS | RUS | Active Margin |
| 1 | 31 | 31 | 29 | 22 | 29 | 30 | 30 | 29 | 30 | 30 | 30 | 29 | 27 | 29 | 19 | 425 |
| 2 | 27 | 23 | 31 | 31 | 30 | 26 | 29 | 30 | 31 | 31 | 31 | 31 | 31 | 31 | 28 | 441 |
| 3 | 24 | 24 | 30 | 28 | 26 | 31 | 28 | 26 | 29 | 29 | 25 | 30 | 30 | 30 | 21 | 411 |
| 4 | 30 | 30 | 18 | 12 | 24 | 28 | 26 | 17 | 13 | 12 | 7 | 8 | 6 | 12 | 9 | 252 |
| 5 | 28 | 28 | 28 | 25 | 31 | 21 | 27 | 25 | 26 | 26 | 27 | 27 | 26 | 28 | 20 | 393 |
| 6 | 26 | 29 | 22 | 24 | 21 | 19 | 13 | 24 | 23 | 20 | 24 | 28 | 25 | 24 | 8 | 330 |
| 7 | 25 | 27 | 25 | 26 | 25 | 27 | 25 | 27 | 25 | 27 | 23 | 24 | 23 | 27 | 23 | 379 |
| 8 | 21 | 26 | 23 | 15 | 28 | 23 | 31 | 31 | 22 | 22 | 21 | 23 | 21 | 25 | 7 | 339 |
| 9 | 23 | 20 | 24 | 29 | 20 | 29 | 22 | 13 | 21 | 23 | 18 | 15 | 17 | 21 | 24 | 319 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 25 | 29 | 26 | 28 | 26 | 15 | 176 |
| 11 | 16 | 17 | 27 | 30 | 15 | 18 | 17 | 18 | 14 | 17 | 13 | 11 | 13 | 16 | 25 | 267 |
| 12 | 11 | 5 | 10 | 19 | 8 | 5 | 5 | 7 | 4 | 6 | 6 | 10 | 10 | 3 | 31 | 140 |
| 13 | 29 | 16 | 9 | 17 | 18 | 12 | 19 | 19 | 6 | 8 | 5 | 4 | 8 | 8 | 16 | 194 |
| 14 | 15 | 25 | 15 | 11 | 22 | 15 | 21 | 28 | 19 | 18 | 19 | 16 | 16 | 17 | 11 | 268 |
| 15 | 22 | 22 | 8 | 16 | 16 | 17 | 20 | 20 | 18 | 24 | 15 | 7 | 9 | 20 | 14 | 248 |
| 16 | 13 | 13 | 21 | 7 | 9 | 10 | 9 | 15 | 28 | 28 | 28 | 25 | 29 | 22 | 13 | 270 |
| 17 | 12 | 8 | 17 | 20 | 27 | 25 | 24 | 23 | 15 | 19 | 26 | 22 | 20 | 23 | 26 | 307 |
| 18 | 2 | 2 | 6 | 4 | 3 | 3 | 2 | 3 | 3 | 3 | 4 | 3 | 2 | 6 | 30 | 76 |
| 19 | 8 | 6 | 11 | 21 | 12 | 11 | 11 | 4 | 11 | 11 | 8 | 9 | 5 | 13 | 22 | 163 |
| 20 | 19 | 19 | 12 | 13 | 19 | 24 | 16 | 16 | 12 | 21 | 16 | 21 | 18 | 15 | 17 | 258 |
| 21 | 14 | 21 | 14 | 18 | 23 | 14 | 23 | 22 | 16 | 13 | 10 | 14 | 12 | 19 | 12 | 245 |
| 22 | 10 | 12 | 13 | 14 | 10 | 9 | 7 | 11 | 24 | 15 | 22 | 20 | 24 | 14 | 4 | 209 |
| 23 | 6 | 10 | 19 | 8 | 11 | 8 | 12 | 8 | 9 | 9 | 11 | 13 | 14 | 11 | 29 | 178 |
| 24 | 5 | 7 | 7 | 27 | 7 | 4 | 10 | 6 | 5 | 4 | 3 | 2 | 11 | 4 | 27 | 129 |
| 25 | 7 | 14 | 20 | 10 | 14 | 13 | 18 | 9 | 17 | 14 | 17 | 19 | 19 | 10 | 5 | 206 |
| 26 | 17 | 15 | 4 | 5 | 17 | 22 | 15 | 21 | 7 | 7 | 14 | 12 | 4 | 7 | 3 | 170 |
| 27 | 9 | 9 | 16 | 9 | 6 | 20 | 8 | 12 | 8 | 10 | 12 | 18 | 15 | 9 | 18 | 179 |
| 28 | 20 | 11 | 3 | 3 | 4 | 6 | 4 | 14 | 10 | 5 | 9 | 6 | 7 | 5 | 6 | 113 |
| 29 | 3 | 3 | 5 | 6 | 5 | 7 | 6 | 5 | 20 | 16 | 20 | 17 | 22 | 18 | 10 | 163 |
| 30 | 4 | 4 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 5 | 3 | 2 | 2 | 39 |
| 31 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 15 |
| Active Margin | 478 | 478 | 470 | 473 | 483 | 480 | 482 | 486 | 496 | 496 | 496 | 496 | 496 | 486 | 496 | 7302 |

**Summary**

| Dimension | Singular Value | Inertia | Chi Square | Sig. | Proportion of Inertia | | Confidence Singular Value | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Accounted for | Cumulative | Standard Deviation | Correlation 2 |
| 1 | .250 | .063 | | | .387 | .387 | .010 | .032 |
| 2 | .234 | .055 | | | .339 | .725 | .016 | |
| 3 | .107 | .011 | | | .071 | .796 | | |
| 4 | .096 | .009 | | | .057 | .853 | | |
| 5 | .082 | .007 | | | .041 | .895 | | |
| 6 | .069 | .005 | | | .029 | .924 | | |
| 7 | .068 | .005 | | | .029 | .952 | | |
| 8 | .047 | .002 | | | .014 | .966 | | |
| 9 | .040 | .002 | | | .010 | .976 | | |
| 10 | .038 | .001 | | | .009 | .985 | | |
| 11 | .033 | .001 | | | .007 | .992 | | |
| 12 | .027 | .001 | | | .004 | .996 | | |
| 13 | .020 | .000 | | | .002 | .999 | | |
| 14 | .015 | .000 | | | .001 | 1.000 | | |
| Total | | .162 | 1182.503 | .000[a] | 1.000 | 1.000 | | |

a. 420 degrees of freedom

**Overview Row Points[a]**

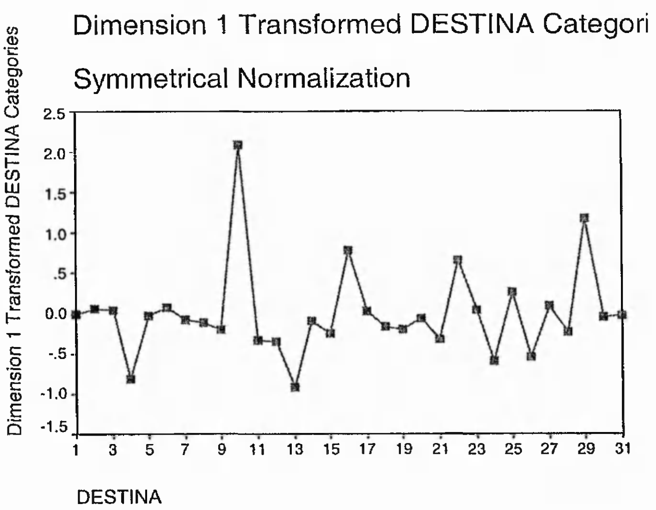
| DESTINA | Mass | Score in Dimension | | Inertia | Contribution | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Of Point to Inertia of Dimension | | Of Dimension to Inertia of Point | | |
| | | 1 | 2 | | 1 | 2 | 1 | 2 | Total |
| 1 | .058 | -.010 | .230 | .001 | .000 | .013 | .002 | .890 | .892 |
| 2 | .060 | .063 | -.016 | .000 | .001 | .000 | .177 | .011 | .188 |
| 3 | .056 | .048 | .082 | .001 | .001 | .002 | .053 | .146 | .199 |
| 4 | .035 | -.815 | .488 | .009 | .092 | .035 | .637 | .214 | .851 |
| 5 | .054 | -.022 | .128 | .001 | .000 | .004 | .010 | .335 | .345 |
| 6 | .045 | .075 | .314 | .003 | .001 | .019 | .024 | .394 | .418 |
| 7 | .052 | -.076 | .059 | .000 | .001 | .001 | .313 | .178 | .491 |
| 8 | .046 | -.102 | .456 | .003 | .002 | .041 | .039 | .729 | .768 |
| 9 | .044 | -.196 | -.140 | .002 | .007 | .004 | .211 | .100 | .311 |
| 10 | .024 | 2.093 | -.254 | .028 | .422 | .007 | .941 | .013 | .954 |
| 11 | .037 | -.327 | -.363 | .003 | .016 | .021 | .286 | .327 | .613 |
| 12 | .019 | -.342 | -1.400 | .011 | .009 | .161 | .053 | .838 | .891 |
| 13 | .027 | -.921 | .028 | .007 | .090 | .000 | .756 | .001 | .757 |
| 14 | .037 | -.095 | .356 | .002 | .001 | .020 | .035 | .453 | .488 |
| 15 | .034 | -.243 | .215 | .003 | .008 | .007 | .157 | .114 | .271 |
| 16 | .037 | .784 | .120 | .007 | .091 | .002 | .860 | .019 | .879 |
| 17 | .042 | .032 | -.160 | .003 | .000 | .005 | .004 | .092 | .096 |
| 18 | .010 | -.163 | -2.476 | .018 | .001 | .273 | .004 | .822 | .826 |
| 19 | .022 | -.197 | -.746 | .005 | .003 | .053 | .048 | .639 | .687 |
| 20 | .035 | -.060 | .103 | .001 | .001 | .002 | .024 | .066 | .091 |
| 21 | .034 | -.314 | .191 | .002 | .013 | .005 | .355 | .122 | .477 |
| 22 | .029 | .665 | .248 | .005 | .051 | .008 | .652 | .085 | .737 |
| 23 | .024 | .053 | -.763 | .005 | .000 | .061 | .003 | .651 | .654 |
| 24 | .018 | -.593 | -1.521 | .014 | .025 | .175 | .112 | .689 | .801 |
| 25 | .028 | .275 | .274 | .003 | .009 | .009 | .175 | .162 | .338 |
| 26 | .023 | -.537 | .735 | .007 | .027 | .054 | .235 | .411 | .646 |
| 27 | .025 | .092 | -.262 | .003 | .001 | .007 | .017 | .128 | .145 |
| 28 | .015 | -.234 | .458 | .006 | .003 | .014 | .038 | .136 | .173 |
| 29 | .022 | 1.186 | -.070 | .008 | .126 | .000 | .949 | .003 | .952 |
| 30 | .005 | -.033 | .221 | .001 | .000 | .001 | .002 | .085 | .087 |
| 31 | .002 | -.031 | .006 | .000 | .000 | .000 | .647 | .023 | .670 |
| Active Total | 1.000 | | | .162 | 1.000 | 1.000 | | | |

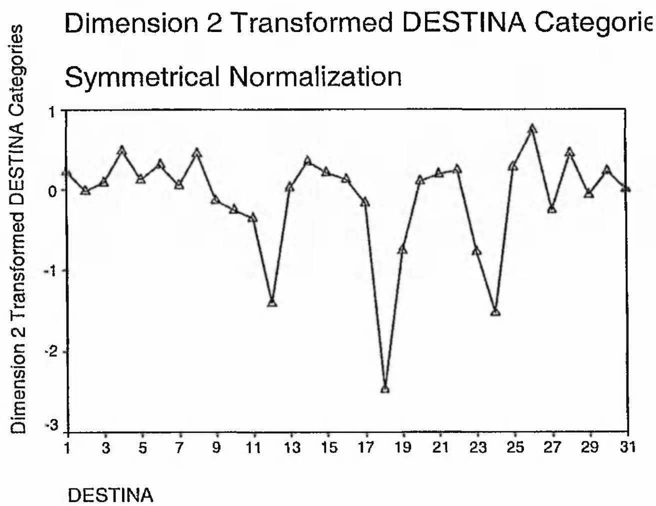
a. Symmetrical normalization

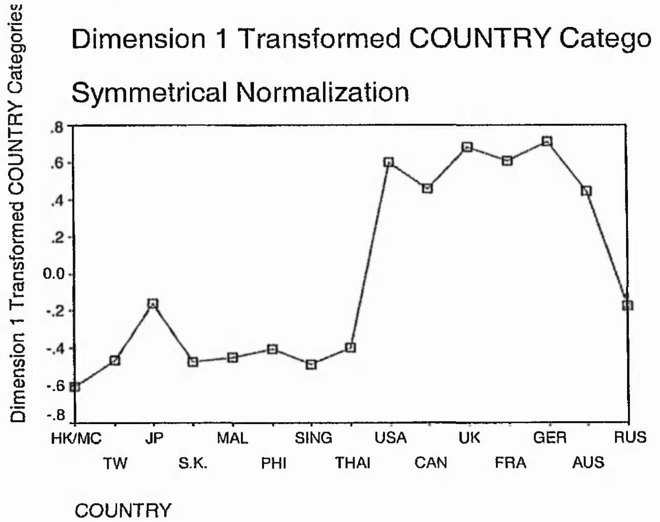
**Overview Column Points[a]**

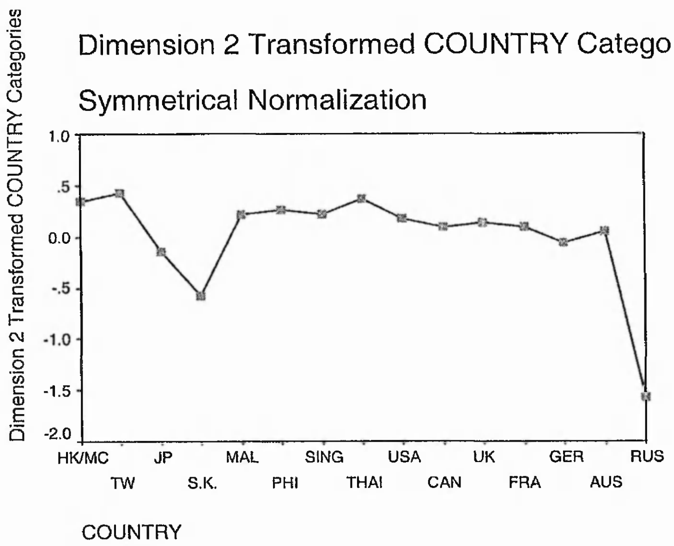
| COUNTRY | Mass | Score in Dimension | | Inertia | Contribution | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Of Point to Inertia of Dimension | | Of Dimension to Inertia of Point | | |
| | | 1 | 2 | | 1 | 2 | 1 | 2 | Total |
| HK/MC | .065 | -.603 | .340 | .013 | .095 | .032 | .454 | .135 | .589 |
| TW | .065 | -.468 | .423 | .008 | .057 | .050 | .429 | .328 | .758 |
| JP | .064 | -.163 | -.141 | .006 | .007 | .005 | .066 | .046 | .113 |
| S.K. | .065 | -.471 | -.572 | .016 | .057 | .090 | .230 | .318 | .548 |
| MAL | .066 | -.453 | .212 | .006 | .054 | .013 | .567 | .116 | .683 |
| PHI | .066 | -.406 | .259 | .008 | .043 | .019 | .335 | .128 | .463 |
| SING | .066 | -.487 | .213 | .007 | .063 | .013 | .556 | .099 | .655 |
| THAI | .067 | -.398 | .369 | .008 | .042 | .039 | .333 | .268 | .601 |
| USA | .068 | .601 | .171 | .008 | .098 | .009 | .763 | .058 | .821 |
| CAN | .068 | .455 | .100 | .005 | .056 | .003 | .655 | .029 | .684 |
| UK | .068 | .684 | .131 | .009 | .127 | .005 | .865 | .030 | .895 |
| FRA | .068 | .609 | .098 | .009 | .101 | .003 | .730 | .018 | .748 |
| GER | .068 | .712 | -.054 | .011 | .137 | .001 | .816 | .004 | .821 |
| AUS | .068 | .444 | .045 | .005 | .053 | .001 | .610 | .006 | .616 |
| RUS | .068 | -.172 | -1.573 | .042 | .008 | .718 | .012 | .938 | .950 |
| Active Total | 1.000 | | | .162 | 1.000 | 1.000 | | | |

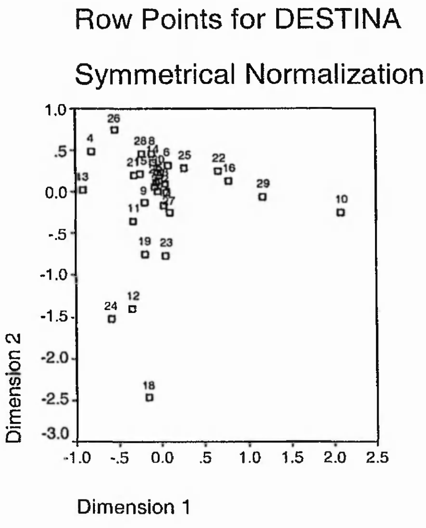
a. Symmetrical normalization

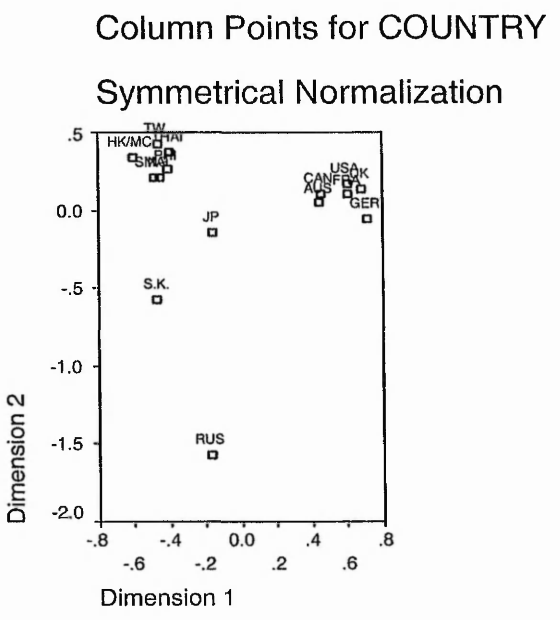

Dimension 1 Transformed DESTINA Categori
Symmetrical Normalization
Dimension 1 Transformed DESTINA Categories
2.5
2.0
1.5
1.0
.5
0.0
-.5
-1.0
-1.5
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
DESTINA


Dimension 2 Transformed DESTINA Categorie
Symmetrical Normalization
Dimension 2 Transformed DESTINA Categories
1
0
-1
-2
-3
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
DESTINA


Dimension 1 Transformed COUNTRY Catego
Symmetrical Normalization
Dimension 1 Transformed COUNTRY Categories
.8
.6
.4
.2
0.0
-.2
-.4
-.6
-.8
HK/MC JP MAL SING USA UK GER RUS
TW S.K. PHI THAI CAN FRA AUS
COUNTRY


Dimension 2 Transformed COUNTRY Catego
Symmetrical Normalization
Dimension 2 Transformed COUNTRY Categories
1.0
.5
0.0
-.5
-1.0
-1.5
-2.0
HK/MC
TW
JP
S.K.
MAL
PHI
SING
THAI
USA
CAN
UK
FRA
GER
AUS
RUS
COUNTRY


Row Points for DESTINA
Symmetrical Normalization
Dimension 2
Dimension 1


Column Points for COUNTRY
Symmetrical Normalization
TW
HK/MC
JP
S.K.
RUS
GER
Dimension 2
Dimension 1

# APPENDIX 3

# Questionnaire for the pilot study

"The Spatial Distribution of International Tourists in China"

Dear Sir/Madam, my name is Jiao Lan. I am a research student in Nottingham Business School, Nottingham Trent University, UK. I am conducting a research project relating to international tourists behaviour in China.

Tourists are attracted to different regions/destinations within a country. Their travel patterns to the destinations are also different. This survey seeks to identify the specific places that appeal to you most within China, and to ask how and why you travel to these destinations. Please answer all the questions below and return the complete form **before** leaving China using the attached addressed and stamped envelope; or return it personally to the questionnaire distributor. Thank you very much for your help!

---

In the first part of the survey you will be asked to respond to several questions about your preferred trip pattern, destination choice and style of vacationing.

1. What is your main travelling destination in China ______________ ?

2. What is the main purpose of your visit to China?
   - To visit family/relatives/friends ☐
   - For business/conference purpose ☐
   - For holiday/leisure purpose ☐
   - Others (Please specify) ______________

3. What is your main motivation to China?
   - Sightseeing/leisure ☐
   - Understanding culture ☐
   - Seeking family root ☐
   - Business and trade ☐
   - Receiving education ☐
   - Shopping ☐
   - Doing sports ☐
   - Others (Please specify) ______________

4. How did you arrive in China?
   - By air ☐
   - By rail ☐
   - By sea ☐
   - By motor ☐
   - On foot ☐
   - Others (Please specify) ______________

5. How many times have you been to China **previously** ______________ ?

6. What is the type of the group you are travelling with?
   - With a package tour ☐
   - Only with family members ☐
   - Only with some friends ☐
   - You travel alone ☐

7. Please draw your travel route on the following map.


8. Please indicate how long you stay in each place.

| | Place of visit | Duration of stay |
|---|---|---|
| Entry place in China | ________ | ________ |
| Place ❶ | ________ | ________ |
| Place ❷ | ________ | ________ |
| Place ❸ | ________ | ________ |
| Place ❹ | ________ | ________ |
| Place ❺ | ________ | ________ |
| Place ❻ | ________ | ________ |
| Place ❼ | ________ | ________ |
| Others (please specify) | ________ | ________ |
| Exit place from China | ________ | ________ |

**In this section, you will be asked to describe some characteristics of China and Chinese culture, and be asked to indicate your understanding of the local culture by ticking A number along a scale that best reflects your preferences and attitudes. The meanings of these numbers are specified in this following table:**

| Very well/much | Well/much | Medium/Neutral | Not well/Not much | Not al all |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

9. How well can you speak any type(s) of Chinese language or dialect? 1 2 3 4 5
   Please specify ______________________

10. How much do you know about Chinese culture? 1 2 3 4 5

11. How similar is your culture to Chinese culture? 1 2 3 4 5

12. How do you think your own culture is interrelated with Chinese culture? 1 2 3 4 5

13. How do you rate the attractiveness of the main destination (your answer of question 1) you visit in China? 1 2 3 4 5

14. How do you agree with the following statements:
    a. Respect for authority is very important 1 2 3 4 5
    b. Protecting "face" is very important. 1 2 3 4 5
    c. Maintaining harmonious relationship is very important. 1 2 3 4 5
    d. Adhering to social norms and obligations are very important. 1 2 3 4 5

In this section, you will be asked for some information about yourself.

15. Which country/region are you from
    - America ☐
    - Japan ☐
    - the UK ☐
    - Korea ☐
    - Russia ☐
    - Hong Kong ☐
    - Taiwan ☐
    - Southeast Asia ☐
    - Others (please specify) ______________

16. Your gender?
    - Female ☐
    - Male ☐

17. Do you think you are ethnic Chinese?
    - Yes ☐
    - No ☐
    - Please specify ______________

18. Do you have any ancestors or relatives who are/were Chinese?
    - Yes ☐
    - No ☐
    - Please specify ________________

19. How many days you are travelling in China _____________?

20. How much do you think you spend **<u>all together</u>** for your trip (including food, accommodation, transportation and shopping etc.)?
    - a. Below US$500.- ☐
    - b. US$500.- to US$800.- ☐
    - c. US$800.- to US$1,000.- ☐
    - d. Above US$1,000.- ☐
    - e. Others (Please specify) ______________

21. What is your final level of education?
    - a. Below high school ☐
    - b. High school ☐
    - c. Undergraduate/College ☐
    - d. Postgraduate ☐
    - e. Other (Please specify) ______________

22. Which of the following figures best describes your **<u>annual</u>** income level?
    - a. Below US$800,0.- ☐
    - b. US$800,0.- to US$15,000.- ☐
    - c. US$15,000.- to US$20,000.- ☐
    - d. US$20,000.- to US$25,000.- ☐
    - e. US$25,000.- to US$30,000.- ☐
    - f. US$30,000.- to US$35,000.- ☐
    - g. Above US$35,000.- ☐

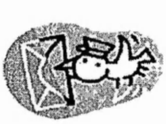
23. Which of the below best describes your age?
    - Below 24 ☐
    - 25-44 ☐
    - 45-65 ☐
    - Above 65 ☐

24. Are you
    - Single ☐
    - Married ☐

25. If you are interested in the research result or other tourism information of China, please leave your address: ________________________________________

26. Email address: ________________________________________

---



Thank you for your cooperation!
Please use the enclosed envelope return the questionnaire to:
**Jiao Lan**
Room Number 15, Unit 2, Building 2,
Tuanjiehu Nanli, Chaoyang District, Beijing China, 100026
Email: Yan.Jiao@ntu.ac.uk

---

# APPENDIX 4

# Questionnaire for the field work

## A. ENGLISH VERSION

### "The Spatial Distribution of International Tourists in China"

Dear Sir/Madam, my name is Jiao Lan. I am a research student in Nottingham Business School, Nottingham Trent University, UK. I am conducting a research project relating to international tourists behaviour in China.

Tourists are attracted to different regions/destinations within a country. Their travel patterns to the destinations are also different. This survey seeks to identify the specific places that appeal to you most within China, and to ask how and why you travel to these destinations. Please answer all the questions below and return the complete form **BEFORE** leaving China using the attached addressed and stamped envelope; or return it personally to the questionnaire distributor. Thank you very much for your help!

---

In the first part of the survey you will be asked to respond to several questions about your preferred trip pattern, destination choice and style of vacationing.

1. What is your main travelling destination in China ______________ ?

2. What is the main purpose of your visit to China?
   1) To visit family/relatives/friends ☐
   2) For business/conference purpose ☐
   3) For holiday/leisure purpose ☐
   4) Others (Please specify) ______________

3. What is your main motivation to China? You can tick more than one answer.
   1) Sightseeing/leisure ☐
   2) Understanding culture ☐
   3) Seeking family root/Visiting family or friends ☐
   4) Business and trade ☐
   5) Receiving education ☐
   6) Shopping ☐
   7) Doing sports ☐
   8) Others (Please specify) ______________

4. How did you arrive in China? What kind of transport did you use?
   1) By air ☐
   2) By rail ☐
   3) By sea ☐
   4) By motor ☐
   5) On foot ☐

5. How many times have you been to China **PREVIOUSLY** ______________ ?

6. What is the type of the group you are travelling with?
   1) With a package tour ☐
   2) Only with family members ☐
   3) Only with some friends ☐
   4) You travel alone ☐

7. Please draw your travel route on the following map.


8. Please indicate how long you plan to stay/stayed in each place according to the order of the places which you plan to visit/visited.

| | Place of visit | Duration of stay |
|---|---|---|
| Entry place in China (city/province) | ____________ | ____________ |
| Place ❶ | ____________ | ____________ |
| Place ❷ | ____________ | ____________ |
| Place ❸ | ____________ | ____________ |
| Place ❹ | ____________ | ____________ |
| Place ❺ | ____________ | ____________ |
| Others (please specify) | ____________ | ____________ |
| Exit place from China (city/province) | ____________ | ____________ |

2 **In this section, you will be asked to describe some characteristics of China and Chinese culture, and be asked to indicate your understanding of the local culture by ticking A number along a scale that best reflects your preferences and attitudes. The meanings of these numbers are specified in this following table:**

| Very well/much | Well/much | Medium/Neutral | Not well/Not much | Not |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

| | | | | | |
|---|---|---|---|---|---|
| 9. How well can you speak any type(s) of Chinese language or dialect? Please specify ____________________ | 1 | 2 | 3 | 4 | 5 |
| 10. How much do you know about Chinese culture? | 1 | 2 | 3 | 4 | 5 |
| 11. How similar is your culture to Chinese culture? | 1 | 2 | 3 | 4 | 5 |
| 12. How do you think your own culture is interrelated with Chinese culture? | 1 | 2 | 3 | 4 | 5 |
| 13. How do you rate the attractiveness of the main destination (i.e. your answer to question 1) you visit in China? | 1 | 2 | 3 | 4 | 5 |
| 14. How do you agree with the following statements: | | | | | |
| a. Respect for authority is very important | 1 | 2 | 3 | 4 | 5 |
| b. Protecting "face" (i.e. self-esteem) is very important. | 1 | 2 | 3 | 4 | 5 |
| c. Maintaining a harmonious relationship is very important. | 1 | 2 | 3 | 4 | 5 |
| d. Adhering to social norms and obligations is very important. | 1 | 2 | 3 | 4 | 5 |
| 15. How do you rate the distance (in mile) between your country of origin and the main destination (i.e. your answer to question 1) which you plan to visit/visited in China? (1=very far, 2=far, 3=medium, 4=not very far, 5=not far) | 1 | 2 | 3 | 4 | 5 |

3 In this section, you will be asked for some information about yourself.

16. Which country/region are you from

- America ☐
- UK ☐
- Rest of the Europe ☐
- Australasia ☐
- Japan ☐
- Hong Kong ☐
- Taiwan ☐
- Southeast Asia ☐
- Others (please specify) ________________

17. Your gender? Male ☐ Female ☐

18. Do you think you are ethnic Chinese? Yes ☐ No ☐ Please specify ____________

19. Do you have any ancestors or relatives who are/were Chinese?
Yes ☐
No ☐
Please specify ____________

20. How many days you are travelling in China ____________?

21. How much do you think you spend **ALL TOGETHER** for your trip (including food, accommodation, transportation and shopping etc.)?
1) Below US$500.- ☐
2) US$500.- to US$800.- ☐
3) US$800.- to US$1,000.- ☐
4) Above US$1,000.- ☐

22. What is your final level of education?
1) Below high school ☐
2) High school ☐
3) Undergraduate/College ☐
4) Postgraduate ☐
5) Other (Please specify) ____________

23. Which of the following figures best describes your **ANNUAL** income level?
1) Below US$1,000,0.- ☐
2) US$10,000,0.- to US$20,000.- ☐
3) US$20,000.- to US$30,000.- ☐
4) US$30,000.- to US$40,000.- ☐
5) Above US$40,000.- ☐

24. Which of the category below best describes your age?
1) Below 24 ☐
2) 25-44 ☐
3) 45-65 ☐
4) Above 65 ☐

25. Are you
1) Single ☐
2) Married ☐

26. If you are interested in the research result or other tourism information on China, please leave your address: ____________________________

27. Email address: ____________________________

Thank you for your cooperation!
Please use the enclosed envelope return the questionnaire to:
Jiao Lan
Room Number 15, Unit 2, Building 2,
Tuanjiehu Nanli, Chaoyang District, Beijing China, 100026
Email: Yan.Jiao@ntu.ac.uk

## B. CHINESE VERSION

# 研　　究　　问　　卷

## “国际游客在中国的旅游分布情况”

亲爱的女士/先生，我的名字叫焦兰。我是英国诺丁汉工商学院，诺丁汉春特大学的博士研究生。我现在正在进行一项关于外国游客在中国的旅游分布行为的市场调研。

游客在一个国家内旅游，会由于不同原因被吸引到不同的旅游目的地。其旅行模式及路线也会因此而不同。这个调研就是要确认在同一个国家范围内，什么样的旅游地点对您最有吸引力，您 为什么并且如何旅行到所希望的目的地。

请尽量回答下面提及的所有问题，并请用所附的信封尽量在您**离开中国之前**将问卷返回到问卷末端所注明的地址，或直接退还给发放问卷者。非常感谢您的大力支持与合作！

---

在文卷的第一部分，您将回答一些关于旅游目的地的选择，旅游模式及旅行路线的问题。

1. 在中国，您最主要的旅游目的地是哪里 ______________________________ ？
2. 您来中国旅游最主要的目的是什么？
   - 1) 来探亲访友 □
   - 2) 商务旅行/出席会议 □
   - 3) 为了休闲娱乐 □
   - 4) 其他 (请具体陈述) ____________________
3. 您来中国旅游的主要动机是什么？您可以选择多项答案。
   - 1) 观光游览名胜古迹 □
   - 2) 了解当地文化风俗 □
   - 3) 寻祖先的根 □
   - 4) 拓展商业贸易 □
   - 5) 接受教育 □
   - 6) 购物 □
   - 7) 进行体育活动 □
   - 8) 其他(请具体陈述) ______________
4. 您是乘坐什么交通工具进入中国的？
   - 1) 乘飞机 □
   - 2) 乘火车 □
   - 3) 乘船 □
   - 4) 乘机动车 □
   - 5) 步行 □

5. 您**以前**来过中国多少次？ ______________

6. 您是以什么样的结伴方式旅行的？

1) 和旅行团一起 □
2) 只和家庭成员一起 □
3) 只和一些朋友 □
4) 只身一人旅行 □

7. 请在下面的地图上画出您的旅行线路。

## 中 国 地 图


8. 请按照您旅行的路线按**顺序**写出您去过的地方及在各地的停留/预计停留时间。

| | 游览的地点 | 停留时间 |
|---|---|---|
| 进入中国的地点(市/省) | ______ | ______ |
| 第二到达地 | ______ | ______ |
| 第三到达地 | ______ | ______ |
| 第四到达地 | ______ | ______ |
| 第五到达地 | ______ | ______ |
| 第六到达地 | ______ | ______ |
| 第七到达地 | ______ | ______ |
| 其他(请具体陈述) | ______ | ______ |
| 离开中国的地点(市/省) | ______ | ______ |

## 2

在这一部分，您将回答一些关于中国文化，及您对中国文化的理解的问题。请在下述1 - 5个数字中选择一个最代表您的态度的数字。这五个数字的含义是：

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| **很好/很多** | **较好/较多** | **一般** | **不很好/不很多** | **非常不好/不多** |

| | 很好/很多 | | 一般 | | 非常不好/不多 |
|---|---|---|---|---|---|
| 9. 您能多好的讲中国话或任何一种中国方言？<br>请具体指出是哪种语言 ______________________ | 1 | 2 | 3 | 4 | 5 |
| 10. 您觉得您对中国的文化有多好的了解？ | 1 | 2 | 3 | 4 | 5 |
| 11. 您觉得您自己国家的文化和中国的文化<br>相似程度是多少？ | 1 | 2 | 3 | 4 | 5 |
| 12. 您觉得您自己的文化背景与中国的文化<br>之间有没有很强的关系？ | 1 | 2 | 3 | 4 | 5 |
| 13. 您觉得您在第一个问题中回答的您在中国的最<br>主要目的地 (即您在问题1中的答案)对您有多大吸引力？ | 1 | 2 | 3 | 4 | 5 |
| 14. 您对下面的陈述的同意程度如何？ | | | | | |
| a. 尊敬权威十分重要 | 1 | 2 | 3 | 4 | 5 |
| b. 保护‘ 脸面’ (即个人尊严) 十分重要 | 1 | 2 | 3 | 4 | 5 |
| c. 保持和谐的人际关系十分重要 | 1 | 2 | 3 | 4 | 5 |
| d. 遵守社会准则及义务十分重要 | 1 | 2 | 3 | 4 | 5 |
| 15. 您如何评价从您本国到您在中国最主要目的地<br>(即问题1的答案)之间的距离？<br>(1=很远，2=远，3=中等，4=不太远，5=一点不远) | 1 | 2 | 3 | 4 | 5 |

## 3

在这一部分，您将回答一些关于您个人的问题。

| | | |
|---|---|---|
| 16. 您是从哪一个国家/地区来的？ | 美国 | □ |
| | 英国 | □ |
| | 欧洲其它国家 | □ |
| | 大洋洲(澳大利亚，新西兰) | □ |
| | 日本 | □ |
| | 香港 | □ |
| | 台湾 | □ |
| | 东南亚国家 | □ |
| | 其他(请具体陈述) ______________ | |
| 17. 您的性别？ | 男 | □ |
| | 女 | □ |
| 18. 您认为您是否有中国 血统？ | 有 | □ |
| | 没有 | □ |
| | 请具体陈述 ______________ | |

19. 您是否有具有中国血统的祖先或亲戚？

有 □

没有 □

请具体陈述 ____________________

20. 您在中国共旅行多少天？ ________________________________________

21. 您认为您的旅行**总共**花费多少(包括所有吃，住，交通及购物等)？

1) 低于500美金 □
2) 500美金 - 800美金 □
3) 800美金 - 1，000美金 □
4) 1，000美金以上 □

22. 您最后的学历水平是什么？

1) 低于高中程度 □
2) 高中学历 □
3) 大学学士学历 □
4) 大学学士学历以上 □
5) 其他(请具体陈述) ____________________

23. 下述哪一个数字最能代表您的年收入水平？

1) 低于10，000 □
2) 10，000美金 - 20，000美金 □
3) 20，000美金 - 30，000美金 □
4) 30，000美金 - 40，000美金 □
5) 40，000美金以上 □

24. 下述几组数字哪个最能代表您的年龄段？

1) 低于24 岁 □
2) 25 - 44 岁 □
3) 45-65 岁 □
4) 65 岁以上 □

25. 您的婚姻状况？ 单身 □

已婚 □

26. 如果您愿意看到此研究成果报告或关于中国旅游的信息，请留下您的联系地址:

________________________________________________________________

电子邮件地址(Email): ________________________________________________

**多谢您的大力支持！** 请用所附信封将文卷退回到下述地址：

焦兰

中国北京市朝阳区团结湖南里二号楼二单元15号

邮政编码：100026

电子邮件地址(email):Yan.Jiao@ntu.ac.uk

## C. JAPANESE VERSION

# 研究アンケート

**“国際観光客が中国での旅行の分布情況”**

皆さんこんにちは、私は焦蘭と申します。イギリスノッチンガム工商学院、ノッチンガムTRENT大学の博士大学院生である。私がいま行なっているのは、外国の観光客が中国での旅行の分布行動についての市場調査である。

観光客は一つの国で旅行する場合、いつもいろいろな原因でいろいろな旅行目的地に引付られていく。だから旅行のモデルがそれぞれ、コースも違っている。一つの国の中にどんな観光地が貴方にとって、もっとも吸引力があるのか？あなたが憧れの目的地に行く原因およびに如何にそちらへ行くのかなどが、私の調査の確認したい内容である。

できる限りつぎの質問を答えるのをお願いします、そして送付の封筒に入れて、中国を離れる前にこのアンケートの答えを文末のアドレスへ送ってくれるか、或いはこのアンケートを出す人に返してください。ご支持とご協力ありがとうございます。

---

**1** 第一部分において、旅行目的地の選択、旅行モデル及びコースについての質問を答えていただきたい。

1．貴方が中国でのもっとも重要な旅行目的地はどこですか？ ________

2．貴方が中国旅行の最も重要な目的は何ですか？

- 1）親友訪問 ☐
- 2）商務旅行/会議に出席 ☐
- 3）遊休、娯楽のため ☐
- 4）その他（詳しく紹介して下さい）________

3．貴方が中国旅行の最も重要な動機は何ですか？次の答案を幾つ選んでも良いです。

- 1）名勝古跡の観光 ☐
- 2）地元の文化風俗の了解 ☐
- 3）祖先の根を探す。 ☐
- 4）商業貿易のルートを開拓 ☐
- 5）教育を受ける ☐
- 6）ショッピング ☐
- 7）スポーツ活動を挙行 ☐
- 8）その他（詳しく紹介してください）________

4．どんな交通手段で中国に入ったのですか？

- 1）飛行機 ☐
- 2）列車 ☐
- 3）船 ☐
- 4）自動車 ☐
- 5）歩行 ☐

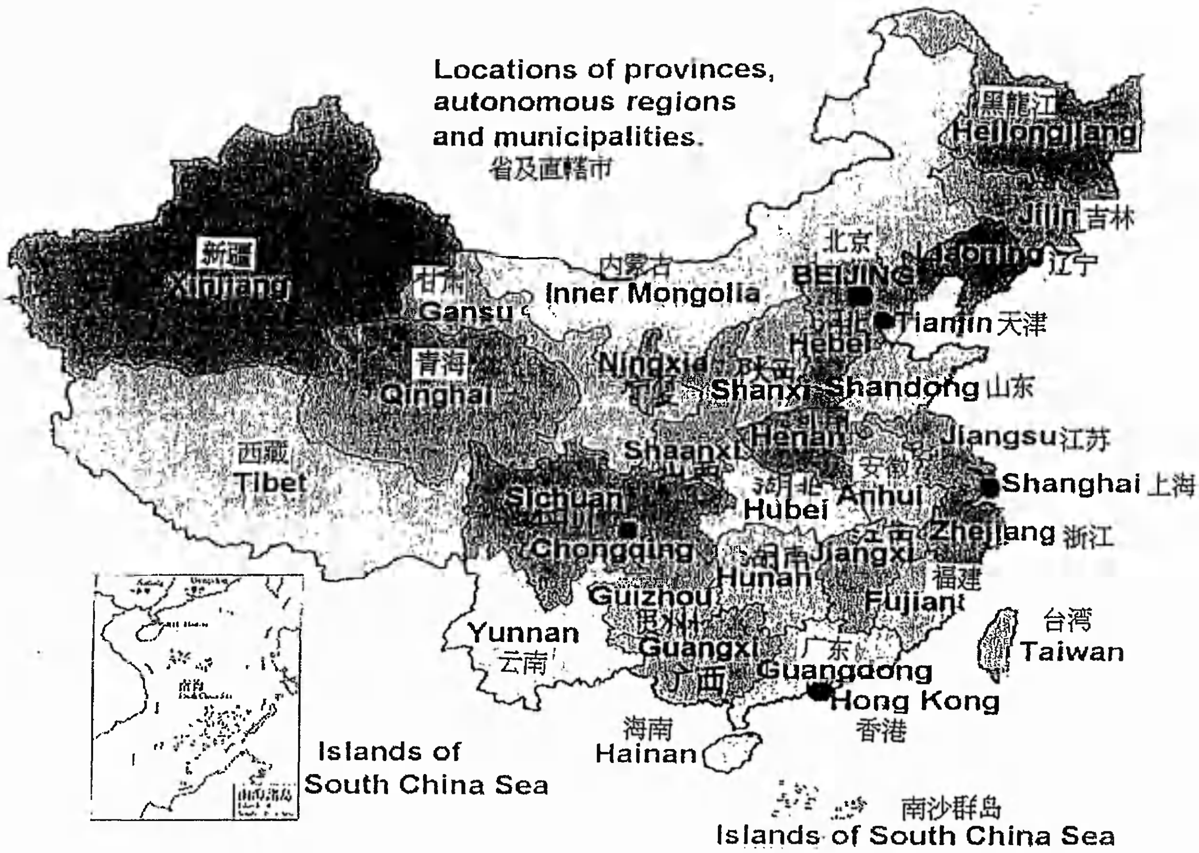
5．この前何回中国に来られたか？ ________

6．どのように連れ立って旅行するのか？

- 1）旅行団と一緒 ☐
- 2）家族の方だけと一緒 ☐
- 3）友人の方だけと一緒 ☐
- 4）独りぼっちの旅行 ☐

7．次の地図にあなたの旅行のコースを描き出してください。

# 中国地図




8．旅行コースの順に貴方の行った所及び滞在時間/予定滞在時間を書いてください。

| | 観光地地名 | 滞在時間 |
|---|---|---|
| 中国に入国した場所（市/省） | | |
| 二番目の到着地 | | |
| 三番目の到着地 | | |
| 四番目の到着地 | | |
| 五番目の到着地 | | |
| 六番目の到着地 | | |
| 七番目の到着地 | | |
| その他（詳しく紹介してください） | | |
| 中国を出る場所（市/省） | | |

**2** この部分で、中国の文化および貴方が中国の文化に対する理解の質問を答えていただきます。次の1～5までの数字の中から一番あなたの状態を代表できるのを選んでください。

これらの数字はそれぞれ次の意味である。

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| とても良い/とても多い | わりに良い/わりに多い | 普通 | あまり良くない/あまり多くない | 非常に良くない/多くない |

| | | | | | |
|---|---|---|---|---|---|
| 9．中国の標準語或いは方言の一種をどれほど話せるか？ | 1 | 2 | 3 | 4 | 5 |
| 話せることばを書き出してください ________ | | | | | |
| 10．貴方は中国の文化に対し、どれほど理解するか？ | 1 | 2 | 3 | 4 | 5 |
| 11．貴国の文化と中国の文化がどれほど似ているか？ | 1 | 2 | 3 | 4 | 5 |
| 12．貴方の文化背景は中国文化と強いつながりが有るか？ | 1 | 2 | 3 | 4 | 5 |
| 13．第１問に答えてもらった中国で貴方にとってもっとも重要な目的地（即ち１問に対し貴方の答案）は、貴方にどれほどの吸引力が有ったのか？ | 1 | 2 | 3 | 4 | 5 |
| 14．次の陳述に対しどれほどの同意を示すか？ | | | | | |
| a．権威に尊重することがとても大切だ | 1 | 2 | 3 | 4 | 5 |
| b．メンツ（個人の尊厳）を重んずることが重要だ | 1 | 2 | 3 | 4 | 5 |
| c．和やかな人事関係を守ることが大事だ | 1 | 2 | 3 | 4 | 5 |
| d．社会の規則と義務を遵守するのが肝要だ | 1 | 2 | 3 | 4 | 5 |
| 15．貴方は貴国から中国のもっとも重要な目的地までの距離についてどう考えますか？ | 1 | 2 | 3 | 4 | 5 |

（1＝とても遠い、2＝遠い、3＝遠くもなく近くもない、4＝あまり遠くない、5＝ちっとも遠くない）

**3** この部分で貴方個人のことについて答えてもらいます。

16．貴方はどの国／地区から来られたのですか？
- アメリカ □
- イギリス □
- 他のヨーロッパ国家 □
- 大洋州（オーストラリア、ニュージーランド）□
- 日本 □
- 香港 □
- 台湾 □
- 東南アジア国家 □
- その他（詳しく紹介してください）________

17．貴方の性別？
- 男性 □
- 女性 □

18．貴方は中国と血縁関係があるか？
- ある □
- ない □
- 具体的に紹介してください ________

19．中国と血縁のある祖先或いは親戚がいるか？　いる ☐
いない ☐
具体的に紹介してください ____________

20．中国で合わせて何日間旅行するか？ ____________

21．貴方の旅行の全部の費用はどれぐらいですか？（食、住、交通と買物などを含む）
- 1）500米ドル以下 ☐
- 2）500－800米ドル ☐
- 3）800－1000米ドル ☐
- 4）1000米ドル以上 ☐

22．貴方の最終の学歴レベルは？
- 1）高校以下 ☐
- 2）高校 ☐
- 3）大学学士 ☐
- 4）大学学士以上 ☐
- 5）その他（詳しく紹介してください）____________

23．次のどの数字が貴方の年給に当たりますか？
- 1）10000米ドル以下 ☐
- 2）10000～20000米ドル ☐
- 3）20000～30000米ドル ☐
- 4）30000～40000米ドル ☐
- 5）40000米ドル以上 ☐

24．次のどの年齢層が貴方の年齢に当たりますか？
- 1）24才以下 ☐
- 2）25～44才 ☐
- 3）45～65才 ☐
- 4）65才以上 ☐

25．貴方の婚姻状況？
- 1）独身 ☐
- 2）既婚 ☐

26．もし貴方がこの研究成果のレポートを読みたい、或いは中国の旅行遊覧についての情報を知りたいなら、貴方の宛先と宛名をお知らせください：____________

____________

イーメル（email）：____________

# ご協力有り難うございました！

このアンケートの答えをご送付の封筒で次の住所へお送りくださいお願いします。

名　　前：　焦　蘭
住　　所：　中国北京市朝陽区団結湖南里２号楼２単元15号
郵便番号：　100026
イーメル：　（email）Yan.jian @ntu.ac.uk

# APPENDIX 5

# List of main variables on the working file for the data analysis

| Name | Position |
|---|---|
| DESTINAT Main destination choice | 1 |
| Value Label | |
| 1 Beijing | |
| 2 Shanghai | |
| 3 Guangzhou | |
| 4 Others | |
| BJVSOTH Beijing vs. Others | 2 |
| Value Label | |
| 0 Others | |
| 1 Beijing | |
| SHAVSOTH Shanghai vs. Others | 3 |
| Value Label | |
| 0 Others | |
| 1 Shanghai | |
| GUAVSOTH Guangzhou vs. Others | 4 |
| Value Label | |
| 0 Others | |
| 1 Guangzhou | |
| MAINDURA Duration in the main destination | 12 |
| PURPOSE Purpose of travel | 13 |
| Value Label | |
| 1 VFR | |
| 2 Business | |
| 3 Holiday | |
| MOTIVAT Motivation of travel | 14 |
| Value Label | |
| 1 Leisure | |
| 2 Culture | |
| 3 Family root | |
| 4 Business | |
| 5 Education | |
| 6 Shopping | |
| 7 Sports | |
| 8 Others | |
| TRANSPOR Transport on arrivals | 15 |
| Value Label | |
| 1 Air | |
| 2 Rail | |
| 3 Sea | |
| 4 Motor | |
| 5 Foot | |
| REDTRANS Transport on arrival, regrouped | 16 |
| Value Label | |
| 1 Air | |
| 2 Rail/Sea/Motor/Foot | |
| PREVIOUS Number of previous visitation | 17 |
| REGPREV Number of visitations previously, regreouped | 19 |
| 0 0 times | |
| 1 once or twice | |
| 2 above twice | |

GROUP Type of travel group 20
Value Label

1 Package
2 Family
3 Friends
4 Alone

REGGROUP Type of travel group, regrouped 21
Value Label
1 Package
2 Family/Friends/alone

ENTRY Entry point 22
Value Label
1 Beijing
2 Shanghai
3 Guangzhou
4 Others

ENTRYDUR Duration in the entry point 26

ROUTE Travel route 43
Value Label
1 single destination
2 linear pattern
3 full orbit
4 partial orbit
5 abroad

ROUTE2 Travel route 44
Value Label
1 single destination
2 linear pattern
3 full orbit
4 others

DEPART Departure points 45
Value Label
1 Beijing
2 Shanghai
3 Guangzhou
4 Others
5 Single

NOVISIT Number of places visited 46

SINVMULT single vs. multiple destinations 47
Value Label
0 single
1 multiple

PLACE2RE 2nd place visited, region 56
0 No 2nd place
1 Gateways
2 Same region
3 Other region

TOTALDUR Duration in the country 65

REGTOTDU Duration in the country, regrouped 67
Value Label
1 1-4 days
2 5-9 days
3 10-15 days
4 >15 days

LANGUAGE Chinese language ability 68
Value Label
1 very well
2 well
3 neutral
4 not well
5 not at all

KNOWLEDG Knowledge of Chinese culture 69
Value Label
1 very well
2 well
3 neutral
4 not well
5 not at all

SIMILAR Similarity of own and Chinese culture 70
Value Label
1 very much
2 much
3 neutral
4 not much
5 not at all

RELATION Interrelationship of own and Chinese culture 71
Value Label
1 very much
2 well
3 neutral
4 not much
5 not at all

ATTRACT Attractiveness of main destination 72
Value Label
1 very much
2 much
3 neutral
4 not much
5 not at all

REGATTRA Attractiveness of main destination, regrouped 73
Value Label

1 very much
2 neutral
3 not much

RESPECT Respect authority 74
Value Label
1 very much
2 much
3 neutral
4 not much
5 not at all

FACE Face value 75
Value Label
1 very much
2 much
3 neutral
4 not much
5 not at all

HARMONY Maintain harmony 76
Value Label
1 very much
2 much
3 neutral

4 not much
5 not at all

NORM Adhere to social norms 77
Value Label
1 very much
2 much
3 neutral
4 not much
5 not at all

DISTANCE Geographical distance 78
Value Label
1 very far
2 far
3 medium
4 not far
5 not far at all

REGDISTA Geographical distance, regrouped 79
Value Label
1 far
2 medium
3 not far

ORIGIN Places of origin, original 80
Value Label
1 America
2 UK
3 Japan
4 Hong Kong and Macau SARs
5 Taiwan
6 Southeast Asia

REGORIGI Places of origin, regrouped 81
Value Label
1 America
2 UK
3 Japan
4 GCRs

ETHNIC Ethnicity 82
Value Label
0 Ethnic Chinese
1 Non-ethnic Chinese

ANCESTOR Have Chinese ancestor 83
Value Label
0 Yes
1 No

GENDER Gender 84
Value Label
0 Female
1 Male

SPEND Trip expense 85
Value Label
1 Below US$500
2 US$500-800
3 US$800-1000
4 Above US$1000

REGSPEND Trip expense, regrouped 86
Value Label
1 below US$800
2 US$800-1000

3 above US$1000

EDUCATE Final levels of education 87
Value Label
1 below high school
2 high school
3 undergraduate/college
4 postgraduate
5 others

REGEDUCA Final levels of education, regrouped 88
Value Label
1 high school and below
2 Undergraduate/College
3 Postgraduate and above

INCOME Income level 89
Value Label
1 Below US$10000
2 US$10000-20000
3 US$20000-30000
4 US$30000-40000
5 Above US$40000

REGINCOM Income level, regrouped 90
Value Label
1 Below US$30000
2 US$30000-40000
3 Above US$40000

AGE Age categories 91
Value Label
1 Below 24
2 25-44
3 45-65
4 Above 65

REGAGE Age categories, regrouped 92
Value Label
0 Below 45
1 above 45

MARRIAGE Marital status 93
Value Label
0 Married
1 Single

UNDER factor score 1 understanding of Chinese culture 94

EGO factor score 2 egoism 95

HARMO factor score 3 maintaining harmony 96

# APPENDIX 6

# One-way ANOVA of durations of stay and number of places visited

# A. DURATION OF STAYS IN MAIN DESTINATIONS, ENTRY POINTS AND THE WHOLE COUNTRY AGAINST PLACES OF ORIGIN

## Oneway

**Descriptives**

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Lower Bound | Upper Bound | | |
| Duration in the main destination | America | 56 | 4.95 | 1.920 | .257 | 4.43 | 5.46 | 2 | 10 |
| | UK | 47 | 4.32 | 1.957 | .285 | 3.74 | 4.89 | 2 | 10 |
| | Japan | 61 | 4.54 | 4.945 | .633 | 3.27 | 5.81 | 1 | 30 |
| | GCRs | 48 | 4.04 | 1.429 | .206 | 3.63 | 4.46 | 1 | 8 |
| | Total | 212 | 4.49 | 3.052 | .210 | 4.07 | 4.90 | 1 | 30 |
| Duration in the entry point | America | 56 | 4.071 | 2.2390 | .2992 | 3.472 | 4.671 | 1.0 | 11.0 |
| | UK | 47 | 3.702 | 2.1256 | .3100 | 3.078 | 4.326 | 1.0 | 10.0 |
| | Japan | 61 | 3.689 | 5.1260 | .6563 | 2.376 | 5.001 | .5 | 30.0 |
| | GCRs | 48 | 3.865 | 1.6527 | .2385 | 3.385 | 4.344 | .5 | 8.0 |
| | Total | 212 | 3.833 | 3.2245 | .2215 | 3.396 | 4.269 | .5 | 30.0 |
| Duration in the country | America | 56 | 12.84 | 4.459 | .596 | 11.65 | 14.03 | 5 | 23 |
| | UK | 47 | 13.23 | 5.201 | .759 | 11.71 | 14.76 | 3 | 25 |
| | Japan | 61 | 8.28 | 12.414 | 1.589 | 5.10 | 11.46 | 2 | 90 |
| | GCRs | 48 | 6.42 | 5.679 | .820 | 4.77 | 8.07 | 1 | 39 |
| | Total | 212 | 10.16 | 8.385 | .576 | 9.03 | 11.30 | 1 | 90 |

**Test of Homogeneity of Variances**

| | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|
| Duration in the main destination | 3.217 | 3 | 208 | .024 |
| Duration in the entry point | 3.192 | 3 | 208 | .025 |
| Duration in the country | 1.859 | 3 | 208 | .138 |

**ANOVA**

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Duration in the main destination | Between Groups | 22.841 | 3 | 7.614 | .815 | .487 |
| | Within Groups | 1942.116 | 208 | 9.337 | | |
| | Total | 1964.958 | 211 | | | |
| Duration in the entry point | Between Groups | 5.310 | 3 | 1.770 | .168 | .918 |
| | Within Groups | 2188.496 | 208 | 10.522 | | |
| | Total | 2193.805 | 211 | | | |
| Duration in the country | Between Groups | 1734.639 | 3 | 578.213 | 9.181 | .000 |
| | Within Groups | 13099.908 | 208 | 62.980 | | |
| | Total | 14834.547 | 211 | | | |

## Post Hoc Tests

**Multiple Comparisons**

Bonferroni

| Dependent Variable | (I) Places of origin, regrouped | (J) Places of origin, regrouped | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower Bound | Upper Bound |
| Duration in the main destination | America | UK | .63 | .604 | 1.000 | -.98 | 2.24 |
| | | Japan | .41 | .566 | 1.000 | -1.10 | 1.91 |
| | | GCRs | .90 | .601 | .803 | -.70 | 2.51 |
| | UK | America | -.63 | .604 | 1.000 | -2.24 | .98 |
| | | Japan | -.22 | .593 | 1.000 | -1.80 | 1.36 |
| | | GCRs | .28 | .627 | 1.000 | -1.39 | 1.95 |
| | Japan | America | -.41 | .566 | 1.000 | -1.91 | 1.10 |
| | | UK | .22 | .593 | 1.000 | -1.36 | 1.80 |
| | | GCRs | .50 | .590 | 1.000 | -1.07 | 2.07 |
| | GCRs | America | -.90 | .601 | .803 | -2.51 | .70 |
| | | UK | -.28 | .627 | 1.000 | -1.95 | 1.39 |
| | | Japan | -.50 | .590 | 1.000 | -2.07 | 1.07 |
| Duration in the entry point | America | UK | .369 | .6417 | 1.000 | -1.340 | 2.079 |
| | | Japan | .383 | .6003 | 1.000 | -1.216 | 1.982 |
| | | GCRs | .207 | .6380 | 1.000 | -1.493 | 1.906 |
| | UK | America | -.369 | .6417 | 1.000 | -2.079 | 1.340 |
| | | Japan | .014 | .6296 | 1.000 | -1.663 | 1.691 |
| | | GCRs | -.162 | .6656 | 1.000 | -1.936 | 1.611 |
| | Japan | America | -.383 | .6003 | 1.000 | -1.982 | 1.216 |
| | | UK | -.014 | .6296 | 1.000 | -1.691 | 1.663 |
| | | GCRs | -.176 | .6258 | 1.000 | -1.843 | 1.491 |
| | GCRs | America | -.207 | .6380 | 1.000 | -1.906 | 1.493 |
| | | UK | .162 | .6656 | 1.000 | -1.611 | 1.936 |
| | | Japan | .176 | .6258 | 1.000 | -1.491 | 1.843 |
| Duration in the country | America | UK | -.39 | 1.570 | 1.000 | -4.58 | 3.79 |
| | | Japan | 4.56* | 1.469 | .013 | .65 | 8.47 |
| | | GCRs | 6.42* | 1.561 | .000 | 2.26 | 10.58 |
| | UK | America | .39 | 1.570 | 1.000 | -3.79 | 4.58 |
| | | Japan | 4.96* | 1.540 | .009 | .85 | 9.06 |
| | | GCRs | 6.82* | 1.629 | .000 | 2.48 | 11.16 |
| | Japan | America | -4.56* | 1.469 | .013 | -8.47 | -.65 |
| | | UK | -4.96* | 1.540 | .009 | -9.06 | -.85 |
| | | GCRs | 1.86 | 1.531 | 1.000 | -2.22 | 5.94 |
| | GCRs | America | -6.42* | 1.561 | .000 | -10.58 | -2.26 |
| | | UK | -6.82* | 1.629 | .000 | -11.16 | -2.48 |
| | | Japan | -1.86 | 1.531 | 1.000 | -5.94 | 2.22 |

*. The mean difference is significant at the .05 level.

## B. DURATIONS IN THE WHOLE COUNTRY AGAINST GEOGRAPHICAL DISTANCE

**Descriptives**

Duration in the country

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound | | |
| far | 88 | 12.89 | 5.118 | .546 | 11.80 | 13.97 | 3 | 25 |
| medium | 112 | 8.63 | 10.021 | .947 | 6.76 | 10.51 | 1 | 90 |
| not far | 12 | 4.42 | 2.999 | .866 | 2.51 | 6.32 | 2 | 13 |
| Total | 212 | 10.16 | 8.385 | .576 | 9.03 | 11.30 | 1 | 90 |

**Test of Homogeneity of Variances**

Duration in the country

| Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|
| 1.711 | 2 | 209 | .183 |

**ANOVA**

Duration in the country

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 1310.776 | 2 | 655.388 | 10.129 | .000 |
| Within Groups | 13523.771 | 209 | 64.707 | | |
| Total | 14834.547 | 211 | | | |

## Post Hoc Tests

**Multiple Comparisons**

Dependent Variable: Duration in the country

| | (I) Geographical distance, regrouped | (J) Geographical distance, regrouped | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower Bound | Upper Bound |
| LSD | far | medium | 4.25* | 1.146 | .000 | 1.99 | 6.51 |
| | | not far | 8.47* | 2.475 | .001 | 3.59 | 13.35 |
| | medium | far | -4.25* | 1.146 | .000 | -6.51 | -1.99 |
| | | not far | 4.22 | 2.443 | .086 | -.60 | 9.03 |
| | not far | far | -8.47* | 2.475 | .001 | -13.35 | -3.59 |
| | | medium | -4.22 | 2.443 | .086 | -9.03 | .60 |
| Bonferroni | far | medium | 4.25* | 1.146 | .001 | 1.49 | 7.02 |
| | | not far | 8.47* | 2.475 | .002 | 2.50 | 14.44 |
| | medium | far | -4.25* | 1.146 | .001 | -7.02 | -1.49 |
| | | not far | 4.22 | 2.443 | .257 | -1.68 | 10.11 |
| | not far | far | -8.47* | 2.475 | .002 | -14.44 | -2.50 |
| | | medium | -4.22 | 2.443 | .257 | -10.11 | 1.68 |

*. The mean difference is significant at the .05 level.

# C. NUMBER OF PLACES VISITED VERSUS PLACES OF ORIGIN

## Oneway

### Descriptives

Number of places visited

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound | | |
| America | 56 | 3.86 | 1.911 | .255 | 3.35 | 4.37 | 1 | 9 |
| UK | 47 | 4.51 | 2.273 | .332 | 3.84 | 5.18 | 1 | 9 |
| Japan | 61 | 2.20 | 1.749 | .224 | 1.75 | 2.64 | 1 | 13 |
| GCRs | 48 | 2.04 | 1.557 | .225 | 1.59 | 2.49 | 1 | 7 |
| Total | 212 | 3.11 | 2.139 | .147 | 2.82 | 3.40 | 1 | 13 |

### Test of Homogeneity of Variances

Number of places visited

| Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|
| 4.944 | 3 | 208 | .002 |

### ANOVA

Number of places visited

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 229.125 | 3 | 76.375 | 21.580 | .000 |
| Within Groups | 736.158 | 208 | 3.539 | | |
| Total | 965.283 | 211 | | | |

## Post Hoc Tests

### Multiple Comparisons

Dependent Variable: Number of places visited
Bonferroni

| (I) Places of origin, regrouped | (J) Places of origin, regrouped | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| America | UK | -.65 | .372 | .483 | -1.64 | .34 |
| | Japan | 1.66* | .348 | .000 | .73 | 2.59 |
| | GCRs | 1.82* | .370 | .000 | .83 | 2.80 |
| UK | America | .65 | .372 | .483 | -.34 | 1.64 |
| | Japan | 2.31* | .365 | .000 | 1.34 | 3.29 |
| | GCRs | 2.47* | .386 | .000 | 1.44 | 3.50 |
| Japan | America | -1.66* | .348 | .000 | -2.59 | -.73 |
| | UK | -2.31* | .365 | .000 | -3.29 | -1.34 |
| | GCRs | .16 | .363 | 1.000 | -.81 | 1.12 |
| GCRs | America | -1.82* | .370 | .000 | -2.80 | -.83 |
| | UK | -2.47* | .386 | .000 | -3.50 | -1.44 |
| | Japan | -.16 | .363 | 1.000 | -1.12 | .81 |

*. The mean difference is significant at the .05 level.

# APPENDIX 7

# Factor analysis of the cultural distance variables

**Descriptive Statistics**

| | Mean | Std. Deviation | Analysis N |
|---|---|---|---|
| Chinese language ability | 4.02 | 1.454 | 212 |
| Knowledge of Chinese culture | 3.11 | .867 | 212 |
| Similarity of own and Chinese culture | 3.42 | 1.302 | 212 |
| Interrelationship of own and Chinese culture | 2.87 | 1.309 | 212 |
| Respect authority | 2.90 | 3.042 | 212 |
| Face value | 2.75 | 1.022 | 212 |
| Maintain harmony | 1.83 | .890 | 212 |
| Adhere to social norms | 2.24 | 1.173 | 212 |

**Correlation Matrix[a]**

| | | Chinese language ability | Knowledge of Chinese culture | Similarity of own and Chinese culture | Interrelationship of own and Chinese culture | Respect authority | Face value | Maintain harmony | Adhere to social norms |
|---|---|---|---|---|---|---|---|---|---|
| Correlation | Chinese language ability | 1.000 | .408 | .562 | .382 | .009 | .223 | .002 | .136 |
| | Knowledge of Chinese culture | .408 | 1.000 | .471 | .317 | -.064 | .047 | .060 | .129 |
| | Similarity of own and Chinese culture | .562 | .471 | 1.000 | .721 | -.176 | .224 | .130 | .185 |
| | Interrelationship of own and Chinese culture | .382 | .317 | .721 | 1.000 | -.140 | .202 | .201 | .220 |
| | Respect authority | .009 | -.064 | -.176 | -.140 | 1.000 | .077 | .083 | .064 |
| | Face value | .223 | .047 | .224 | .202 | .077 | 1.000 | .131 | .232 |
| | Maintain harmony | .002 | .060 | .130 | .201 | .083 | .131 | 1.000 | .469 |
| | Adhere to social norms | .136 | .129 | .185 | .220 | .064 | .232 | .469 | 1.000 |
| Sig. (1-tailed) | Chinese language ability | | .000 | .000 | .000 | .448 | .001 | .486 | .024 |
| | Knowledge of Chinese culture | .000 | | .000 | .000 | .176 | .246 | .192 | .031 |
| | Similarity of own and Chinese culture | .000 | .000 | | .000 | .005 | .001 | .029 | .003 |
| | Interrelationship of own and Chinese culture | .000 | .000 | .000 | | .021 | .002 | .002 | .001 |
| | Respect authority | .448 | .176 | .005 | .021 | | .131 | .114 | .178 |
| | Face value | .001 | .246 | .001 | .002 | .131 | | .029 | .000 |
| | Maintain harmony | .486 | .192 | .029 | .002 | .114 | .029 | | .000 |
| | Adhere to social norms | .024 | .031 | .003 | .001 | .178 | .000 | .000 | |

a. Determinant = .145

**KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .689 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 400.922 |
| | df | 28 |
| | Sig. | .000 |

**Communalities**

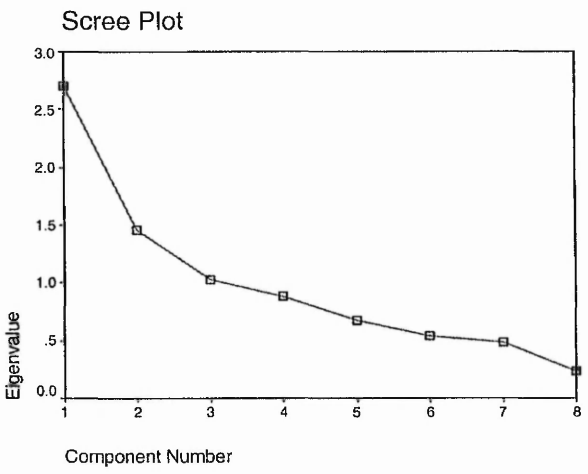
| | Initial |
|---|---|
| Chinese language ability | 1.000 |
| Knowledge of Chinese culture | 1.000 |
| Similarity of own and Chinese culture | 1.000 |
| Interrelationship of own and Chinese culture | 1.000 |
| Respect authority | 1.000 |
| Face value | 1.000 |
| Maintain harmony | 1.000 |
| Adhere to social norms | 1.000 |

Extraction Method: Principal Component Analysis.

**Total Variance Explained**

| Component | Initial Eigenvalues | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.706 | 33.831 | 33.831 | 2.518 | 31.474 | 31.474 |
| 2 | 1.457 | 18.213 | 52.044 | 1.559 | 19.493 | 50.967 |
| 3 | 1.027 | 12.834 | 64.878 | 1.113 | 13.911 | 64.878 |
| 4 | .884 | 11.049 | 75.927 | | | |
| 5 | .671 | 8.382 | 84.309 | | | |
| 6 | .543 | 6.785 | 91.093 | | | |
| 7 | .482 | 6.021 | 97.114 | | | |
| 8 | .231 | 2.886 | 100.000 | | | |

Extraction Method: Principal Component Analysis.



**Component Matrix**[a]

a. 3 components extracted.

**Rotated Component Matrix**[a]

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Chinese language ability | .766 | -8.28E-02 | .279 |
| Knowledge of Chinese culture | .670 | -1.49E-02 | -2.98E-03 |
| Similarity of own and Chinese culture | .886 | .151 | -7.95E-02 |
| Interrelationship of own and Chinese culture | .748 | .287 | -.133 |
| Respect authority | -.199 | -4.56E-05 | .846 |
| Face value | .285 | .250 | .523 |
| Maintain harmony | 4.016E-04 | .860 | 2.322E-02 |
| Adhere to social norms | .134 | .804 | .148 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

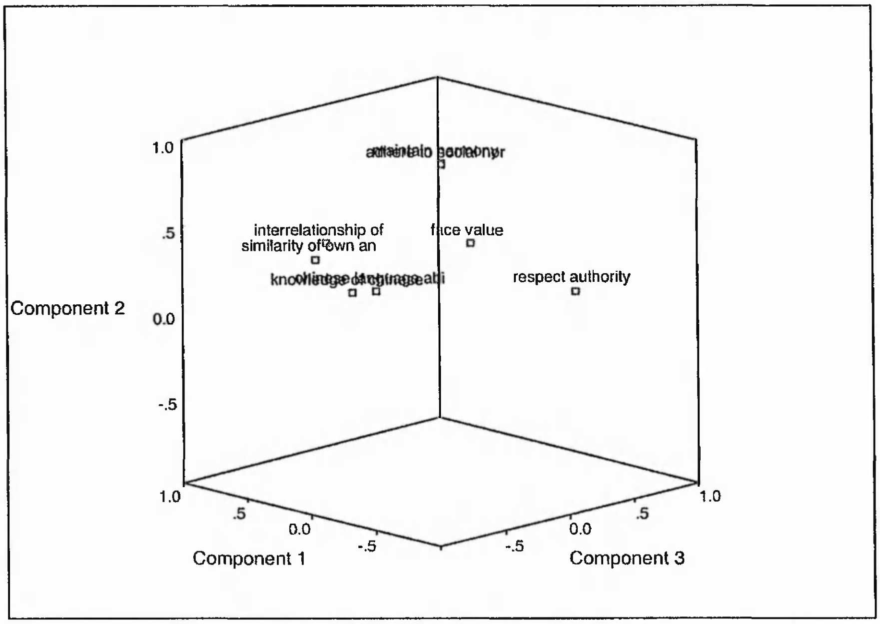
a. Rotation converged in 5 iterations.

**Component Transformation Matrix**

| Component | 1 | 2 | 3 |
|---|---|---|---|
| 1 | .923 | .377 | .071 |
| 2 | -.370 | .826 | .425 |
| 3 | .102 | -.419 | .902 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Component Plot in Rotated Space



# APPENDIX 8

# One-way ANOVA of the cultural distance factors

**Descriptives**

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean Lower Bound | 95% Confidence Interval for Mean Upper Bound | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|---|
| factor score 1 understanding of Chinese culture | Americas | 56 | .6535841 | .5945872 | 7.95E-02 | .4943526 | .8128156 | -1.18403 | 1.53672 |
| | UK | 47 | .8652318 | .3979250 | 5.80E-02 | .7483966 | .9820669 | -.01393 | 1.51387 |
| | Japan | 60 | -.3764229 | .6228908 | 8.04E-02 | -.5373326 | -.2155131 | -1.73860 | .85642 |
| | GCR | 48 | -1.13919 | .8052892 | .1162335 | -1.3730239 | -.9053607 | -2.54360 | .62243 |
| | Total | 211 | 1.68E-16 | 1.0000000 | 6.88E-02 | -.1357116 | .1357116 | -2.54360 | 1.53672 |
| factor score 2 egoism | Americas | 56 | .1974552 | 1.0996312 | .1469444 | -9.7028E-02 | .4919383 | -1.42813 | 4.03953 |
| | UK | 47 | -6.4E-02 | .7364581 | .1074235 | -.2802100 | .1522544 | -1.29574 | 1.69702 |
| | Japan | 60 | -6.1E-02 | 1.0730075 | .1385247 | -.3381675 | .2162069 | -1.56490 | 2.90385 |
| | GCR | 48 | -9.1E-02 | 1.0065270 | .1452797 | -.3837590 | .2007710 | -1.23478 | 2.70638 |
| | Total | 211 | -4.2E-17 | 1.0000000 | 6.88E-02 | -.1357116 | .1357116 | -1.56490 | 4.03953 |
| factor score 3 maitaining harmony | Americas | 56 | -.1655948 | .5425900 | 7.25E-02 | -.3109014 | -2.0288E-02 | -1.39873 | 1.19605 |
| | UK | 47 | -.1291540 | .6158197 | 8.98E-02 | -.3099654 | 5.165749E-02 | -1.40186 | 1.19138 |
| | Japan | 60 | .5921921 | 1.4483438 | .1869804 | .2180452 | .9663390 | -1.02243 | 10.44935 |
| | GCR | 48 | -.4205829 | .6643974 | 9.59E-02 | -.6135038 | -.2276620 | -1.65918 | 1.29357 |
| | Total | 211 | 1.01E-16 | 1.0000000 | 6.88E-02 | -.1357116 | .1357116 | -1.65918 | 10.44935 |

**Test of Homogeneity of Variances**

| | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|
| factor score 1 understanding of Chinese culture | 7.016 | 3 | 207 | .000 |
| factor score 2 egoism | 1.816 | 3 | 207 | .145 |
| factor score 3 maitaining harmony | 1.295 | 3 | 207 | .277 |

**ANOVA**

| | | | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|---|---|
| factor score 1 understanding of Chinese culture | Between Groups | (Combined) | | 129.901 | 3 | 43.300 | 111.901 | .000 |
| | | Linear Term | Unweighted | 113.488 | 1 | 113.488 | 293.287 | .000 |
| | | | Weighted | 109.010 | 1 | 109.010 | 281.714 | .000 |
| | | | Deviation | 20.892 | 2 | 10.446 | 26.995 | .000 |
| | Within Groups | | | 80.099 | 207 | .387 | | |
| | Total | | | 210.000 | 210 | | | |
| factor score 2 egoism | Between Groups | (Combined) | | 3.001 | 3 | 1.000 | 1.000 | .394 |
| | | Linear Term | Unweighted | 1.932 | 1 | 1.932 | 1.932 | .166 |
| | | | Weighted | 2.119 | 1 | 2.119 | 2.119 | .147 |
| | | | Deviation | .882 | 2 | .441 | .441 | .644 |
| | Within Groups | | | 206.999 | 207 | 1.000 | | |
| | Total | | | 210.000 | 210 | | | |
| factor score 3 maitaining harmony | Between Groups | (Combined) | | 31.852 | 3 | 10.617 | 12.337 | .000 |
| | | Linear Term | Unweighted | 4.927E-03 | 1 | 4.927E-03 | .006 | .940 |
| | | | Weighted | 7.527E-02 | 1 | 7.527E-02 | .087 | .768 |
| | | | Deviation | 31.777 | 2 | 15.888 | 18.461 | .000 |
| | Within Groups | | | 178.148 | 207 | .861 | | |
| | Total | | | 210.000 | 210 | | | |

# Post Hoc Tests

**Multiple Comparisons**

| Dependent Variable | | (I) Place of origins, regrouped | (J) Place of origins, regrouped | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | Upper Bound |
|---|---|---|---|---|---|---|---|---|
| factor score 1 understanding of Chinese culture | LSD | Americas | UK | -.2116477 | .1230562 | .087 | -.4542519 | 3.095650E-02 |
| | | | Japan | 1.0300069* | .1155812 | .000 | .8021396 | 1.2578742 |
| | | | GCR | 1.7927764* | .1223573 | .000 | 1.5515501 | 2.0340027 |
| | | UK | Americas | .2116477 | .1230562 | .087 | -3.0957E-02 | .4542519 |
| | | | Japan | 1.2416546* | .1211701 | .000 | 1.0027690 | 1.4805402 |
| | | | GCR | 2.0044241* | .1276498 | .000 | 1.7527637 | 2.2560845 |
| | | Japan | Americas | -1.0300069* | .1155812 | .000 | -1.2578742 | -.8021396 |
| | | | UK | -1.2416546* | .1211701 | .000 | -1.4805402 | -1.0027690 |
| | | | GCR | .7627695* | .1204602 | .000 | .5252833 | 1.0002556 |
| | | GCR | Americas | -1.7927764* | .1223573 | .000 | -2.0340027 | -1.5515501 |
| | | | UK | -2.0044241* | .1276498 | .000 | -2.2560845 | -1.7527637 |
| | | | Japan | -.7627695* | .1204602 | .000 | -1.0002556 | -.5252833 |
| | Bonferroni | Americas | UK | -.2116477 | .1230562 | .522 | -.5394513 | .1161559 |
| | | | Japan | 1.0300069* | .1155812 | .000 | .7221157 | 1.3378982 |
| | | | GCR | 1.7927764* | .1223573 | .000 | 1.4668346 | 2.1187182 |
| | | UK | Americas | .2116477 | .1230562 | .522 | -.1161559 | .5394513 |
| | | | Japan | 1.2416546* | .1211701 | .000 | .9188756 | 1.5644337 |
| | | | GCR | 2.0044241* | .1276498 | .000 | 1.6643839 | 2.3444643 |
| | | Japan | Americas | -1.0300069* | .1155812 | .000 | -1.3378982 | -.7221157 |
| | | | UK | -1.2416546* | .1211701 | .000 | -1.5644337 | -.9188756 |
| | | | GCR | .7627695* | .1204602 | .000 | .4418813 | 1.0836576 |
| | | GCR | Americas | -1.7927764* | .1223573 | .000 | -2.1187182 | -1.4668346 |
| | | | UK | -2.0044241* | .1276498 | .000 | -2.3444643 | -1.6643839 |
| | | | Japan | -.7627695* | .1204602 | .000 | -1.0836576 | -.4418813 |
| factor score 2 egoism | LSD | Americas | UK | .2614330 | .1978222 | .188 | -.1285715 | .6514375 |
| | | | Japan | .2584355 | .1858055 | .166 | -.1078783 | .6247493 |
| | | | GCR | .2889492 | .1966986 | .143 | -9.8840E-02 | .6767387 |
| | | UK | Americas | -.2614330 | .1978222 | .188 | -.6514375 | .1285715 |
| | | | Japan | -2.998E-03 | .1947900 | .988 | -.3870241 | .3810291 |
| | | | GCR | 2.752E-02 | .2052067 | .893 | -.3770469 | .4320792 |
| | | Japan | Americas | -.2584355 | .1858055 | .166 | -.6247493 | .1078783 |
| | | | UK | 2.998E-03 | .1947900 | .988 | -.3810291 | .3870241 |
| | | | GCR | 3.051E-02 | .1936489 | .875 | -.3512632 | .4122906 |
| | | GCR | Americas | -.2889492 | .1966986 | .143 | -.6767387 | 9.884027E-02 |
| | | | UK | -2.752E-02 | .2052067 | .893 | -.4320792 | .3770469 |
| | | | Japan | -3.051E-02 | .1936489 | .875 | -.4122906 | .3512632 |
| | Bonferroni | Americas | UK | .2614330 | .1978222 | 1.000 | -.2655359 | .7884020 |
| | | | Japan | .2584355 | .1858055 | .995 | -.2365229 | .7533939 |
| | | | GCR | .2889492 | .1966986 | .860 | -.2350268 | .8129252 |
| | | UK | Americas | -.2614330 | .1978222 | 1.000 | -.7884020 | .2655359 |
| | | | Japan | -2.998E-03 | .1947900 | 1.000 | -.5218892 | .5158941 |
| | | | GCR | 2.752E-02 | .2052067 | 1.000 | -.5191241 | .5741564 |
| | | Japan | Americas | -.2584355 | .1858055 | .995 | -.7533939 | .2365229 |
| | | | UK | 2.998E-03 | .1947900 | 1.000 | -.5158941 | .5218892 |
| | | | GCR | 3.051E-02 | .1936489 | 1.000 | -.4853381 | .5463656 |
| | | GCR | Americas | -.2889492 | .1966986 | .860 | -.8129252 | .2350268 |
| | | | UK | -2.752E-02 | .2052067 | 1.000 | -.5741564 | .5191241 |
| | | | Japan | -3.051E-02 | .1936489 | 1.000 | -.5463656 | .4853381 |
| factor score 3 maitaining harmony | LSD | Americas | UK | -3.644E-02 | .1835191 | .843 | -.3982469 | .3253652 |
| | | | Japan | -.7577869* | .1723713 | .000 | -1.0976152 | -.4179586 |
| | | | GCR | .2549881 | .1824768 | .164 | -.1047631 | .6147393 |
| | | UK | Americas | 3.644E-02 | .1835191 | .843 | -.3253652 | .3982469 |
| | | | Japan | -.7213460* | .1807061 | .000 | -1.0776064 | -.3650856 |
| | | | GCR | .2914290 | .1903697 | .127 | -8.3883E-02 | .6667410 |
| | | Japan | Americas | .7577869* | .1723713 | .000 | .4179586 | 1.0976152 |
| | | | UK | .7213460* | .1807061 | .000 | .3650856 | 1.0776064 |
| | | | GCR | 1.0127750* | .1796475 | .000 | .6586017 | 1.3669483 |
| | | GCR | Americas | -.2549881 | .1824768 | .164 | -.6147393 | .1047631 |
| | | | UK | -.2914290 | .1903697 | .127 | -.6667410 | 8.388304E-02 |
| | | | Japan | -1.0127750* | .1796475 | .000 | -1.3669483 | -.6586017 |
| | Bonferroni | Americas | UK | -3.644E-02 | .1835191 | 1.000 | -.5253084 | .4524268 |
| | | | Japan | -.7577869* | .1723713 | .000 | -1.2169584 | -.2986153 |
| | | | GCR | .2549881 | .1824768 | .983 | -.2311029 | .7410792 |
| | | UK | Americas | 3.644E-02 | .1835191 | 1.000 | -.4524268 | .5253084 |
| | | | Japan | -.7213460* | .1807061 | .001 | -1.2027204 | -.2399717 |
| | | | GCR | .2914290 | .1903697 | .764 | -.2156877 | .7985456 |
| | | Japan | Americas | .7577869* | .1723713 | .000 | .2986153 | 1.2169584 |
| | | | UK | .7213460* | .1807061 | .001 | .2399717 | 1.2027204 |
| | | | GCR | 1.0127750* | .1796475 | .000 | .5342207 | 1.4913293 |
| | | GCR | Americas | -.2549881 | .1824768 | .983 | -.7410792 | .2311029 |
| | | | UK | -.2914290 | .1903697 | .764 | -.7985456 | .2156877 |
| | | | Japan | -1.0127750* | .1796475 | .000 | -1.4913293 | -.5342207 |

*. The mean difference is significant at the .05 level.

# APPENDIX 9

## Binary logistic regression model, Logit I (1) and (2): Beijing versus Others

# a. Logit I (1): Beijing vs. Others

Case Processing Summary

| Unweighted Cases[a] | | N | Percent |
|---|---|---|---|
| Selected Cases | Included in Analysis | 211 | 99.5 |
| | Missing Cases | 1 | .5 |
| | Total | 212 | 100.0 |
| Unselected Cases | | 0 | .0 |
| Total | | 212 | 100.0 |

a. If weight is in effect, see classification table for the total number of cases.

## Dependent Variable Encoding

| Original Value | Internal Value |
|---|---|
| Others | 0 |
| Beijing | 1 |

Categorical Variables Codings

| | | Frequency | Parameter coding (1) | (2) | (3) |
|---|---|---|---|---|---|
| Place of origins, regrouped | Americas | 56 | 1.000 | .000 | .000 |
| | UK | 47 | .000 | 1.000 | .000 |
| | Japan | 60 | .000 | .000 | 1.000 |
| | GCR | 48 | .000 | .000 | .000 |
| Entry point | Beijing | 105 | 1.000 | .000 | .000 |
| | Shanghai | 52 | .000 | 1.000 | .000 |
| | Guangzhou | 24 | .000 | .000 | 1.000 |
| | Others | 30 | .000 | .000 | .000 |
| 2nd place visited, region | No 2nd place | 62 | 1.000 | .000 | .000 |
| | Gateways | 41 | .000 | 1.000 | .000 |
| | Same region | 89 | .000 | .000 | 1.000 |
| | Other region | 19 | .000 | .000 | .000 |
| Number of visitations previously, regreouped | 0 times | 109 | 1.000 | .000 | |
| | once or twice | 46 | .000 | 1.000 | |
| | above twice | 56 | .000 | .000 | |
| Income level, regrouped | Below US$30000 | 84 | 1.000 | .000 | |
| | US$30000-40000 | 26 | .000 | 1.000 | |
| | Above US$40000 | 101 | .000 | .000 | |
| Final level of education, regrouped | high school and below | 47 | 1.000 | .000 | |
| | Undergraduate/College | 90 | .000 | 1.000 | |
| | Postgraduate and above | 74 | .000 | .000 | |
| Trip expense, regrouped | below US$800 | 60 | 1.000 | .000 | |
| | US$800-1000 | 29 | .000 | 1.000 | |
| | above US$1000 | 122 | .000 | .000 | |
| Geographic distance, regrouped | far | 88 | 1.000 | .000 | |
| | medium | 111 | .000 | 1.000 | |
| | not far | 12 | .000 | .000 | |
| Attractiveness of main destination, regrouped | very much | 158 | 1.000 | .000 | |
| | neutral | 39 | .000 | 1.000 | |
| | not much | 14 | .000 | .000 | |
| Type of travel group, regrouped | Package | 129 | 1.000 | | |
| | Family/Friends/alone | 82 | .000 | | |
| Marital status | Single | 67 | 1.000 | | |
| | Married | 144 | .000 | | |
| Age categories, regrouped | Below 44 | 88 | 1.000 | | |
| | above 45 | 123 | .000 | | |
| Gender | Male | 121 | 1.000 | | |
| | Female | 90 | .000 | | |
| Ethnic Chinese | Yes | 55 | 1.000 | | |
| | No | 156 | .000 | | |
| Transport of arrival, regrouped | Air | 190 | 1.000 | | |
| | Rail/Sea/Motor/Foot | 21 | .000 | | |

# Block 0: Beginning Block

Iteration History[a,b,c]

| Iteration | | -2 Log likelihood | Coefficients Constant |
|---|---|---|---|
| Step 0 | 1 | 281.953 | -.445 |
| | 2 | 281.951 | -.453 |

a. Constant is included in the model.

b. Initial -2 Log Likelihood: 281.951

c. Estimation terminated at iteration number 2 because log-likelihood decreased by less than .010 percent.

Classification Table[a,b]

| Observed | | | Predicted: Beijing vs. Others - Others | Predicted: Beijing vs. Others - Beijing | Predicted: Percentage Correct |
|---|---|---|---|---|---|
| Step 0 | Beijing vs. Others | Others | 0 | 82 | .0 |
| | | Beijing | 0 | 129 | 100.0 |
| | Overall Percentage | | | | 61.1 |

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 0 | Constant | .453 | .141 | 10.292 | 1 | .001 | 1.573 |

**Variables not in the Equation**

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 0 | Variables | REDTRANS(1) | 13.678 | 1 | .000 |
| | | REGPREV | 10.975 | 2 | .004 |
| | | REGPREV(1) | 10.309 | 1 | .001 |
| | | REGPREV(2) | 1.141 | 1 | .285 |
| | | REGGROUP(1) | 5.553 | 1 | .018 |
| | | ENTRY | 74.804 | 3 | .000 |
| | | ENTRY(1) | 61.691 | 1 | .000 |
| | | ENTRY(2) | 20.430 | 1 | .000 |
| | | ENTRY(3) | 31.779 | 1 | .000 |
| | | ENTRYDUR | .426 | 1 | .514 |
| | | PLACE2RE | 2.799 | 3 | .424 |
| | | PLACE2RE(1) | .115 | 1 | .734 |
| | | PLACE2RE(2) | 1.972 | 1 | .160 |
| | | PLACE2RE(3) | .952 | 1 | .329 |
| | | TOTALDUR | .363 | 1 | .547 |
| | | REGATTRA | 1.549 | 2 | .461 |
| | | REGATTRA(1) | .209 | 1 | .648 |
| | | REGATTRA(2) | 1.070 | 1 | .301 |
| | | REGDISTA | 8.566 | 2 | .014 |
| | | REGDISTA(1) | 3.153 | 1 | .076 |
| | | REGDISTA(2) | .277 | 1 | .598 |
| | | REGORIGI | 5.344 | 3 | .148 |
| | | REGORIGI(1) | 3.398 | 1 | .065 |
| | | REGORIGI(2) | .185 | 1 | .668 |
| | | REGORIGI(3) | .277 | 1 | .598 |
| | | ETHNIC(1) | 3.276 | 1 | .070 |
| | | GENDER(1) | .318 | 1 | .573 |
| | | REGSPEND | .219 | 2 | .896 |
| | | REGSPEND(1) | .170 | 1 | .680 |
| | | REGSPEND(2) | .012 | 1 | .912 |
| | | REGEDUCA | 1.018 | 2 | .601 |
| | | REGEDUCA(1) | .008 | 1 | .928 |
| | | REGEDUCA(2) | .722 | 1 | .395 |
| | | REGINCOM | 11.510 | 2 | .003 |
| | | REGINCOM(1) | 1.106 | 1 | .293 |
| | | REGINCOM(2) | 11.510 | 1 | .001 |
| | | REGAGE(1) | .053 | 1 | .819 |
| | | MARRIAGE(1) | 2.336 | 1 | .126 |
| | | UNDER | 8.229 | 1 | .004 |
| | | HARMO | 3.031 | 1 | .082 |
| | Overall Statistics | | 97.496 | 31 | .000 |

# Block 1: Method = Backward Stepwise (Likelihood Ratio)

Omnibus Tests of Model Coefficients

| | | Chi-square | df | Sig. |
|---|---|---|---|---|
| Step 1 | Step | 116.554 | 31 | .000 |
| | Block | 116.554 | 31 | .000 |
| | Model | 116.554 | 31 | .000 |
| Step 2[a] | Step | -.021 | 1 | .886 |
| | Block | 116.534 | 30 | .000 |
| | Model | 116.534 | 30 | .000 |
| Step 3[a] | Step | -.034 | 1 | .853 |
| | Block | 116.500 | 29 | .000 |
| | Model | 116.500 | 29 | .000 |
| Step 4[a] | Step | -.885 | 3 | .829 |
| | Block | 115.615 | 26 | .000 |
| | Model | 115.615 | 28 | .000 |
| Step 5[a] | Step | -.031 | 1 | .861 |
| | Block | 115.585 | 25 | .000 |
| | Model | 115.585 | 25 | .000 |
| Step 6[a] | Step | -.826 | 2 | .662 |
| | Block | 114.759 | 23 | .000 |
| | Model | 114.759 | 24 | .000 |
| Step 7[a] | Step | -.217 | 1 | .642 |
| | Block | 114.542 | 22 | .000 |
| | Model | 114.542 | 22 | .000 |
| Step 8[a] | Step | -.174 | 1 | .677 |
| | Block | 114.369 | 21 | .000 |
| | Model | 114.369 | 21 | .000 |
| Step 9[a] | Step | -.275 | 1 | .600 |
| | Block | 114.094 | 20 | .000 |
| | Model | 114.094 | 20 | .000 |
| Step 10[a] | Step | -1.385 | 2 | .500 |
| | Block | 112.708 | 18 | .000 |
| | Model | 112.708 | 19 | .000 |
| Step 11[a] | Step | -.431 | 1 | .512 |
| | Block | 112.277 | 17 | .000 |
| | Model | 112.277 | 17 | .000 |
| Step 12[a] | Step | -1.129 | 1 | .288 |
| | Block | 111.148 | 16 | .000 |
| | Model | 111.148 | 16 | .000 |
| Step 13[a] | Step | -4.612 | 3 | .203 |
| | Block | 106.536 | 13 | .000 |
| | Model | 106.536 | 15 | .000 |
| Step 14[a] | Step | -2.558 | 2 | .278 |
| | Block | 103.978 | 11 | .000 |
| | Model | 103.978 | 12 | .000 |
| Step 15[a] | Step | -1.396 | 1 | .237 |
| | Block | 102.583 | 10 | .000 |
| | Model | 102.583 | 10 | .000 |

a. A negative Chi-squares value indicates that the Chi-squares value has decreased from the previous step.

Model Summary

| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|---|
| 1 | 165.396 | .424 | .576 |
| 2 | 165.417 | .424 | .576 |
| 3 | 165.451 | .424 | .576 |
| 4 | 166.335 | .422 | .572 |
| 5 | 166.366 | .422 | .572 |
| 6 | 167.192 | .420 | .569 |
| 7 | 167.408 | .419 | .568 |
| 8 | 167.582 | .418 | .568 |
| 9 | 167.857 | .418 | .567 |
| 10 | 169.242 | .414 | .561 |
| 11 | 169.673 | .413 | .560 |
| 12 | 170.802 | .409 | .555 |
| 13 | 175.415 | .396 | .538 |
| 14 | 177.972 | .389 | .528 |
| 15 | 179.368 | .385 | .522 |

Hosmer and Lemeshow Test

| Step | Chi-square | df | Sig. |
|---|---|---|---|
| 1 | 22.726 | 8 | .004 |
| 2 | 16.549 | 8 | .035 |
| 3 | 16.559 | 8 | .035 |
| 4 | 17.642 | 8 | .024 |
| 5 | 16.701 | 8 | .033 |
| 6 | 16.702 | 8 | .033 |
| 7 | 15.346 | 8 | .053 |
| 8 | 19.264 | 8 | .014 |
| 9 | 20.320 | 8 | .009 |
| 10 | 18.328 | 8 | .019 |
| 11 | 20.508 | 8 | .009 |
| 12 | 30.136 | 8 | .000 |
| 13 | 22.761 | 8 | .004 |
| 14 | 5.060 | 8 | .751 |
| 15 | 8.122 | 8 | .422 |

Contingency Table for Hosmer and Lemeshow Test

| | | Beijing vs. Others = Others | | Beijing vs. Others = Beijing | | Total |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | |
| Step 1 | 1 | 21 | 20.238 | 0 | .762 | 21 |
| | 2 | 20 | 18.018 | 1 | 2.982 | 21 |
| | 3 | 16 | 15.095 | 5 | 5.905 | 21 |
| | 4 | 6 | 11.010 | 15 | 9.990 | 21 |
| | 5 | 7 | 7.532 | 14 | 13.468 | 21 |
| | 6 | 6 | 4.254 | 15 | 16.746 | 21 |
| | 7 | 0 | 2.576 | 21 | 18.424 | 21 |
| | 8 | 2 | 1.615 | 19 | 19.385 | 21 |
| | 9 | 1 | 1.120 | 20 | 19.880 | 21 |
| | 10 | 3 | .543 | 19 | 21.457 | 22 |
| Step 2 | 1 | 21 | 20.100 | 0 | .900 | 21 |
| | 2 | 20 | 17.851 | 1 | 3.149 | 21 |
| | 3 | 15 | 15.031 | 6 | 5.969 | 21 |
| | 4 | 8 | 11.408 | 13 | 9.592 | 21 |
| | 5 | 6 | 7.318 | 15 | 13.682 | 21 |
| | 6 | 4 | 4.209 | 17 | 16.791 | 21 |
| | 7 | 2 | 2.630 | 19 | 18.370 | 21 |
| | 8 | 1 | 1.696 | 20 | 19.304 | 21 |
| | 9 | 2 | 1.169 | 19 | 19.831 | 21 |
| | 10 | 3 | .588 | 19 | 21.412 | 22 |
| Step 3 | 1 | 21 | 20.094 | 0 | .906 | 21 |
| | 2 | 20 | 17.843 | 1 | 3.157 | 21 |
| | 3 | 15 | 15.041 | 6 | 5.959 | 21 |
| | 4 | 8 | 11.410 | 13 | 9.590 | 21 |
| | 5 | 6 | 7.326 | 15 | 13.674 | 21 |
| | 6 | 4 | 4.213 | 17 | 16.787 | 21 |
| | 7 | 2 | 2.614 | 19 | 18.386 | 21 |
| | 8 | 1 | 1.695 | 20 | 19.305 | 21 |
| | 9 | 2 | 1.177 | 19 | 19.823 | 21 |
| | 10 | 3 | .587 | 19 | 21.413 | 22 |
| Step 4 | 1 | 21 | 20.096 | 0 | .904 | 21 |
| | 2 | 20 | 17.849 | 1 | 3.151 | 21 |
| | 3 | 15 | 15.012 | 6 | 5.988 | 21 |
| | 4 | 9 | 11.407 | 12 | 9.593 | 21 |
| | 5 | 5 | 7.365 | 16 | 13.635 | 21 |
| | 6 | 4 | 4.210 | 17 | 16.790 | 21 |
| | 7 | 3 | 2.606 | 18 | 18.394 | 21 |
| | 8 | 0 | 1.690 | 21 | 19.310 | 21 |
| | 9 | 2 | 1.178 | 19 | 19.822 | 21 |
| | 10 | 3 | .588 | 19 | 21.412 | 22 |

Contingency Table for Hosmer and Lemeshow Test

| | | Beijing vs. Others = Others | | Beijing vs. Others = Beijing | | |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | Total |
| Step 5 | 1 | 21 | 20.076 | 0 | .924 | 21 |
| | 2 | 20 | 17.779 | 1 | 3.221 | 21 |
| | 3 | 15 | 14.927 | 6 | 6.073 | 21 |
| | 4 | 8 | 11.569 | 13 | 9.431 | 21 |
| | 5 | 7 | 7.381 | 14 | 13.619 | 21 |
| | 6 | 4 | 4.188 | 17 | 16.812 | 21 |
| | 7 | 1 | 2.612 | 20 | 18.388 | 21 |
| | 8 | 2 | 1.734 | 19 | 19.266 | 21 |
| | 9 | 1 | 1.150 | 20 | 19.850 | 21 |
| | 10 | 3 | .585 | 19 | 21.415 | 22 |
| Step 6 | 1 | 21 | 20.080 | 0 | .920 | 21 |
| | 2 | 20 | 17.771 | 1 | 3.229 | 21 |
| | 3 | 15 | 14.953 | 6 | 6.047 | 21 |
| | 4 | 8 | 11.567 | 13 | 9.433 | 21 |
| | 5 | 7 | 7.342 | 14 | 13.658 | 21 |
| | 6 | 4 | 4.182 | 17 | 16.818 | 21 |
| | 7 | 1 | 2.633 | 20 | 18.367 | 21 |
| | 8 | 2 | 1.736 | 19 | 19.264 | 21 |
| | 9 | 1 | 1.152 | 20 | 19.848 | 21 |
| | 10 | 3 | .586 | 19 | 21.414 | 22 |
| Step 7 | 1 | 21 | 20.101 | 0 | .899 | 21 |
| | 2 | 21 | 17.673 | 0 | 3.327 | 21 |
| | 3 | 13 | 14.897 | 8 | 6.103 | 21 |
| | 4 | 9 | 11.575 | 12 | 9.425 | 21 |
| | 5 | 6 | 7.391 | 15 | 13.609 | 21 |
| | 6 | 5 | 4.184 | 16 | 16.816 | 21 |
| | 7 | 1 | 2.657 | 20 | 18.343 | 21 |
| | 8 | 1 | 1.738 | 20 | 19.262 | 21 |
| | 9 | 3 | 1.163 | 18 | 19.837 | 21 |
| | 10 | 2 | .621 | 20 | 21.379 | 22 |
| Step 8 | 1 | 21 | 20.089 | 0 | .911 | 21 |
| | 2 | 21 | 17.674 | 0 | 3.326 | 21 |
| | 3 | 13 | 14.918 | 8 | 6.082 | 21 |
| | 4 | 9 | 11.581 | 12 | 9.419 | 21 |
| | 5 | 6 | 7.391 | 15 | 13.609 | 21 |
| | 6 | 5 | 4.154 | 16 | 16.846 | 21 |
| | 7 | 1 | 2.657 | 20 | 18.343 | 21 |
| | 8 | 1 | 1.750 | 20 | 19.250 | 21 |
| | 9 | 2 | 1.169 | 19 | 19.831 | 21 |
| | 10 | 3 | .618 | 19 | 21.382 | 22 |
| Step 9 | 1 | 21 | 20.057 | 0 | .943 | 21 |
| | 2 | 20 | 17.724 | 1 | 3.276 | 21 |
| | 3 | 15 | 14.915 | 6 | 6.085 | 21 |
| | 4 | 9 | 11.967 | 13 | 10.033 | 22 |
| | 5 | 5 | 7.144 | 16 | 13.856 | 21 |
| | 6 | 5 | 4.104 | 16 | 16.896 | 21 |
| | 7 | 1 | 2.770 | 21 | 19.230 | 22 |
| | 8 | 1 | 1.730 | 20 | 19.270 | 21 |
| | 9 | 2 | 1.071 | 19 | 19.929 | 21 |
| | 10 | 3 | .520 | 17 | 19.480 | 20 |
| Step 10 | 1 | 21 | 20.047 | 0 | .953 | 21 |
| | 2 | 21 | 17.729 | 0 | 3.271 | 21 |
| | 3 | 13 | 14.863 | 8 | 6.137 | 21 |
| | 4 | 10 | 11.514 | 11 | 9.486 | 21 |
| | 5 | 5 | 7.330 | 16 | 13.670 | 21 |
| | 6 | 5 | 4.304 | 16 | 16.696 | 21 |
| | 7 | 1 | 2.681 | 20 | 18.319 | 21 |
| | 8 | 2 | 1.796 | 19 | 19.204 | 21 |
| | 9 | 1 | 1.129 | 20 | 19.871 | 21 |
| | 10 | 3 | .608 | 19 | 21.392 | 22 |

Contingency Table for Hosmer and Lemeshow Test

| | | Beijing vs. Others = Others | | Beijing vs. Others = Beijing | | |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | Total |
| Step 11 | 1 | 21 | 20.118 | 0 | .882 | 21 |
| | 2 | 21 | 17.692 | 0 | 3.308 | 21 |
| | 3 | 12 | 14.557 | 9 | 6.443 | 21 |
| | 4 | 11 | 11.433 | 10 | 9.567 | 21 |
| | 5 | 5 | 7.721 | 16 | 13.279 | 21 |
| | 6 | 5 | 4.089 | 16 | 16.911 | 21 |
| | 7 | 0 | 2.665 | 22 | 19.335 | 22 |
| | 8 | 3 | 1.893 | 18 | 19.107 | 21 |
| | 9 | 1 | 1.175 | 20 | 19.825 | 21 |
| | 10 | 3 | .657 | 18 | 20.343 | 21 |
| Step 12 | 1 | 21 | 20.099 | 0 | .901 | 21 |
| | 2 | 22 | 18.339 | 0 | 3.661 | 22 |
| | 3 | 11 | 14.549 | 10 | 6.451 | 21 |
| | 4 | 11 | 11.142 | 10 | 9.858 | 21 |
| | 5 | 5 | 7.665 | 16 | 13.335 | 21 |
| | 6 | 5 | 3.973 | 16 | 17.027 | 21 |
| | 7 | 0 | 2.386 | 20 | 17.614 | 20 |
| | 8 | 3 | 1.910 | 18 | 19.090 | 21 |
| | 9 | 0 | 1.219 | 21 | 19.781 | 21 |
| | 10 | 4 | .718 | 18 | 21.282 | 22 |
| Step 13 | 1 | 22 | 20.975 | 0 | 1.025 | 22 |
| | 2 | 20 | 17.394 | 1 | 3.606 | 21 |
| | 3 | 13 | 14.956 | 9 | 7.044 | 22 |
| | 4 | 11 | 10.955 | 10 | 10.045 | 21 |
| | 5 | 4 | 7.577 | 17 | 13.423 | 21 |
| | 6 | 5 | 3.822 | 15 | 16.178 | 20 |
| | 7 | 1 | 2.815 | 23 | 21.185 | 24 |
| | 8 | 1 | 1.883 | 21 | 20.117 | 22 |
| | 9 | 2 | 1.128 | 20 | 20.872 | 22 |
| | 10 | 3 | .496 | 13 | 15.504 | 16 |
| Step 14 | 1 | 21 | 20.085 | 0 | .915 | 21 |
| | 2 | 18 | 17.900 | 4 | 4.100 | 22 |
| | 3 | 17 | 15.724 | 6 | 7.276 | 23 |
| | 4 | 8 | 9.920 | 12 | 10.080 | 20 |
| | 5 | 6 | 7.399 | 16 | 14.601 | 22 |
| | 6 | 4 | 4.697 | 18 | 17.303 | 22 |
| | 7 | 2 | 2.385 | 17 | 16.615 | 19 |
| | 8 | 2 | 1.888 | 19 | 19.112 | 21 |
| | 9 | 3 | 1.320 | 19 | 20.680 | 22 |
| | 10 | 1 | .682 | 18 | 18.318 | 19 |
| Step 15 | 1 | 20 | 19.126 | 0 | .874 | 20 |
| | 2 | 16 | 18.081 | 6 | 3.919 | 22 |
| | 3 | 14 | 13.499 | 6 | 6.501 | 20 |
| | 4 | 14 | 11.992 | 9 | 11.008 | 23 |
| | 5 | 6 | 8.040 | 16 | 13.960 | 22 |
| | 6 | 5 | 4.546 | 16 | 16.454 | 21 |
| | 7 | 1 | 1.925 | 15 | 14.075 | 16 |
| | 8 | 1 | 2.115 | 19 | 17.885 | 20 |
| | 9 | 4 | 1.767 | 19 | 21.233 | 23 |
| | 10 | 1 | .910 | 23 | 23.090 | 24 |

Classification Table[a]

| Observed | | | Predicted: Beijing vs. Others: Others | Predicted: Beijing vs. Others: Beijing | Percentage Correct |
|---|---|---|---|---|---|
| Step 1 | Beijing vs. Others | Others | 61 | 21 | 74.4 |
| | | Beijing | 14 | 115 | 89.1 |
| | Overall Percentage | | | | 83.4 |
| Step 2 | Beijing vs. Others | Others | 61 | 21 | 74.4 |
| | | Beijing | 14 | 115 | 89.1 |
| | Overall Percentage | | | | 83.4 |
| Step 3 | Beijing vs. Others | Others | 61 | 21 | 74.4 |
| | | Beijing | 14 | 115 | 89.1 |
| | Overall Percentage | | | | 83.4 |
| Step 4 | Beijing vs. Others | Others | 62 | 20 | 75.6 |
| | | Beijing | 17 | 112 | 86.8 |
| | Overall Percentage | | | | 82.5 |
| Step 5 | Beijing vs. Others | Others | 62 | 20 | 75.6 |
| | | Beijing | 17 | 112 | 86.8 |
| | Overall Percentage | | | | 82.5 |
| Step 6 | Beijing vs. Others | Others | 62 | 20 | 75.6 |
| | | Beijing | 15 | 114 | 88.4 |
| | Overall Percentage | | | | 83.4 |
| Step 7 | Beijing vs. Others | Others | 62 | 20 | 75.6 |
| | | Beijing | 16 | 113 | 87.6 |
| | Overall Percentage | | | | 82.9 |
| Step 8 | Beijing vs. Others | Others | 62 | 20 | 75.6 |
| | | Beijing | 16 | 113 | 87.6 |
| | Overall Percentage | | | | 82.9 |
| Step 9 | Beijing vs. Others | Others | 62 | 20 | 75.6 |
| | | Beijing | 15 | 114 | 88.4 |
| | Overall Percentage | | | | 83.4 |
| Step 10 | Beijing vs. Others | Others | 64 | 18 | 78.0 |
| | | Beijing | 15 | 114 | 88.4 |
| | Overall Percentage | | | | 84.4 |
| Step 11 | Beijing vs. Others | Others | 64 | 18 | 78.0 |
| | | Beijing | 16 | 113 | 87.6 |
| | Overall Percentage | | | | 83.9 |
| Step 12 | Beijing vs. Others | Others | 63 | 19 | 76.8 |
| | | Beijing | 16 | 113 | 87.6 |
| | Overall Percentage | | | | 83.4 |
| Step 13 | Beijing vs. Others | Others | 60 | 22 | 73.2 |
| | | Beijing | 18 | 111 | 86.0 |
| | Overall Percentage | | | | 81.0 |
| Step 14 | Beijing vs. Others | Others | 59 | 23 | 72.0 |
| | | Beijing | 15 | 114 | 88.4 |
| | Overall Percentage | | | | 82.0 |
| Step 15 | Beijing vs. Others | Others | 59 | 23 | 72.0 |
| | | Beijing | 15 | 114 | 88.4 |
| | Overall Percentage | | | | 82.0 |

a. The cut value is .500

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 1[a] | REDTRANS(1) | .820 | .995 | .679 | 1 | .410 | 2.270 | .323 | 15.951 |
| | REGPREV | | | .819 | 2 | .664 | | | |
| | REGPREV(1) | .422 | .749 | .318 | 1 | .573 | 1.526 | .352 | 6.616 |
| | REGPREV(2) | -.103 | .734 | .020 | 1 | .889 | .902 | .214 | 3.805 |
| | REGGROUP(1) | .861 | .514 | 2.803 | 1 | .094 | 2.366 | .863 | 6.482 |
| | ENTRY | | | 33.891 | 3 | .000 | | | |
| | ENTRY(1) | 1.365 | .732 | 3.480 | 1 | .062 | 3.914 | .933 | 16.419 |
| | ENTRY(2) | -1.170 | .679 | 2.972 | 1 | .085 | .310 | .082 | 1.174 |
| | ENTRY(3) | -3.261 | 1.132 | 8.307 | 1 | .004 | .038 | .004 | .352 |
| | ENTRYDUR | -.043 | .074 | .336 | 1 | .562 | .958 | .829 | 1.107 |
| | PLACE2RE | | | 5.033 | 3 | .169 | | | |
| | PLACE2RE(1) | .262 | 1.045 | .063 | 1 | .802 | 1.299 | .168 | 10.072 |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 1[a] | PLACE2RE(2) | .794 | .950 | .698 | 1 | .403 | 2.211 | .344 | 14.225 |
| | PLACE2RE(3) | -.592 | .814 | .528 | 1 | .467 | .553 | .112 | 2.729 |
| | TOTALDUR | -.008 | .033 | .062 | 1 | .803 | .992 | .929 | 1.059 |
| | REGATTRA | | | 3.494 | 2 | .174 | | | |
| | REGATTRA(1) | -1.444 | 1.167 | 1.532 | 1 | .216 | .236 | .024 | 2.322 |
| | REGATTRA(2) | -2.147 | 1.243 | 2.984 | 1 | .084 | .117 | .010 | 1.335 |
| | REGDISTA | | | .784 | 2 | .676 | | | |
| | REGDISTA(1) | .926 | 1.141 | .659 | 1 | .417 | 2.525 | .270 | 23.654 |
| | REGDISTA(2) | .460 | 1.030 | .200 | 1 | .655 | 1.584 | .210 | 11.927 |
| | REGORIGI | | | .862 | 3 | .834 | | | |
| | REGORIGI(1) | .610 | 1.277 | .228 | 1 | .633 | 1.841 | .151 | 22.470 |
| | REGORIGI(2) | .223 | 1.340 | .028 | 1 | .868 | 1.250 | .090 | 17.278 |
| | REGORIGI(3) | -.200 | 1.170 | .029 | 1 | .864 | .819 | .083 | 8.117 |
| | ETHNIC(1) | .430 | 1.072 | .161 | 1 | .688 | 1.537 | .188 | 12.564 |
| | GENDER(1) | .266 | .458 | .338 | 1 | .561 | 1.305 | .532 | 3.202 |
| | REGSPEND | | | 1.224 | 2 | .542 | | | |
| | REGSPEND(1) | .594 | .695 | .732 | 1 | .392 | 1.812 | .464 | 7.069 |
| | REGSPEND(2) | -.264 | .660 | .160 | 1 | .689 | .768 | .211 | 2.801 |
| | REGEDUCA | | | 5.118 | 2 | .077 | | | |
| | REGEDUCA(1) | 1.474 | .706 | 4.354 | 1 | .037 | 4.365 | 1.094 | 17.424 |
| | REGEDUCA(2) | .952 | .535 | 3.164 | 1 | .075 | 2.592 | .908 | 7.400 |
| | REGINCOM | | | 6.829 | 2 | .033 | | | |
| | REGINCOM(1) | .259 | .552 | .219 | 1 | .640 | 1.295 | .439 | 3.824 |
| | REGINCOM(2) | -1.617 | .715 | 5.112 | 1 | .024 | .198 | .049 | .806 |
| | REGAGE(1) | .084 | .589 | .020 | 1 | .886 | 1.088 | .343 | 3.453 |
| | MARRIAGE(1) | -.136 | .603 | .051 | 1 | .821 | .873 | .268 | 2.843 |
| | UNDER | .146 | .435 | .113 | 1 | .737 | 1.158 | .493 | 2.718 |
| | HARMO | .405 | .325 | 1.548 | 1 | .214 | 1.499 | .792 | 2.835 |
| | Constant | -.870 | 2.359 | .136 | 1 | .712 | .419 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 2[a] | REDTRANS(1) | .819 | .991 | .682 | 1 | .409 | 2.268 | .325 | 15.828 |
| | REGPREV | | | .920 | 2 | .631 | | | |
| | REGPREV(1) | .445 | .732 | .370 | 1 | .543 | 1.561 | .372 | 6.551 |
| | REGPREV(2) | -.096 | .732 | .017 | 1 | .896 | .908 | .216 | 3.817 |
| | REGGROUP(1) | .845 | .502 | 2.833 | 1 | .092 | 2.328 | .870 | 6.230 |
| | ENTRY | | | 33.981 | 3 | .000 | | | |
| | ENTRY(1) | 1.364 | .732 | 3.473 | 1 | .062 | 3.913 | .932 | 16.435 |
| | ENTRY(2) | -1.182 | .674 | 3.075 | 1 | .080 | .307 | .082 | 1.149 |
| | ENTRY(3) | -3.234 | 1.114 | 8.430 | 1 | .004 | .039 | .004 | .350 |
| | ENTRYDUR | -.042 | .074 | .327 | 1 | .568 | .959 | .830 | 1.107 |
| | PLACE2RE | | | 5.078 | 3 | .166 | | | |
| | PLACE2RE(1) | .243 | 1.036 | .055 | 1 | .815 | 1.275 | .167 | 9.714 |
| | PLACE2RE(2) | .773 | .938 | .680 | 1 | .410 | 2.167 | .345 | 13.628 |
| | PLACE2RE(3) | -.597 | .813 | .538 | 1 | .463 | .551 | .112 | 2.711 |
| | TOTALDUR | -.008 | .033 | .063 | 1 | .802 | .992 | .929 | 1.059 |
| | REGATTRA | | | 3.532 | 2 | .171 | | | |
| | REGATTRA(1) | -1.440 | 1.171 | 1.512 | 1 | .219 | .237 | .024 | 2.351 |
| | REGATTRA(2) | -2.151 | 1.246 | 2.979 | 1 | .084 | .116 | .010 | 1.338 |
| | REGDISTA | | | .772 | 2 | .680 | | | |
| | REGDISTA(1) | .920 | 1.141 | .650 | 1 | .420 | 2.508 | .268 | 23.466 |
| | REGDISTA(2) | .458 | 1.030 | .198 | 1 | .657 | 1.581 | .210 | 11.904 |
| | REGORIGI | | | .851 | 3 | .837 | | | |
| | REGORIGI(1) | .598 | 1.276 | .219 | 1 | .640 | 1.818 | .149 | 22.185 |
| | REGORIGI(2) | .214 | 1.341 | .025 | 1 | .873 | 1.238 | .089 | 17.151 |
| | REGORIGI(3) | -.209 | 1.171 | .032 | 1 | .858 | .811 | .082 | 8.048 |
| | ETHNIC(1) | .447 | 1.067 | .175 | 1 | .676 | 1.563 | .193 | 12.659 |
| | GENDER(1) | .257 | .453 | .321 | 1 | .571 | 1.293 | .532 | 3.143 |
| | REGSPEND | | | 1.250 | 2 | .535 | | | |
| | REGSPEND(1) | .612 | .684 | .800 | 1 | .371 | 1.844 | .483 | 7.044 |
| | REGSPEND(2) | -.249 | .652 | .146 | 1 | .702 | .780 | .217 | 2.795 |
| | REGEDUCA | | | 5.111 | 2 | .078 | | | |
| | REGEDUCA(1) | 1.463 | .701 | 4.360 | 1 | .037 | 4.318 | 1.094 | 17.043 |
| | REGEDUCA(2) | .959 | .534 | 3.227 | 1 | .072 | 2.608 | .916 | 7.423 |
| | REGINCOM | | | 6.817 | 2 | .033 | | | |
| | REGINCOM(1) | .258 | .553 | .218 | 1 | .640 | 1.294 | .438 | 3.823 |
| | REGINCOM(2) | -1.614 | .714 | 5.101 | 1 | .024 | .199 | .049 | .808 |
| | MARRIAGE(1) | -.102 | .554 | .034 | 1 | .853 | .903 | .305 | 2.675 |
| | UNDER | .145 | .435 | .111 | 1 | .739 | 1.156 | .493 | 2.714 |
| | HARMO | .406 | .326 | 1.546 | 1 | .214 | 1.500 | .792 | 2.844 |
| | Constant | -.834 | 2.348 | .126 | 1 | .722 | .434 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 3[a] | REDTRANS(1) | .780 | .973 | .642 | 1 | .423 | 2.181 | .324 | 14.680 |
| | REGPREV | | | .889 | 2 | .641 | | | |
| | REGPREV(1) | .429 | .724 | .350 | 1 | .554 | 1.535 | .371 | 6.350 |
| | REGPREV(2) | -.094 | .730 | .016 | 1 | .898 | .911 | .218 | 3.811 |
| | REGGROUP(1) | .872 | .482 | 3.267 | 1 | .071 | 2.391 | .929 | 6.154 |
| | ENTRY | | | 34.086 | 3 | .000 | | | |
| | ENTRY(1) | 1.348 | .727 | 3.435 | 1 | .064 | 3.850 | .925 | 16.021 |
| | ENTRY(2) | -1.179 | .675 | 3.054 | 1 | .081 | .308 | .082 | 1.154 |
| | ENTRY(3) | -3.260 | 1.109 | 8.635 | 1 | .003 | .038 | .004 | .338 |
| | ENTRYDUR | -.041 | .073 | .309 | 1 | .578 | .960 | .832 | 1.108 |
| | PLACE2RE | | | 5.056 | 3 | .168 | | | |
| | PLACE2RE(1) | .224 | 1.031 | .047 | 1 | .828 | 1.251 | .166 | 9.428 |
| | PLACE2RE(2) | .761 | .935 | .662 | 1 | .416 | 2.139 | .342 | 13.367 |
| | PLACE2RE(3) | -.607 | .811 | .561 | 1 | .454 | .545 | .111 | 2.669 |
| | TOTALDUR | -.010 | .033 | .084 | 1 | .771 | .990 | .929 | 1.056 |
| | REGATTRA | | | 3.534 | 2 | .171 | | | |
| | REGATTRA(1) | -1.458 | 1.162 | 1.575 | 1 | .210 | .233 | .024 | 2.269 |
| | REGATTRA(2) | -2.156 | 1.241 | 3.021 | 1 | .082 | .116 | .010 | 1.317 |
| | REGDISTA | | | .753 | 2 | .686 | | | |
| | REGDISTA(1) | .899 | 1.136 | .626 | 1 | .429 | 2.456 | .265 | 22.771 |
| | REGDISTA(2) | .435 | 1.023 | .180 | 1 | .671 | 1.545 | .208 | 11.478 |
| | REGORIGI | | | .868 | 3 | .833 | | | |
| | REGORIGI(1) | .605 | 1.273 | .226 | 1 | .634 | 1.832 | .151 | 22.215 |
| | REGORIGI(2) | .207 | 1.338 | .024 | 1 | .877 | 1.230 | .089 | 16.942 |
| | REGORIGI(3) | -.197 | 1.167 | .029 | 1 | .866 | .821 | .083 | 8.080 |
| | ETHNIC(1) | .434 | 1.064 | .166 | 1 | .683 | 1.544 | .192 | 12.418 |
| | GENDER(1) | .265 | .451 | .346 | 1 | .556 | 1.304 | .539 | 3.156 |
| | REGSPEND | | | 1.219 | 2 | .544 | | | |
| | REGSPEND(1) | .589 | .673 | .767 | 1 | .381 | 1.802 | .482 | 6.736 |
| | REGSPEND(2) | -.252 | .652 | .150 | 1 | .699 | .777 | .217 | 2.786 |
| | REGEDUCA | | | 5.091 | 2 | .078 | | | |
| | REGEDUCA(1) | 1.463 | .700 | 4.361 | 1 | .037 | 4.318 | 1.094 | 17.044 |
| | REGEDUCA(2) | .939 | .522 | 3.237 | 1 | .072 | 2.557 | .920 | 7.108 |
| | REGINCOM | | | 6.798 | 2 | .033 | | | |
| | REGINCOM(1) | .238 | .543 | .193 | 1 | .660 | 1.269 | .438 | 3.676 |
| | REGINCOM(2) | -1.621 | .713 | 5.168 | 1 | .023 | .198 | .049 | .800 |
| | UNDER | .144 | .435 | .109 | 1 | .741 | 1.155 | .493 | 2.707 |
| | HARMO | .399 | .323 | 1.534 | 1 | .216 | 1.491 | .792 | 2.806 |
| | Constant | -.756 | 2.311 | .107 | 1 | .743 | .469 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 4[a] | REDTRANS(1) | .734 | .952 | .594 | 1 | .441 | 2.084 | .322 | 13.477 |
| | REGPREV | | | .849 | 2 | .654 | | | |
| | REGPREV(1) | .469 | .712 | .433 | 1 | .510 | 1.598 | .396 | 6.449 |
| | REGPREV(2) | -.017 | .715 | .001 | 1 | .981 | .983 | .242 | 3.992 |
| | REGGROUP(1) | .956 | .472 | 4.101 | 1 | .043 | 2.602 | 1.031 | 6.564 |
| | ENTRY | | | 34.870 | 3 | .000 | | | |
| | ENTRY(1) | 1.440 | .712 | 4.094 | 1 | .043 | 4.220 | 1.046 | 17.023 |
| | ENTRY(2) | -1.124 | .667 | 2.837 | 1 | .092 | .325 | .088 | 1.202 |
| | ENTRY(3) | -3.144 | 1.088 | 8.353 | 1 | .004 | .043 | .005 | .363 |
| | ENTRYDUR | -.042 | .072 | .347 | 1 | .556 | .959 | .833 | 1.104 |
| | PLACE2RE | | | 4.701 | 3 | .195 | | | |
| | PLACE2RE(1) | .312 | .994 | .099 | 1 | .754 | 1.366 | .195 | 9.594 |
| | PLACE2RE(2) | .813 | .896 | .823 | 1 | .364 | 2.256 | .389 | 13.068 |
| | PLACE2RE(3) | -.439 | .784 | .313 | 1 | .576 | .645 | .139 | 3.001 |
| | TOTALDUR | -.005 | .030 | .029 | 1 | .864 | .995 | .939 | 1.054 |
| | REGATTRA | | | 3.516 | 2 | .172 | | | |
| | REGATTRA(1) | -1.414 | 1.099 | 1.655 | 1 | .198 | .243 | .028 | 2.096 |
| | REGATTRA(2) | -2.109 | 1.200 | 3.088 | 1 | .079 | .121 | .012 | 1.276 |
| | REGDISTA | | | 1.932 | 2 | .381 | | | |
| | REGDISTA(1) | 1.065 | 1.116 | .910 | 1 | .340 | 2.901 | .325 | 25.869 |
| | REGDISTA(2) | .317 | 1.011 | .098 | 1 | .754 | 1.373 | .189 | 9.957 |
| | ETHNIC(1) | .640 | .838 | .583 | 1 | .445 | 1.896 | .367 | 9.801 |
| | GENDER(1) | .256 | .448 | .327 | 1 | .568 | 1.292 | .537 | 3.109 |
| | REGSPEND | | | 1.083 | 2 | .582 | | | |
| | REGSPEND(1) | .493 | .650 | .575 | 1 | .448 | 1.637 | .458 | 5.856 |
| | REGSPEND(2) | -.280 | .640 | .191 | 1 | .662 | .756 | .215 | 2.652 |
| | REGEDUCA | | | 4.743 | 2 | .093 | | | |
| | REGEDUCA(1) | 1.285 | .653 | 3.872 | 1 | .049 | 3.615 | 1.005 | 13.003 |
| | REGEDUCA(2) | .922 | .508 | 3.290 | 1 | .070 | 2.513 | .928 | 6.803 |
| | REGINCOM | | | 7.463 | 2 | .024 | | | |
| | REGINCOM(1) | .217 | .545 | .159 | 1 | .690 | 1.243 | .427 | 3.617 |
| | REGINCOM(2) | -1.679 | .700 | 5.758 | 1 | .016 | .187 | .047 | .735 |
| | UNDER | .228 | .387 | .349 | 1 | .555 | 1.257 | .589 | 2.683 |
| | HARMO | .336 | .288 | 1.361 | 1 | .243 | 1.399 | .796 | 2.461 |
| | Constant | -.876 | 2.206 | .158 | 1 | .691 | .416 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 5[a] | REDTRANS(1) | .781 | .911 | .736 | 1 | .391 | 2.185 | .366 | 13.026 |
| | REGPREV | | | .828 | 2 | .661 | | | |
| | REGPREV(1) | .455 | .709 | .412 | 1 | .521 | 1.576 | .393 | 6.322 |
| | REGPREV(2) | -.025 | .714 | .001 | 1 | .972 | .975 | .240 | 3.956 |
| | REGGROUP(1) | .963 | .471 | 4.175 | 1 | .041 | 2.618 | 1.040 | 6.592 |
| | ENTRY | | | 35.026 | 3 | .000 | | | |
| | ENTRY(1) | 1.447 | .710 | 4.153 | 1 | .042 | 4.251 | 1.057 | 17.096 |
| | ENTRY(2) | -1.130 | .666 | 2.877 | 1 | .090 | .323 | .087 | 1.192 |
| | ENTRY(3) | -3.117 | 1.075 | 8.408 | 1 | .004 | .044 | .005 | .364 |
| | ENTRYDUR | -.048 | .064 | .560 | 1 | .454 | .953 | .841 | 1.081 |
| | PLACE2RE | | | 5.032 | 3 | .169 | | | |
| | PLACE2RE(1) | .351 | .968 | .132 | 1 | .717 | 1.421 | .213 | 9.483 |
| | PLACE2RE(2) | .828 | .892 | .861 | 1 | .354 | 2.289 | .398 | 13.160 |
| | PLACE2RE(3) | -.437 | .784 | .311 | 1 | .577 | .646 | .139 | 3.001 |
| | REGATTRA | | | 3.500 | 2 | .174 | | | |
| | REGATTRA(1) | -1.411 | 1.099 | 1.650 | 1 | .199 | .244 | .028 | 2.101 |
| | REGATTRA(2) | -2.105 | 1.200 | 3.076 | 1 | .079 | .122 | .012 | 1.281 |
| | REGDISTA | | | 1.909 | 2 | .385 | | | |
| | REGDISTA(1) | 1.050 | 1.115 | .887 | 1 | .346 | 2.856 | .321 | 25.383 |
| | REGDISTA(2) | .314 | 1.013 | .096 | 1 | .757 | 1.368 | .188 | 9.969 |
| | ETHNIC(1) | .634 | .838 | .572 | 1 | .449 | 1.885 | .365 | 9.751 |
| | GENDER(1) | .258 | .448 | .331 | 1 | .565 | 1.294 | .538 | 3.112 |
| | REGSPEND | | | 1.080 | 2 | .583 | | | |
| | REGSPEND(1) | .506 | .647 | .612 | 1 | .434 | 1.659 | .467 | 5.894 |
| | REGSPEND(2) | -.263 | .632 | .173 | 1 | .678 | .769 | .223 | 2.654 |
| | REGEDUCA | | | 4.776 | 2 | .092 | | | |
| | REGEDUCA(1) | 1.286 | .653 | 3.873 | 1 | .049 | 3.617 | 1.005 | 13.012 |
| | REGEDUCA(2) | .928 | .507 | 3.349 | 1 | .067 | 2.529 | .936 | 6.831 |
| | REGINCOM | | | 7.408 | 2 | .025 | | | |
| | REGINCOM(1) | .215 | .545 | .156 | 1 | .693 | 1.240 | .426 | 3.610 |
| | REGINCOM(2) | -1.673 | .700 | 5.714 | 1 | .017 | .188 | .048 | .740 |
| | UNDER | .230 | .387 | .352 | 1 | .553 | 1.258 | .589 | 2.687 |
| | HARMO | .335 | .288 | 1.354 | 1 | .245 | 1.397 | .795 | 2.455 |
| | Constant | -.968 | 2.142 | .204 | 1 | .651 | .380 | | |
| Step 6[a] | REDTRANS(1) | .653 | .897 | .530 | 1 | .467 | 1.921 | .331 | 11.136 |
| | REGGROUP(1) | .992 | .469 | 4.470 | 1 | .034 | 2.697 | 1.075 | 6.764 |
| | ENTRY | | | 39.647 | 3 | .000 | | | |
| | ENTRY(1) | 1.526 | .703 | 4.708 | 1 | .030 | 4.599 | 1.159 | 18.252 |
| | ENTRY(2) | -1.158 | .667 | 3.016 | 1 | .082 | .314 | .085 | 1.161 |
| | ENTRY(3) | -3.153 | 1.071 | 8.674 | 1 | .003 | .043 | .005 | .348 |
| | ENTRYDUR | -.056 | .063 | .804 | 1 | .370 | .945 | .835 | 1.069 |
| | PLACE2RE | | | 5.246 | 3 | .155 | | | |
| | PLACE2RE(1) | .473 | .949 | .249 | 1 | .618 | 1.605 | .250 | 10.310 |
| | PLACE2RE(2) | .935 | .870 | 1.156 | 1 | .282 | 2.548 | .463 | 14.022 |
| | PLACE2RE(3) | -.351 | .763 | .211 | 1 | .646 | .704 | .158 | 3.145 |
| | REGATTRA | | | 3.215 | 2 | .200 | | | |
| | REGATTRA(1) | -1.275 | 1.023 | 1.553 | 1 | .213 | .280 | .038 | 2.076 |
| | REGATTRA(2) | -1.928 | 1.128 | 2.922 | 1 | .087 | .145 | .016 | 1.326 |
| | REGDISTA | | | 2.375 | 2 | .305 | | | |
| | REGDISTA(1) | 1.129 | 1.104 | 1.047 | 1 | .306 | 3.094 | .356 | 26.916 |
| | REGDISTA(2) | .319 | 1.006 | .100 | 1 | .751 | 1.376 | .191 | 9.887 |
| | ETHNIC(1) | .352 | .760 | .214 | 1 | .643 | 1.422 | .321 | 6.306 |
| | GENDER(1) | .252 | .445 | .321 | 1 | .571 | 1.287 | .538 | 3.075 |
| | REGSPEND | | | .924 | 2 | .630 | | | |
| | REGSPEND(1) | .456 | .632 | .521 | 1 | .470 | 1.578 | .458 | 5.440 |
| | REGSPEND(2) | -.248 | .626 | .157 | 1 | .692 | .780 | .229 | 2.661 |
| | REGEDUCA | | | 4.829 | 2 | .089 | | | |
| | REGEDUCA(1) | 1.309 | .651 | 4.037 | 1 | .045 | 3.701 | 1.033 | 13.268 |
| | REGEDUCA(2) | .904 | .503 | 3.230 | 1 | .072 | 2.468 | .921 | 6.612 |
| | REGINCOM | | | 7.274 | 2 | .026 | | | |
| | REGINCOM(1) | .177 | .539 | .107 | 1 | .743 | 1.193 | .415 | 3.430 |
| | REGINCOM(2) | -1.674 | .700 | 5.726 | 1 | .017 | .187 | .048 | .739 |
| | UNDER | .229 | .380 | .365 | 1 | .546 | 1.258 | .598 | 2.647 |
| | HARMO | .317 | .274 | 1.340 | 1 | .247 | 1.373 | .803 | 2.349 |
| | Constant | -.796 | 1.940 | .169 | 1 | .681 | .451 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 7[a] | REDTRANS(1) | .583 | .875 | .445 | 1 | .505 | 1.792 | .323 | 9.948 |
| | REGGROUP(1) | .982 | .467 | 4.422 | 1 | .035 | 2.669 | 1.069 | 6.666 |
| | ENTRY | | | 40.237 | 3 | .000 | | | |
| | ENTRY(1) | 1.586 | .693 | 5.245 | 1 | .022 | 4.886 | 1.257 | 18.991 |
| | ENTRY(2) | -1.115 | .659 | 2.861 | 1 | .091 | .328 | .090 | 1.194 |
| | ENTRY(3) | -3.092 | 1.057 | 8.551 | 1 | .003 | .045 | .006 | .361 |
| | ENTRYDUR | -.060 | .063 | .910 | 1 | .340 | .942 | .833 | 1.065 |
| | PLACE2RE | | | 5.337 | 3 | .149 | | | |
| | PLACE2RE(1) | .474 | .949 | .249 | 1 | .618 | 1.606 | .250 | 10.321 |
| | PLACE2RE(2) | .938 | .866 | 1.172 | 1 | .279 | 2.554 | .468 | 13.953 |
| | PLACE2RE(3) | -.357 | .762 | .220 | 1 | .639 | .700 | .157 | 3.112 |
| | REGATTRA | | | 3.051 | 2 | .218 | | | |
| | REGATTRA(1) | -1.256 | 1.020 | 1.516 | 1 | .218 | .285 | .039 | 2.103 |
| | REGATTRA(2) | -1.860 | 1.115 | 2.784 | 1 | .095 | .156 | .017 | 1.384 |
| | REGDISTA | | | 2.294 | 2 | .318 | | | |
| | REGDISTA(1) | 1.067 | 1.091 | .957 | 1 | .328 | 2.907 | .343 | 24.658 |
| | REGDISTA(2) | .264 | .993 | .071 | 1 | .791 | 1.302 | .186 | 9.117 |
| | GENDER(1) | .250 | .444 | .316 | 1 | .574 | 1.283 | .538 | 3.062 |
| | REGSPEND | | | 1.187 | 2 | .552 | | | |
| | REGSPEND(1) | .532 | .613 | .753 | 1 | .386 | 1.702 | .512 | 5.655 |
| | REGSPEND(2) | -.237 | .622 | .145 | 1 | .703 | .789 | .233 | 2.672 |
| | REGEDUCA | | | 4.671 | 2 | .097 | | | |
| | REGEDUCA(1) | 1.277 | .645 | 3.924 | 1 | .048 | 3.585 | 1.014 | 12.683 |
| | REGEDUCA(2) | .861 | .492 | 3.059 | 1 | .080 | 2.365 | .901 | 6.204 |
| | REGINCOM | | | 7.304 | 2 | .026 | | | |
| | REGINCOM(1) | .153 | .534 | .082 | 1 | .774 | 1.165 | .410 | 3.316 |
| | REGINCOM(2) | -1.692 | .699 | 5.857 | 1 | .016 | .184 | .047 | .725 |
| | UNDER | .129 | .310 | .174 | 1 | .677 | 1.138 | .620 | 2.088 |
| | HARMO | .295 | .271 | 1.189 | 1 | .276 | 1.344 | .790 | 2.285 |
| | Constant | -.621 | 1.897 | .107 | 1 | .743 | .537 | | |
| Step 8[a] | REDTRANS(1) | .572 | .868 | .434 | 1 | .510 | 1.772 | .323 | 9.719 |
| | REGGROUP(1) | 1.007 | .463 | 4.736 | 1 | .030 | 2.738 | 1.105 | 6.782 |
| | ENTRY | | | 42.046 | 3 | .000 | | | |
| | ENTRY(1) | 1.644 | .680 | 5.851 | 1 | .016 | 5.174 | 1.366 | 19.597 |
| | ENTRY(2) | -1.091 | .655 | 2.771 | 1 | .096 | .336 | .093 | 1.214 |
| | ENTRY(3) | -3.093 | 1.058 | 8.550 | 1 | .003 | .045 | .006 | .361 |
| | ENTRYDUR | -.063 | .062 | 1.036 | 1 | .309 | .939 | .831 | 1.060 |
| | PLACE2RE | | | 5.241 | 3 | .155 | | | |
| | PLACE2RE(1) | .430 | .948 | .206 | 1 | .650 | 1.537 | .240 | 9.863 |
| | PLACE2RE(2) | .924 | .872 | 1.122 | 1 | .289 | 2.519 | .456 | 13.927 |
| | PLACE2RE(3) | -.360 | .769 | .220 | 1 | .639 | .697 | .155 | 3.147 |
| | REGATTRA | | | 3.306 | 2 | .191 | | | |
| | REGATTRA(1) | -1.340 | 1.009 | 1.764 | 1 | .184 | .262 | .036 | 1.891 |
| | REGATTRA(2) | -1.943 | 1.106 | 3.086 | 1 | .079 | .143 | .016 | 1.252 |
| | REGDISTA | | | 4.051 | 2 | .132 | | | |
| | REGDISTA(1) | 1.172 | 1.059 | 1.226 | 1 | .268 | 3.229 | .405 | 25.714 |
| | REGDISTA(2) | .248 | .987 | .063 | 1 | .802 | 1.282 | .185 | 8.867 |
| | GENDER(1) | .232 | .442 | .274 | 1 | .601 | 1.260 | .530 | 3.000 |
| | REGSPEND | | | 1.085 | 2 | .581 | | | |
| | REGSPEND(1) | .486 | .600 | .656 | 1 | .418 | 1.626 | .501 | 5.274 |
| | REGSPEND(2) | -.248 | .623 | .158 | 1 | .691 | .781 | .230 | 2.646 |
| | REGEDUCA | | | 4.544 | 2 | .103 | | | |
| | REGEDUCA(1) | 1.270 | .645 | 3.878 | 1 | .049 | 3.562 | 1.006 | 12.611 |
| | REGEDUCA(2) | .828 | .486 | 2.905 | 1 | .088 | 2.288 | .883 | 5.926 |
| | REGINCOM | | | 7.741 | 2 | .021 | | | |
| | REGINCOM(1) | .145 | .533 | .074 | 1 | .785 | 1.156 | .407 | 3.285 |
| | REGINCOM(2) | -1.738 | .693 | 6.288 | 1 | .012 | .176 | .045 | .684 |
| | HARMO | .312 | .275 | 1.293 | 1 | .256 | 1.367 | .798 | 2.342 |
| | Constant | -.534 | 1.891 | .080 | 1 | .778 | .587 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 9[a] | REDTRANS(1) | .591 | .870 | .462 | 1 | .497 | 1.806 | .328 | 9.925 |
| | REGGROUP(1) | 1.011 | .462 | 4.777 | 1 | .029 | 2.747 | 1.110 | 6.800 |
| | ENTRY | | | 42.270 | 3 | .000 | | | |
| | ENTRY(1) | 1.578 | .665 | 5.628 | 1 | .018 | 4.844 | 1.316 | 17.834 |
| | ENTRY(2) | -1.132 | .651 | 3.026 | 1 | .082 | .322 | .090 | 1.154 |
| | ENTRY(3) | -3.098 | 1.053 | 8.663 | 1 | .003 | .045 | .006 | .355 |
| | ENTRYDUR | -.063 | .063 | .994 | 1 | .319 | .939 | .831 | 1.062 |
| | PLACE2RE | | | 5.229 | 3 | .156 | | | |
| | PLACE2RE(1) | .425 | .948 | .201 | 1 | .654 | 1.529 | .238 | 9.808 |
| | PLACE2RE(2) | .905 | .872 | 1.078 | 1 | .299 | 2.473 | .448 | 13.658 |
| | PLACE2RE(3) | -.374 | .769 | .236 | 1 | .627 | .688 | .152 | 3.106 |
| | REGATTRA | | | 3.414 | 2 | .181 | | | |
| | REGATTRA(1) | -1.318 | 1.002 | 1.729 | 1 | .189 | .268 | .038 | 1.909 |
| | REGATTRA(2) | -1.943 | 1.096 | 3.141 | 1 | .076 | .143 | .017 | 1.228 |
| | REGDISTA | | | 4.030 | 2 | .133 | | | |
| | REGDISTA(1) | 1.184 | 1.056 | 1.258 | 1 | .262 | 3.268 | .413 | 25.878 |
| | REGDISTA(2) | .269 | .984 | .075 | 1 | .785 | 1.308 | .190 | 8.999 |
| | REGSPEND | | | 1.349 | 2 | .509 | | | |
| | REGSPEND(1) | .515 | .596 | .747 | 1 | .388 | 1.674 | .520 | 5.383 |
| | REGSPEND(2) | -.296 | .614 | .233 | 1 | .630 | .744 | .223 | 2.477 |
| | REGEDUCA | | | 4.633 | 2 | .099 | | | |
| | REGEDUCA(1) | 1.284 | .644 | 3.973 | 1 | .046 | 3.611 | 1.022 | 12.761 |
| | REGEDUCA(2) | .827 | .484 | 2.921 | 1 | .087 | 2.286 | .886 | 5.898 |
| | REGINCOM | | | 7.913 | 2 | .019 | | | |
| | REGINCOM(1) | .064 | .508 | .016 | 1 | .899 | 1.066 | .394 | 2.887 |
| | REGINCOM(2) | -1.798 | .684 | 6.913 | 1 | .009 | .166 | .043 | .633 |
| | HARMO | .303 | .270 | 1.253 | 1 | .263 | 1.353 | .797 | 2.299 |
| | Constant | -.367 | 1.846 | .039 | 1 | .843 | .693 | | |
| Step 10[a] | REDTRANS(1) | .568 | .869 | .427 | 1 | .514 | 1.764 | .321 | 9.691 |
| | REGGROUP(1) | 1.050 | .457 | 5.274 | 1 | .022 | 2.856 | 1.166 | 6.995 |
| | ENTRY | | | 43.931 | 3 | .000 | | | |
| | ENTRY(1) | 1.544 | .647 | 5.702 | 1 | .017 | 4.684 | 1.319 | 16.639 |
| | ENTRY(2) | -1.216 | .618 | 3.873 | 1 | .049 | .296 | .088 | .995 |
| | ENTRY(3) | -3.089 | 1.022 | 9.130 | 1 | .003 | .046 | .006 | .338 |
| | ENTRYDUR | -.071 | .064 | 1.243 | 1 | .265 | .931 | .822 | 1.055 |
| | PLACE2RE | | | 4.943 | 3 | .176 | | | |
| | PLACE2RE(1) | .568 | .932 | .371 | 1 | .542 | 1.764 | .284 | 10.957 |
| | PLACE2RE(2) | .884 | .857 | 1.064 | 1 | .302 | 2.421 | .451 | 12.996 |
| | PLACE2RE(3) | -.313 | .758 | .171 | 1 | .680 | .731 | .165 | 3.231 |
| | REGATTRA | | | 3.413 | 2 | .182 | | | |
| | REGATTRA(1) | -1.448 | 1.000 | 2.100 | 1 | .147 | .235 | .033 | 1.666 |
| | REGATTRA(2) | -1.992 | 1.097 | 3.298 | 1 | .069 | .136 | .016 | 1.171 |
| | REGDISTA | | | 3.582 | 2 | .167 | | | |
| | REGDISTA(1) | 1.051 | 1.049 | 1.003 | 1 | .317 | 2.860 | .366 | 22.356 |
| | REGDISTA(2) | .194 | .986 | .039 | 1 | .844 | 1.214 | .176 | 8.386 |
| | REGEDUCA | | | 4.694 | 2 | .096 | | | |
| | REGEDUCA(1) | 1.315 | .639 | 4.231 | 1 | .040 | 3.724 | 1.064 | 13.035 |
| | REGEDUCA(2) | .778 | .478 | 2.655 | 1 | .103 | 2.178 | .854 | 5.556 |
| | REGINCOM | | | 7.529 | 2 | .023 | | | |
| | REGINCOM(1) | .065 | .496 | .017 | 1 | .896 | 1.067 | .404 | 2.818 |
| | REGINCOM(2) | -1.740 | .684 | 6.466 | 1 | .011 | .175 | .046 | .671 |
| | HARMO | .286 | .256 | 1.254 | 1 | .263 | 1.332 | .807 | 2.198 |
| | Constant | -.078 | 1.780 | .002 | 1 | .965 | .925 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 11[a] | REGGROUP(1) | 1.111 | .447 | 6.186 | 1 | .013 | 3.039 | 1.266 | 7.296 |
| | ENTRY | | | 46.067 | 3 | .000 | | | |
| | ENTRY(1) | 1.634 | .632 | 6.693 | 1 | .010 | 5.126 | 1.486 | 17.680 |
| | ENTRY(2) | -1.154 | .608 | 3.606 | 1 | .058 | .315 | .096 | 1.038 |
| | ENTRY(3) | -3.130 | 1.024 | 9.352 | 1 | .002 | .044 | .006 | .325 |
| | ENTRYDUR | -.067 | .064 | 1.103 | 1 | .294 | .935 | .825 | 1.060 |
| | PLACE2RE | | | 4.814 | 3 | .186 | | | |
| | PLACE2RE(1) | .566 | .931 | .370 | 1 | .543 | 1.762 | .284 | 10.928 |
| | PLACE2RE(2) | .957 | .855 | 1.254 | 1 | .263 | 2.604 | .488 | 13.902 |
| | PLACE2RE(3) | -.240 | .756 | .101 | 1 | .751 | .787 | .179 | 3.460 |
| | REGATTRA | | | 3.859 | 2 | .145 | | | |
| | REGATTRA(1) | -1.499 | .990 | 2.292 | 1 | .130 | .223 | .032 | 1.555 |
| | REGATTRA(2) | -2.082 | 1.082 | 3.700 | 1 | .054 | .125 | .015 | 1.040 |
| | REGDISTA | | | 3.618 | 2 | .164 | | | |
| | REGDISTA(1) | 1.077 | 1.032 | 1.088 | 1 | .297 | 2.935 | .388 | 22.185 |
| | REGDISTA(2) | .216 | .969 | .050 | 1 | .823 | 1.242 | .186 | 8.289 |
| | REGEDUCA | | | 4.550 | 2 | .103 | | | |
| | REGEDUCA(1) | 1.251 | .624 | 4.025 | 1 | .045 | 3.494 | 1.029 | 11.860 |
| | REGEDUCA(2) | .797 | .477 | 2.787 | 1 | .095 | 2.218 | .871 | 5.653 |
| | REGINCOM | | | 7.352 | 2 | .025 | | | |
| | REGINCOM(1) | -.006 | .483 | .000 | 1 | .990 | .994 | .386 | 2.560 |
| | REGINCOM(2) | -1.743 | .684 | 6.500 | 1 | .011 | .175 | .046 | .668 |
| | HARMO | .291 | .253 | 1.326 | 1 | .250 | 1.338 | .815 | 2.194 |
| | Constant | .351 | 1.645 | .045 | 1 | .831 | 1.420 | | |
| Step 12[a] | REGGROUP(1) | 1.125 | .443 | 6.455 | 1 | .011 | 3.081 | 1.293 | 7.339 |
| | ENTRY | | | 45.768 | 3 | .000 | | | |
| | ENTRY(1) | 1.516 | .618 | 6.022 | 1 | .014 | 4.553 | 1.357 | 15.278 |
| | ENTRY(2) | -1.220 | .603 | 4.092 | 1 | .043 | .295 | .091 | .963 |
| | ENTRY(3) | -3.159 | 1.020 | 9.593 | 1 | .002 | .042 | .006 | .313 |
| | PLACE2RE | | | 4.407 | 3 | .221 | | | |
| | PLACE2RE(1) | .367 | .912 | .162 | 1 | .687 | 1.443 | .242 | 8.622 |
| | PLACE2RE(2) | .894 | .849 | 1.111 | 1 | .292 | 2.446 | .463 | 12.908 |
| | PLACE2RE(3) | -.269 | .755 | .127 | 1 | .721 | .764 | .174 | 3.354 |
| | REGATTRA | | | 3.465 | 2 | .177 | | | |
| | REGATTRA(1) | -1.410 | 1.021 | 1.907 | 1 | .167 | .244 | .033 | 1.806 |
| | REGATTRA(2) | -1.998 | 1.112 | 3.226 | 1 | .072 | .136 | .015 | 1.200 |
| | REGDISTA | | | 3.373 | 2 | .185 | | | |
| | REGDISTA(1) | .974 | 1.030 | .894 | 1 | .344 | 2.648 | .352 | 19.922 |
| | REGDISTA(2) | .145 | .969 | .022 | 1 | .881 | 1.156 | .173 | 7.719 |
| | REGEDUCA | | | 4.649 | 2 | .098 | | | |
| | REGEDUCA(1) | 1.267 | .619 | 4.188 | 1 | .041 | 3.552 | 1.055 | 11.957 |
| | REGEDUCA(2) | .784 | .474 | 2.733 | 1 | .098 | 2.191 | .865 | 5.551 |
| | REGINCOM | | | 7.270 | 2 | .026 | | | |
| | REGINCOM(1) | -.079 | .474 | .027 | 1 | .868 | .924 | .365 | 2.340 |
| | REGINCOM(2) | -1.765 | .683 | 6.669 | 1 | .010 | .171 | .045 | .653 |
| | HARMO | .314 | .257 | 1.489 | 1 | .222 | 1.369 | .827 | 2.265 |
| | Constant | .272 | 1.659 | .027 | 1 | .870 | 1.313 | | |
| Step 13[a] | REGGROUP(1) | .983 | .423 | 5.407 | 1 | .020 | 2.671 | 1.167 | 6.115 |
| | ENTRY | | | 48.120 | 3 | .000 | | | |
| | ENTRY(1) | 1.602 | .551 | 8.465 | 1 | .004 | 4.963 | 1.687 | 14.605 |
| | ENTRY(2) | -1.214 | .559 | 4.715 | 1 | .030 | .297 | .099 | .889 |
| | ENTRY(3) | -3.035 | .948 | 10.245 | 1 | .001 | .048 | .007 | .308 |
| | REGATTRA | | | 3.839 | 2 | .147 | | | |
| | REGATTRA(1) | -1.177 | .969 | 1.476 | 1 | .224 | .308 | .046 | 2.058 |
| | REGATTRA(2) | -1.901 | 1.065 | 3.189 | 1 | .074 | .149 | .019 | 1.204 |
| | REGDISTA | | | 2.508 | 2 | .285 | | | |
| | REGDISTA(1) | .852 | .972 | .769 | 1 | .380 | 2.345 | .349 | 15.762 |
| | REGDISTA(2) | .192 | .933 | .042 | 1 | .837 | 1.211 | .195 | 7.542 |
| | REGEDUCA | | | 6.622 | 2 | .036 | | | |
| | REGEDUCA(1) | 1.435 | .606 | 5.614 | 1 | .018 | 4.200 | 1.281 | 13.767 |
| | REGEDUCA(2) | .970 | .462 | 4.411 | 1 | .036 | 2.639 | 1.067 | 6.527 |
| | REGINCOM | | | 7.216 | 2 | .027 | | | |
| | REGINCOM(1) | .047 | .464 | .010 | 1 | .920 | 1.048 | .422 | 2.602 |
| | REGINCOM(2) | -1.514 | .607 | 6.209 | 1 | .013 | .220 | .067 | .724 |
| | HARMO | .338 | .271 | 1.552 | 1 | .213 | 1.402 | .824 | 2.386 |
| | Constant | .089 | 1.358 | .004 | 1 | .948 | 1.093 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 14[a] | REGGROUP(1) | 1.002 | .420 | 5.698 | 1 | .017 | 2.725 | 1.196 | 6.204 |
| | ENTRY | | | 49.730 | 3 | .000 | | | |
| | ENTRY(1) | 1.712 | .534 | 10.300 | 1 | .001 | 5.541 | 1.948 | 15.766 |
| | ENTRY(2) | -1.050 | .536 | 3.845 | 1 | .050 | .350 | .122 | .999 |
| | ENTRY(3) | -3.080 | .938 | 10.786 | 1 | .001 | .046 | .007 | .289 |
| | REGATTRA | | | 4.733 | 2 | .094 | | | |
| | REGATTRA(1) | -1.199 | .957 | 1.569 | 1 | .210 | .302 | .046 | 1.968 |
| | REGATTRA(2) | -2.035 | 1.055 | 3.719 | 1 | .054 | .131 | .017 | 1.034 |
| | REGEDUCA | | | 5.411 | 2 | .067 | | | |
| | REGEDUCA(1) | 1.266 | .587 | 4.648 | 1 | .031 | 3.546 | 1.122 | 11.208 |
| | REGEDUCA(2) | .837 | .452 | 3.437 | 1 | .064 | 2.310 | .953 | 5.596 |
| | REGINCOM | | | 7.571 | 2 | .023 | | | |
| | REGINCOM(1) | -.053 | .452 | .014 | 1 | .906 | .948 | .391 | 2.299 |
| | REGINCOM(2) | -1.576 | .599 | 6.915 | 1 | .009 | .207 | .064 | .669 |
| | HARMO | .258 | .250 | 1.070 | 1 | .301 | 1.295 | .794 | 2.113 |
| | Constant | .627 | 1.084 | .335 | 1 | .563 | 1.872 | | |
| Step 15[a] | REGGROUP(1) | 1.056 | .417 | 6.409 | 1 | .011 | 2.875 | 1.269 | 6.513 |
| | ENTRY | | | 50.050 | 3 | .000 | | | |
| | ENTRY(1) | 1.581 | .517 | 9.357 | 1 | .002 | 4.858 | 1.764 | 13.373 |
| | ENTRY(2) | -1.164 | .526 | 4.907 | 1 | .027 | .312 | .111 | .875 |
| | ENTRY(3) | -3.287 | .922 | 12.702 | 1 | .000 | .037 | .006 | .228 |
| | REGATTRA | | | 5.190 | 2 | .075 | | | |
| | REGATTRA(1) | -1.185 | .962 | 1.516 | 1 | .218 | .306 | .046 | 2.016 |
| | REGATTRA(2) | -2.087 | 1.059 | 3.881 | 1 | .049 | .124 | .016 | .989 |
| | REGEDUCA | | | 5.016 | 2 | .081 | | | |
| | REGEDUCA(1) | 1.161 | .573 | 4.108 | 1 | .043 | 3.193 | 1.039 | 9.811 |
| | REGEDUCA(2) | .823 | .446 | 3.409 | 1 | .065 | 2.277 | .951 | 5.454 |
| | REGINCOM | | | 7.852 | 2 | .020 | | | |
| | REGINCOM(1) | .077 | .437 | .031 | 1 | .861 | 1.080 | .458 | 2.542 |
| | REGINCOM(2) | -1.519 | .586 | 6.714 | 1 | .010 | .219 | .069 | .691 |
| | Constant | .683 | 1.085 | .396 | 1 | .529 | 1.980 | | |

a. Variable(s) entered on step 1: REDTRANS, REGPREV, REGGROUP, ENTRY, ENTRYDUR, PLACE2RE, TOTALDUR, REGATTRA, REGDISTA, REGORIGI, ETHNIC, GENDER, REGSPEND, REGEDUCA, REGINCOM, REGAGE, MARRIAGE, UNDER, HARMO.

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 1 | REDTRANS | -83.039 | .681 | 1 | .409 |
| | REGPREV | -83.107 | .819 | 2 | .664 |
| | REGGROUP | -84.134 | 2.873 | 1 | .090 |
| | ENTRY | -106.067 | 46.739 | 3 | .000 |
| | ENTRYDUR | -82.866 | .335 | 1 | .563 |
| | PLACE2RE | -85.367 | 5.337 | 3 | .149 |
| | TOTALDUR | -82.731 | .067 | 1 | .796 |
| | REGATTRA | -84.545 | 3.693 | 2 | .158 |
| | REGDISTA | -83.091 | .786 | 2 | .675 |
| | REGORIGI | -83.138 | .879 | 3 | .831 |
| | ETHNIC | -82.778 | .161 | 1 | .689 |
| | GENDER | -82.868 | .340 | 1 | .560 |
| | REGSPEND | -83.330 | 1.265 | 2 | .531 |
| | REGEDUCA | -85.452 | 5.508 | 2 | .064 |
| | REGINCOM | -86.368 | 7.339 | 2 | .025 |
| | REGAGE | -82.708 | .021 | 1 | .886 |
| | MARRIAGE | -82.724 | .051 | 1 | .821 |
| | UNDER | -82.755 | .114 | 1 | .736 |
| | HARMO | -83.772 | 2.148 | 1 | .143 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 2 | REDTRANS | -83.050 | .684 | 1 | .408 |
| | REGPREV | -83.168 | .919 | 2 | .632 |
| | REGGROUP | -84.162 | 2.907 | 1 | .088 |
| | ENTRY | -106.080 | 46.743 | 3 | .000 |
| | ENTRYDUR | -82.871 | .326 | 1 | .568 |
| | PLACE2RE | -85.392 | 5.367 | 3 | .147 |
| | TOTALDUR | -82.742 | .067 | 1 | .796 |
| | REGATTRA | -84.570 | 3.724 | 2 | .155 |
| | REGDISTA | -83.096 | .775 | 2 | .679 |
| | REGORIGI | -83.142 | .868 | 3 | .833 |
| | ETHNIC | -82.796 | .174 | 1 | .676 |
| | GENDER | -82.870 | .323 | 1 | .570 |
| | REGSPEND | -83.355 | 1.293 | 2 | .524 |
| | REGEDUCA | -85.454 | 5.491 | 2 | .064 |
| | REGINCOM | -86.369 | 7.322 | 2 | .026 |
| | MARRIAGE | -82.725 | .034 | 1 | .853 |
| | UNDER | -82.764 | .112 | 1 | .738 |
| | HARMO | -83.776 | 2.136 | 1 | .144 |
| Step 3 | REDTRANS | -83.050 | .650 | 1 | .420 |
| | REGPREV | -83.168 | .886 | 2 | .642 |
| | REGGROUP | -84.389 | 3.328 | 1 | .068 |
| | ENTRY | -106.112 | 46.774 | 3 | .000 |
| | ENTRYDUR | -82.879 | .308 | 1 | .579 |
| | PLACE2RE | -85.398 | 5.345 | 3 | .148 |
| | TOTALDUR | -82.771 | .092 | 1 | .762 |
| | REGATTRA | -84.593 | 3.734 | 2 | .155 |
| | REGDISTA | -83.104 | .756 | 2 | .685 |
| | REGORIGI | -83.168 | .885 | 3 | .829 |
| | ETHNIC | -82.808 | .166 | 1 | .684 |
| | GENDER | -82.899 | .348 | 1 | .555 |
| | REGSPEND | -83.355 | 1.259 | 2 | .533 |
| | REGEDUCA | -85.454 | 5.457 | 2 | .065 |
| | REGINCOM | -86.372 | 7.294 | 2 | .026 |
| | UNDER | -82.780 | .110 | 1 | .740 |
| | HARMO | -83.782 | 2.114 | 1 | .146 |
| Step 4 | REDTRANS | -83.468 | .601 | 1 | .438 |
| | REGPREV | -83.591 | .847 | 2 | .655 |
| | REGGROUP | -85.275 | 4.215 | 1 | .040 |
| | ENTRY | -107.390 | 48.444 | 3 | .000 |
| | ENTRYDUR | -83.341 | .346 | 1 | .556 |
| | PLACE2RE | -85.646 | 4.957 | 3 | .175 |
| | TOTALDUR | -83.183 | .031 | 1 | .861 |
| | REGATTRA | -85.020 | 3.704 | 2 | .157 |
| | REGDISTA | -84.151 | 1.967 | 2 | .374 |
| | ETHNIC | -83.463 | .591 | 1 | .442 |
| | GENDER | -83.332 | .328 | 1 | .567 |
| | REGSPEND | -83.722 | 1.109 | 2 | .574 |
| | REGEDUCA | -85.680 | 5.024 | 2 | .081 |
| | REGINCOM | -87.223 | 8.110 | 2 | .017 |
| | UNDER | -83.343 | .352 | 1 | .553 |
| | HARMO | -84.087 | 1.839 | 1 | .175 |
| Step 5 | REDTRANS | -83.559 | .752 | 1 | .386 |
| | REGPREV | -83.596 | .826 | 2 | .662 |
| | REGGROUP | -85.326 | 4.287 | 1 | .038 |
| | ENTRY | -107.454 | 48.542 | 3 | .000 |
| | ENTRYDUR | -83.466 | .566 | 1 | .452 |
| | PLACE2RE | -85.848 | 5.331 | 3 | .149 |
| | REGATTRA | -85.028 | 3.690 | 2 | .158 |
| | REGDISTA | -84.151 | 1.936 | 2 | .380 |
| | ETHNIC | -83.473 | .580 | 1 | .446 |
| | GENDER | -83.349 | .332 | 1 | .564 |
| | REGSPEND | -83.736 | 1.107 | 2 | .575 |
| | REGEDUCA | -85.713 | 5.059 | 2 | .080 |
| | REGINCOM | -87.228 | 8.091 | 2 | .018 |
| | UNDER | -83.360 | .355 | 1 | .551 |
| | HARMO | -84.098 | 1.831 | 1 | .176 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 6 | REDTRANS | -83.866 | .540 | 1 | .462 |
| | REGGROUP | -85.891 | 4.591 | 1 | .032 |
| | ENTRY | -112.406 | 57.620 | 3 | .000 |
| | ENTRYDUR | -84.005 | .817 | 1 | .366 |
| | PLACE2RE | -86.378 | 5.564 | 3 | .135 |
| | REGATTRA | -85.278 | 3.365 | 2 | .186 |
| | REGDISTA | -84.808 | 2.425 | 2 | .298 |
| | ETHNIC | -83.704 | .217 | 1 | .642 |
| | GENDER | -83.757 | .322 | 1 | .570 |
| | REGSPEND | -84.067 | .943 | 2 | .624 |
| | REGEDUCA | -86.159 | 5.126 | 2 | .077 |
| | REGINCOM | -87.560 | 7.929 | 2 | .019 |
| | UNDER | -83.780 | .368 | 1 | .544 |
| | HARMO | -84.505 | 1.819 | 1 | .177 |
| Step 7 | REDTRANS | -83.930 | .451 | 1 | .502 |
| | REGGROUP | -85.972 | 4.535 | 1 | .033 |
| | ENTRY | -113.137 | 58.865 | 3 | .000 |
| | ENTRYDUR | -84.165 | .922 | 1 | .337 |
| | PLACE2RE | -86.540 | 5.673 | 3 | .129 |
| | REGATTRA | -85.296 | 3.184 | 2 | .203 |
| | REGDISTA | -84.876 | 2.343 | 2 | .310 |
| | GENDER | -83.863 | .318 | 1 | .573 |
| | REGSPEND | -84.314 | 1.220 | 2 | .543 |
| | REGEDUCA | -86.170 | 4.932 | 2 | .085 |
| | REGINCOM | -87.700 | 7.992 | 2 | .018 |
| | UNDER | -83.791 | .174 | 1 | .677 |
| | HARMO | -84.516 | 1.623 | 1 | .203 |
| Step 8 | REDTRANS | -84.010 | .439 | 1 | .508 |
| | REGGROUP | -86.231 | 4.879 | 1 | .027 |
| | ENTRY | -114.733 | 61.883 | 3 | .000 |
| | ENTRYDUR | -84.316 | 1.050 | 1 | .305 |
| | PLACE2RE | -86.570 | 5.557 | 3 | .135 |
| | REGATTRA | -85.522 | 3.461 | 2 | .177 |
| | REGDISTA | -85.892 | 4.203 | 2 | .122 |
| | GENDER | -83.928 | .275 | 1 | .600 |
| | REGSPEND | -84.347 | 1.112 | 2 | .574 |
| | REGEDUCA | -86.192 | 4.802 | 2 | .091 |
| | REGINCOM | -88.039 | 8.495 | 2 | .014 |
| | HARMO | -84.654 | 1.725 | 1 | .189 |
| Step 9 | REDTRANS | -84.162 | .468 | 1 | .494 |
| | REGGROUP | -86.390 | 4.922 | 1 | .027 |
| | ENTRY | -114.835 | 61.812 | 3 | .000 |
| | ENTRYDUR | -84.435 | 1.013 | 1 | .314 |
| | PLACE2RE | -86.698 | 5.539 | 3 | .136 |
| | REGATTRA | -85.722 | 3.587 | 2 | .166 |
| | REGDISTA | -86.017 | 4.177 | 2 | .124 |
| | REGSPEND | -84.621 | 1.385 | 2 | .500 |
| | REGEDUCA | -86.382 | 4.908 | 2 | .086 |
| | REGINCOM | -88.261 | 8.665 | 2 | .013 |
| | HARMO | -84.766 | 1.676 | 1 | .195 |
| Step 10 | REDTRANS | -84.837 | .431 | 1 | .512 |
| | REGGROUP | -87.349 | 5.456 | 1 | .019 |
| | ENTRY | -116.349 | 63.456 | 3 | .000 |
| | ENTRYDUR | -85.257 | 1.271 | 1 | .260 |
| | PLACE2RE | -87.226 | 5.209 | 3 | .157 |
| | REGATTRA | -86.418 | 3.593 | 2 | .166 |
| | REGDISTA | -86.476 | 3.709 | 2 | .156 |
| | REGEDUCA | -87.107 | 4.972 | 2 | .083 |
| | REGINCOM | -88.732 | 8.221 | 2 | .016 |
| | HARMO | -85.472 | 1.701 | 1 | .192 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 11 | REGGROUP | -88.064 | 6.454 | 1 | .011 |
| | ENTRY | -119.072 | 68.470 | 3 | .000 |
| | ENTRYDUR | -85.401 | 1.129 | 1 | .288 |
| | PLACE2RE | -87.368 | 5.062 | 3 | .167 |
| | REGATTRA | -86.881 | 4.089 | 2 | .129 |
| | REGDISTA | -86.710 | 3.746 | 2 | .154 |
| | REGEDUCA | -87.228 | 4.782 | 2 | .092 |
| | REGINCOM | -88.844 | 8.015 | 2 | .018 |
| | HARMO | -85.742 | 1.810 | 1 | .179 |
| Step 12 | REGGROUP | -88.775 | 6.748 | 1 | .009 |
| | ENTRY | -119.073 | 67.343 | 3 | .000 |
| | PLACE2RE | -87.707 | 4.612 | 3 | .203 |
| | REGATTRA | -87.251 | 3.699 | 2 | .157 |
| | REGDISTA | -87.143 | 3.484 | 2 | .175 |
| | REGEDUCA | -87.844 | 4.886 | 2 | .087 |
| | REGINCOM | -89.370 | 7.937 | 2 | .019 |
| | HARMO | -86.439 | 2.075 | 1 | .150 |
| Step 13 | REGGROUP | -90.503 | 5.591 | 1 | .018 |
| | ENTRY | -123.176 | 70.938 | 3 | .000 |
| | REGATTRA | -89.736 | 4.057 | 2 | .132 |
| | REGDISTA | -88.986 | 2.558 | 2 | .278 |
| | REGEDUCA | -91.244 | 7.073 | 2 | .029 |
| | REGINCOM | -91.528 | 7.642 | 2 | .022 |
| | HARMO | -88.764 | 2.112 | 1 | .146 |
| Step 14 | REGGROUP | -91.933 | 5.894 | 1 | .015 |
| | ENTRY | -128.058 | 78.143 | 3 | .000 |
| | REGATTRA | -91.472 | 4.972 | 2 | .083 |
| | REGEDUCA | -91.854 | 5.735 | 2 | .057 |
| | REGINCOM | -93.013 | 8.054 | 2 | .018 |
| | HARMO | -89.684 | 1.396 | 1 | .237 |
| Step 15 | REGGROUP | -93.023 | 6.678 | 1 | .010 |
| | ENTRY | -129.656 | 79.945 | 3 | .000 |
| | REGATTRA | -92.404 | 5.441 | 2 | .066 |
| | REGEDUCA | -92.314 | 5.259 | 2 | .072 |
| | REGINCOM | -93.849 | 8.330 | 2 | .016 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 2[a] | Variables | REGAGE(1) | .020 | 1 | .886 |
| | Overall Statistics | | .020 | 1 | .886 |
| Step 3[b] | Variables | REGAGE(1) | .003 | 1 | .953 |
| | | MARRIAGE(1) | .034 | 1 | .853 |
| | Overall Statistics | | .055 | 2 | .973 |
| Step 4[c] | Variables | REGORIGI | .874 | 3 | .832 |
| | | REGORIGI(1) | .720 | 1 | .396 |
| | | REGORIGI(2) | .200 | 1 | .655 |
| | | REGORIGI(3) | .308 | 1 | .579 |
| | | REGAGE(1) | .000 | 1 | .997 |
| | | MARRIAGE(1) | .051 | 1 | .821 |
| | Overall Statistics | | .932 | 5 | .968 |
| Step 5[d] | Variables | TOTALDUR | .030 | 1 | .864 |
| | | REGORIGI | .817 | 3 | .845 |
| | | REGORIGI(1) | .698 | 1 | .404 |
| | | REGORIGI(2) | .211 | 1 | .646 |
| | | REGORIGI(3) | .274 | 1 | .600 |
| | | REGAGE(1) | .000 | 1 | .986 |
| | | MARRIAGE(1) | .067 | 1 | .796 |
| | Overall Statistics | | .956 | 6 | .987 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 6[e] | Variables | REGPREV | .833 | 2 | .659 |
| | | REGPREV(1) | .831 | 1 | .362 |
| | | REGPREV(2) | .414 | 1 | .520 |
| | | TOTALDUR | .009 | 1 | .924 |
| | | REGORIGI | .799 | 3 | .850 |
| | | REGORIGI(1) | .708 | 1 | .400 |
| | | REGORIGI(2) | .228 | 1 | .633 |
| | | REGORIGI(3) | .231 | 1 | .631 |
| | | REGAGE(1) | .055 | 1 | .814 |
| | | MARRIAGE(1) | .008 | 1 | .931 |
| | Overall Statistics | | 1.773 | 8 | .987 |
| Step 7[f] | Variables | REGPREV | .467 | 2 | .792 |
| | | REGPREV(1) | .428 | 1 | .513 |
| | | REGPREV(2) | .336 | 1 | .562 |
| | | TOTALDUR | .010 | 1 | .920 |
| | | REGORIGI | .978 | 3 | .807 |
| | | REGORIGI(1) | .758 | 1 | .384 |
| | | REGORIGI(2) | .226 | 1 | .635 |
| | | REGORIGI(3) | .437 | 1 | .509 |
| | | ETHNIC(1) | .214 | 1 | .644 |
| | | REGAGE(1) | .077 | 1 | .781 |
| | | MARRIAGE(1) | .005 | 1 | .946 |
| | Overall Statistics | | 1.989 | 9 | .992 |
| Step 8[g] | Variables | REGPREV | .563 | 2 | .755 |
| | | REGPREV(1) | .550 | 1 | .458 |
| | | REGPREV(2) | .299 | 1 | .585 |
| | | TOTALDUR | .011 | 1 | .918 |
| | | REGORIGI | 1.031 | 3 | .794 |
| | | REGORIGI(1) | .780 | 1 | .377 |
| | | REGORIGI(2) | .108 | 1 | .742 |
| | | REGORIGI(3) | .366 | 1 | .545 |
| | | ETHNIC(1) | .022 | 1 | .882 |
| | | REGAGE(1) | .065 | 1 | .799 |
| | | MARRIAGE(1) | .003 | 1 | .958 |
| | | UNDER | .174 | 1 | .677 |
| | Overall Statistics | | 2.170 | 10 | .995 |
| Step 9[h] | Variables | REGPREV | .539 | 2 | .764 |
| | | REGPREV(1) | .522 | 1 | .470 |
| | | REGPREV(2) | .299 | 1 | .584 |
| | | TOTALDUR | .013 | 1 | .909 |
| | | REGORIGI | 1.005 | 3 | .800 |
| | | REGORIGI(1) | .748 | 1 | .387 |
| | | REGORIGI(2) | .103 | 1 | .748 |
| | | REGORIGI(3) | .386 | 1 | .535 |
| | | ETHNIC(1) | .030 | 1 | .862 |
| | | GENDER(1) | .274 | 1 | .600 |
| | | REGAGE(1) | .028 | 1 | .866 |
| | | MARRIAGE(1) | .011 | 1 | .916 |
| | | UNDER | .131 | 1 | .717 |
| | Overall Statistics | | 2.411 | 11 | .996 |
| Step 10[i] | Variables | REGPREV | .292 | 2 | .864 |
| | | REGPREV(1) | .179 | 1 | .672 |
| | | REGPREV(2) | .272 | 1 | .602 |
| | | TOTALDUR | .018 | 1 | .892 |
| | | REGORIGI | 1.006 | 3 | .800 |
| | | REGORIGI(1) | .479 | 1 | .489 |
| | | REGORIGI(2) | .129 | 1 | .720 |
| | | REGORIGI(3) | .696 | 1 | .404 |
| | | ETHNIC(1) | .242 | 1 | .623 |
| | | GENDER(1) | .546 | 1 | .460 |
| | | REGSPEND | 1.367 | 2 | .505 |
| | | REGSPEND(1) | 1.127 | 1 | .288 |
| | | REGSPEND(2) | .629 | 1 | .428 |
| | | REGAGE(1) | .084 | 1 | .772 |
| | | MARRIAGE(1) | .004 | 1 | .952 |
| | | UNDER | .029 | 1 | .866 |
| | Overall Statistics | | 3.760 | 13 | .993 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 11[j] | Variables | REDTRANS(1) | .431 | 1 | .512 |
| | | REGPREV | .202 | 2 | .904 |
| | | REGPREV(1) | .137 | 1 | .711 |
| | | REGPREV(2) | .180 | 1 | .671 |
| | | TOTALDUR | .106 | 1 | .745 |
| | | REGORIGI | .772 | 3 | .856 |
| | | REGORIGI(1) | .442 | 1 | .506 |
| | | REGORIGI(2) | .128 | 1 | .721 |
| | | REGORIGI(3) | .474 | 1 | .491 |
| | | ETHNIC(1) | .174 | 1 | .677 |
| | | GENDER(1) | .590 | 1 | .442 |
| | | REGSPEND | 1.333 | 2 | .513 |
| | | REGSPEND(1) | 1.101 | 1 | .294 |
| | | REGSPEND(2) | .627 | 1 | .429 |
| | | REGAGE(1) | .074 | 1 | .785 |
| | | MARRIAGE(1) | .017 | 1 | .897 |
| | | UNDER | .025 | 1 | .873 |
| | Overall Statistics | | 4.121 | 14 | .995 |
| Step 12[k] | Variables | REDTRANS(1) | .289 | 1 | .591 |
| | | REGPREV | .287 | 2 | .866 |
| | | REGPREV(1) | .250 | 1 | .617 |
| | | REGPREV(2) | .205 | 1 | .651 |
| | | ENTRYDUR | 1.158 | 1 | .282 |
| | | TOTALDUR | .483 | 1 | .487 |
| | | REGORIGI | .738 | 3 | .864 |
| | | REGORIGI(1) | .440 | 1 | .507 |
| | | REGORIGI(2) | .169 | 1 | .681 |
| | | REGORIGI(3) | .416 | 1 | .519 |
| | | ETHNIC(1) | .213 | 1 | .644 |
| | | GENDER(1) | .524 | 1 | .469 |
| | | REGSPEND | 1.579 | 2 | .454 |
| | | REGSPEND(1) | 1.375 | 1 | .241 |
| | | REGSPEND(2) | .623 | 1 | .430 |
| | | REGAGE(1) | .106 | 1 | .745 |
| | | MARRIAGE(1) | .022 | 1 | .881 |
| | | UNDER | .077 | 1 | .782 |
| | Overall Statistics | | 5.396 | 15 | .988 |
| Step 13[l] | Variables | REDTRANS(1) | .227 | 1 | .634 |
| | | REGPREV | .393 | 2 | .822 |
| | | REGPREV(1) | .281 | 1 | .596 |
| | | REGPREV(2) | .343 | 1 | .558 |
| | | ENTRYDUR | .688 | 1 | .407 |
| | | PLACE2RE | 4.529 | 3 | .210 |
| | | PLACE2RE(1) | .195 | 1 | .659 |
| | | PLACE2RE(2) | 3.294 | 1 | .070 |
| | | PLACE2RE(3) | 3.263 | 1 | .071 |
| | | TOTALDUR | .882 | 1 | .348 |
| | | REGORIGI | .626 | 3 | .890 |
| | | REGORIGI(1) | .248 | 1 | .618 |
| | | REGORIGI(2) | .517 | 1 | .472 |
| | | REGORIGI(3) | .024 | 1 | .876 |
| | | ETHNIC(1) | .288 | 1 | .592 |
| | | GENDER(1) | .428 | 1 | .513 |
| | | REGSPEND | 1.107 | 2 | .575 |
| | | REGSPEND(1) | .901 | 1 | .343 |
| | | REGSPEND(2) | .482 | 1 | .488 |
| | | REGAGE(1) | .001 | 1 | .977 |
| | | MARRIAGE(1) | .005 | 1 | .942 |
| | | UNDER | .028 | 1 | .866 |
| | Overall Statistics | | 9.731 | 18 | .940 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 14[m] | Variables | REDTRANS(1) | .296 | 1 | .586 |
| | | REGPREV | 1.046 | 2 | .593 |
| | | REGPREV(1) | 1.045 | 1 | .307 |
| | | REGPREV(2) | .400 | 1 | .527 |
| | | ENTRYDUR | .765 | 1 | .382 |
| | | PLACE2RE | 3.595 | 3 | .309 |
| | | PLACE2RE(1) | .000 | 1 | .996 |
| | | PLACE2RE(2) | 3.043 | 1 | .081 |
| | | PLACE2RE(3) | 2.303 | 1 | .129 |
| | | TOTALDUR | .359 | 1 | .549 |
| | | REGDISTA | 2.545 | 2 | .280 |
| | | REGDISTA(1) | 2.501 | 1 | .114 |
| | | REGDISTA(2) | 1.765 | 1 | .184 |
| | | REGORIGI | 1.375 | 3 | .711 |
| | | REGORIGI(1) | 1.133 | 1 | .287 |
| | | REGORIGI(2) | .017 | 1 | .895 |
| | | REGORIGI(3) | .546 | 1 | .460 |
| | | ETHNIC(1) | .054 | 1 | .816 |
| | | GENDER(1) | .339 | 1 | .561 |
| | | REGSPEND | .644 | 2 | .725 |
| | | REGSPEND(1) | .339 | 1 | .560 |
| | | REGSPEND(2) | .467 | 1 | .494 |
| | | REGAGE(1) | .031 | 1 | .861 |
| | | MARRIAGE(1) | .021 | 1 | .884 |
| | | UNDER | 1.071 | 1 | .301 |
| | Overall Statistics | | 12.555 | 20 | .896 |
| Step 15[n] | Variables | REDTRANS(1) | .337 | 1 | .561 |
| | | REGPREV | 1.167 | 2 | .558 |
| | | REGPREV(1) | 1.163 | 1 | .281 |
| | | REGPREV(2) | .476 | 1 | .490 |
| | | ENTRYDUR | .914 | 1 | .339 |
| | | PLACE2RE | 3.498 | 3 | .321 |
| | | PLACE2RE(1) | .020 | 1 | .888 |
| | | PLACE2RE(2) | 2.905 | 1 | .088 |
| | | PLACE2RE(3) | 2.271 | 1 | .132 |
| | | TOTALDUR | .470 | 1 | .493 |
| | | REGDISTA | 1.832 | 2 | .400 |
| | | REGDISTA(1) | 1.748 | 1 | .186 |
| | | REGDISTA(2) | 1.154 | 1 | .283 |
| | | REGORIGI | .874 | 3 | .832 |
| | | REGORIGI(1) | .806 | 1 | .369 |
| | | REGORIGI(2) | .092 | 1 | .762 |
| | | REGORIGI(3) | .033 | 1 | .855 |
| | | ETHNIC(1) | .144 | 1 | .705 |
| | | GENDER(1) | .275 | 1 | .600 |
| | | REGSPEND | .574 | 2 | .751 |
| | | REGSPEND(1) | .418 | 1 | .518 |
| | | REGSPEND(2) | .303 | 1 | .582 |
| | | REGAGE(1) | .031 | 1 | .861 |
| | | MARRIAGE(1) | .035 | 1 | .851 |
| | | UNDER | .886 | 1 | .347 |
| | | HARMO | 1.158 | 1 | .282 |
| | Overall Statistics | | 13.685 | 21 | .883 |

a. Variable(s) removed on step 2: REGAGE.

b. Variable(s) removed on step 3: MARRIAGE.

c. Variable(s) removed on step 4: REGORIGI.

d. Variable(s) removed on step 5: TOTALDUR.

e. Variable(s) removed on step 6: REGPREV.

f. Variable(s) removed on step 7: ETHNIC.

g. Variable(s) removed on step 8: UNDER.

h. Variable(s) removed on step 9: GENDER.

i. Variable(s) removed on step 10: REGSPEND.

j. Variable(s) removed on step 11: REDTRANS.

k. Variable(s) removed on step 12: ENTRYDUR.

l. Variable(s) removed on step 13: PLACE2RE.

Variables not in the Equation

m. Variable(s) removed on step 14: REGDISTA.

n. Variable(s) removed on step 15: HARMO.

```
           Step number: 1

           Observed Groups and Predicted Probabilities

      20 ô                                                            ô
         ó                                                            ó
         ó                                                       B    ó
F        ó                                                       B    ó
R     15 ô                                                       BB   ô
E        ó                                                       BBB  ó
Q        ó                                                       BBB  ó
U        ó                                                       BBB  ó
E     10 ô                                                       BBB  ô
N        ó                                                       BBB  ó
C        ó                                                 B  B BBBBBBó
Y        ó O                                               B BB BBBBBBó
       5 ô000 O                                          B B BB BBBBBBô
         ó000 OO     OB          B              B        B B BB BBBBBBó
         ó000 OO OOOOOOOBB OBOOB    O    BBBBBOBBB  B B BBBO OBBB BOBBOBó
         óOOOOOOOOOOOOOOOOOOOOOOOOBOOOBBBBOBOBOOOBBBOBBBOOBOBBBBOOOOBó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

        Predicted Probability is of Membership for Beijing
        The Cut Value is .50
        Symbols: O - Others
                 B - Beijing
        Each Symbol Represents 1.25 Cases.
```

```
           Step number: 2

           Observed Groups and Predicted Probabilities

      20 ô                                                            ô
         ó                                                            ó
         ó                                                       B    ó
F        ó                                                       BB   ó
R     15 ô                                                       BB   ô
E        ó                                                       BB   ó
Q        ó                                                       BBB  ó
U        ó                                                       BBB  ó
E     10 ô                                                       BBB  ô
N        ó                                                       BBBB ó
C        ó                                                 B    BBBBBBó
Y        ó  O                                           B  B BB BBBBBBó
       5 ô000 O                                         B  B BB BBBBBBô
         ó000 OO     OBO                        B       B  B BB BBBBBBó
         ó000 OO OOOOOO BB O OOB   OBB B BBBBOBB B BBB B OB OBBBBBOBBOBó
         óOOOOOOOOOOOOOOOOOOOOOOOB OOOBBBOBOOOOOBBBOBO BBOOBOBBBBBOOOOBó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

        Predicted Probability is of Membership for Beijing
        The Cut Value is .50
        Symbols: O - Others
                 B - Beijing
        Each Symbol Represents 1.25 Cases.
```

```
           Step number: 3

           Observed Groups and Predicted Probabilities

      16 ô                                                       BB    ô
         ó                                                       BB    ó
         ó                                                       BB    ó
F        ó                                                       BB    ó
R     12 ô                                                       BBB   ô
E        ó                                                       BBB   ó
Q        ó                                                       BBB   ó
U        ó                                                      BBBBB  ó
E      8 ô                                                      BBBBB  ô
N        ó                                                 B  B BBBBBBó
C        ó  O                                              B BB BBBBBBó
Y        ó000 O                                         B  B BB BBBBBBó
       4 ô000 OO     O B      B                   B     B  B BB BBBBBBô
         ó000 OO O   OOO  B     OB    B    BBB BB B   B B   B BBBBB BBBBBBó
         ó000 OO OOOOOOO O BO OO   OOB   BBBOBO B B B BB   O BOBBBBBBBOBOBó
         óOOOOOOOOOOOOOOOOBOOOOBOOB OOB   BOBOOOBOBB OBOBBBOBOOOBBBBOOOOBó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

        Predicted Probability is of Membership for Beijing
        The Cut Value is .50
        Symbols: O - Others
                 B - Beijing
        Each Symbol Represents 1 Case.
```

```
          Step number: 4

          Observed Groups and Predicted Probabilities

      16 ô                                                                    B   ô
         ó                                                                    B   ó
         ó                                                                  B B   ó
F        ó                                                                  B B   ó
R     12 ô                                                                  BBB   ô
E        ó                                                                  BBB   ó
Q        ó                                                                 BBBBB  ó
U        ó                                                                 BBBBB  ó
E      8 ô                                                                 BBBBB  ô
N        ó                                                                 BBBBB  ó
C        ó O            O                                      B       BBBBBBBB   ó
Y        óOO            O  B      B                            BB      BBBBBBBBBó
       4 ôOOOO   O      O  O      B B            B             BB    BBBBBBBBBBBô
         óOOOO OOO      O  O    B B OB          BBO  B   B     BB    BBBBBBBBBBBó
         óOOOOOOOOO OO OOB      BOO OBB   BB   OBBO BB   B    OO BBBBBBBBBOOBó
         óOOOOOOOOO OOBOOOOBOOOOOOOB BOB BOOOOBBB BO BOOBOOBBBBBOOOOBó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0              .25             .5              .75              1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
          Step number: 5

          Observed Groups and Predicted Probabilities

      16 ô                                                                    B   ô
         ó                                                                    B   ó
         ó                                                                    B   ó
F        ó                                                                    BB  ó
R     12 ô                                                                   BBB  ô
E        ó                                                                  BBBB  ó
Q        ó                                                                  BBBBB ó
U        ó                                                                  BBBBB ó
E      8 ô                                                                  BBBBB ô
N        ó                                                                B BBBBB ó
C        ó O            O                                      B        BB BBBBB  ó
Y        óOO            O  B                       B           B      B BBBBBBBBBó
       4 ôOOO    O      O  B     B     B           B O         B      BBBBBBBBBBBô
         óOOOOOOOO  OO OO        B BB  B           OBO       B  BB    BBBBBBBBBBBó
         óOOOOOOOOO  OO OO OB  OOBOBOB   BB        OBO BB    B BBBB OBBBBBBBOOBó
         óOOOOOOOOO OOBOO OO OOOOOOOB BO BB OBOBBBBBO OOOOBOBBBBOBOOOBó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0              .25             .5              .75              1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
          Step number: 6

          Observed Groups and Predicted Probabilities

      20 ô                                                                        ô
         ó                                                                        ó
         ó                                                                    B   ó
F        ó                                                                    B   ó
R     15 ô                                                                  B B   ô
E        ó                                                                  BBB   ó
Q        ó                                                                  BBB   ó
U        ó                                                                  BBB   ó
E     10 ô                                                                  BBB   ô
N        ó                                                                  BBB   ó
C        ó  O    O                                                       BBBBBB  ó
Y        ó  O    O                                                     B BBBBBB  ó
       5 ôO O    O                             B                    B BBBBBBBBB ô
         óO O    O                B BB         B      B             B BBBBBBBBBBó
         óOOOOO OOO OOOOBO B OBOOB   O   B OO    BBB   BBBOBOBBBBBBBBBBOBBó
         óOOOOO OOOOOOOOOBOOO OOOOO   OB BBOO OBBOBO BOBOOOBOBBBBBOOOOBó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0              .25             .5              .75              1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB
```

```
          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1.25 Cases.
```

```
             Step number: 7

             Observed Groups and Predicted Probabilities

      16 ô                                                            ô
         ó                                                       B B  ó
         ó                                                       B B  ó
F        ó                                                       BBB  ó
R     12 ô                                                       BBB  ô
E        ó                                                       BBB  ó
Q        ó                                                      BBBBB ó
U        ó                                                      BBBBB ó
E      8 ô  O                                                B  BBBBB ô
N        ó  O   O                                          B BB BBBBB ó
C        ó  O   O             B                            B BB BBBBB ó
Y        óO O   O             B                   B        B BBBBBBBB ó
       4 ôO O   O   O     B   O          B B      B      B B BBBBBBBB ô
         óO OO  O   O   O B   OBBB   B   B B    B B    B B B BBBBBBOBBó
         óOOOOO OOOOO OBOBOB  OOOBO  B   OBB    BBO BB BOOBBBBBBBOBOBBó
         óOOOOOOOOOOOOOOOOOO BOOOOOBOO B OOO OBBBBO OB BOOOOBBBBBOBOOBó
Predicted òòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòò
  Prob:   0             .25            .5             .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
             Step number: 8

             Observed Groups and Predicted Probabilities

      16 ô                                                       B    ô
         ó                                                       B    ó
         ó                                                       B  B ó
F        ó                                                       BB B ó
R     12 ô                                                       BBBB ô
E        ó                                                       BBBB ó
Q        ó                                                   B   BBBB ó
U        ó                                                   B   BBBB ó
E      8 ô                                                   B  BBBBB ô
N        ó  O                                                B  BBBBB ó
C        ó  O   O                                            BB BBBBB ó
Y        óO O   O             BB                BB           BB BBBBB ó
       4 ôO OO  O       B     BB         B      B B        BBBBBBBBBB ô
         óO OO  OO O O BO B   OOB B   B  B      B BB   BOB BBBBBBBBBOBó
         óOOOOOOOO OOO OO O B OOO OO  B  O BB   B BB B BOBBBBBBBBOBBOBó
         óOOOOOOOOOOOOOOOOBB  OOO OOB OBBOOBOOB OBBOOB OOOBOBBBBBOBOOBó
Predicted òòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòò
  Prob:   0             .25            .5             .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
             Step number: 9

             Observed Groups and Predicted Probabilities

      16 ô                                                       B    ô
         ó                                                       B  B ó
         ó                                                       B  B ó
F        ó                                                       B  B ó
R     12 ô                                                       BB B ô
E        ó                                                       BBBB ó
Q        ó                                                       BBBB ó
U        ó                                                       BBBB ó
E      8 ô                                                    BBBBBBB ô
N        ó  O                                                 BBBBBBB ó
C        ó  O                 B                               BBBBBBB ó
Y        ó  O   OO            B         B                     BBBBBBB ó
       4 ôO O   OO  O         BB        B        B       BB B BBBBBBB ô
         óOOOOO OO  O OO  B   OB B      B  B     BB   B BOBBBBBBBBBBBBó
         óOOOOOOOO OOOOBBB   OOBOOB O  O  BB BB BBBBBB BOBBBBBBBOBOOBó
```

```
            óOOOOOOOOO OOOOOOOO BOOOOOOBOB O BOO OOBBOBBOO BOOOBBBBBOBOOBó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75         1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
             Step number: 10

             Observed Groups and Predicted Probabilities

       32 ô                                                            ô
          ó                                                            ó
          ó                                                            ó
F         ó                                                            ó
R      24 ô                                                            ô
E         ó                                                         B  ó
Q         ó                                                         B  ó
U         ó                                                         B  ó
E      16 ô                                                         B  ô
N         ó                                                       B B  ó
C         ó                                                     BBB B  ó
Y         ó                                                    BBBB B  ó
        8 ô                                                  B BBBBBBB ô
          óOOO                                               B BBBBBBB ó
          óOOOO O  O   O  BB B  BO B  B    BB   B     B    BB BBBBBOB ó
          óOOOOOOOOOOOOOOOOOBOO BOOOOOOOOOBOB BBOBOBBOBBOOB OOBBBOOBOOBó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75         1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 2 Cases.
```

```
             Step number: 11

             Observed Groups and Predicted Probabilities

       32 ô                                                            ô
          ó                                                            ó
          ó                                                            ó
F         ó                                                            ó
R      24 ô                                                         B  ô
E         ó                                                         B  ó
Q         ó                                                         B  ó
U         ó                                                         B  ó
E      16 ô                                                         B  ô
N         ó                                                       B B  ó
C         ó                                                     BBB B  ó
Y         ó                                                     BBB B  ó
        8 ô                                                    BBBB BB ô
          ó  OO  O O     O              B                B BB BBBBBBB ó
          óOOOOO O O   OO O  BB  BBBO    O  BB       B B    B BO BBBBBBB ó
          óOOOOO OOO OOO OOBOO OOOOOOBOOOOBOB BBO OOBBBB OOBOOBBBOOBOOBó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75         1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 2 Cases.
```

```
             Step number: 12

             Observed Groups and Predicted Probabilities

       20 ô                                                            ô
          ó                                                            ó
          ó                                                         B  ó
F         ó                                                         B  ó
R      15 ô                                                         B  ô
E         ó                                                         B  ó
Q         ó                                                     B BBB  ó
U         ó                                                     B BBB  ó
E      10 ô                                                     B BBB  ô
N         ó                                                    BBBBBB  ó
```

```
C          ó  O                                                              BBBBBBB ó
Y          ó  O   O                                                         BBBBBBBB ó
         5 ô  O   O    O  O                     B       B   B BBBBBBBB ô
           6000   O    O  O       BOB           B       B   B BBBBBBBB ó
           600000 000000 BO B    OBOO OBBOBOOB BB   OB   B   BO BBOBBBBOBBO ó
           6000000000000 OOBB   BOOOO OBOOOOOBBBB   OOBBB   BOBOOOBBBBOOOOBó
Predicted  òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:    0              .25              .5              .75              1
  Group:   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

           Predicted Probability is of Membership for Beijing
           The Cut Value is .50
           Symbols: O - Others
                    B - Beijing
           Each Symbol Represents 1.25 Cases.
```

```
              Step number: 13

              Observed Groups and Predicted Probabilities

       16 ô                                                                ô
          ó                                                          B     ó
          ó                                                          B     ó
F         ó                                                         BB B   ó
R      12 ô                                                         BB B   ô
E         ó                                                        BBB B   ó
Q         ó                                                        BBBBB   ó
U         ó  O                                                     BBBBB   ó
E       8 ô  O                                 B                   BBBBBB  ô
N         ó  O                                 B          B       BBBBBBB  ó
C         ó  O        B                        B          B       BBBBBBB  ó
Y         ó  O        O            B           B          BB      BBBBBBB  ó
        4 ôO  OO       O B         O    B      B   B      BB BBBBBBB  ô
          60000       OBOOBBO  B  BO   BBB  B    B B BB   B BB BBBBBBB  ó
          60000 OO   OOOOOBOO  B  BO   BOO  O  OBOB BBBB   BB OOBBBOOBOB ó
          60000000   OOOOOOOOBOO OOOB OOOOOBO OOBOOBOBBOBBOBBOOBBBOOBOBBó
Predicted  òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:    0              .25              .5              .75              1
  Group:   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

           Predicted Probability is of Membership for Beijing
           The Cut Value is .50
           Symbols: O - Others
                    B - Beijing
           Each Symbol Represents 1 Case.
```

```
              Step number: 14

              Observed Groups and Predicted Probabilities

       20 ô                                                                ô
          ó                                                                ó
          ó                                                     B    B     ó
F         ó                                                     B    B     ó
R      15 ô                                                     B    B     ô
E         ó                                                    BB    B     ó
Q         ó                                                    BB    B     ó
U         ó                                                    BBB   B     ó
E      10 ô                                                    BBB   B     ô
N         ó                                                    BBB   B     ó
C         ó  O                                     B           BBBBBB      ó
Y         ó  O                             B       B           BBBBBB      ó
        5 ô  O                B  B         B       B    B      BBBBBBB     ô
          60 OO       B       B  O         BB      B    B B   BBBBBBBB     ó
          6000000    OOBOOO   BBOOOBOOOO   B BOOO B  BB    BBO  BBBOBBBBB  ó
          6000000    OOOOOOOOBOOOOOBOOOOO  OOBOOO BBOBOO BBOOBBBOBOOOOOBBó
Predicted  òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:    0              .25              .5              .75              1
  Group:   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

           Predicted Probability is of Membership for Beijing
           The Cut Value is .50
           Symbols: O - Others
                    B - Beijing
           Each Symbol Represents 1.25 Cases.
```

```
              Step number: 15

              Observed Groups and Predicted Probabilities

       32 ô                                                                ô
          ó                                                                ó
          ó                                                                ó
F         ó                                                         B      ó
R      24 ô                                                         B      ô
```

```
E        ó                                                     B   B  ó
Q        ó                                                     B   B  ó
U        ó                                                     B   B  ó
E     16 ô                                                     B   B  ô
N        ó                                                     B   B  ó
C        ó                                                    BBB  B  ó
Y        ó                                  B                 BBB  BB ó
       8 ô                     B            B                 BBB  BB ô
         ó   O      O     B    O            O   B     B   B   BBB  BB ó
         óOOOOO O  BOBO   O  BBOOO         BO   B B   B OBB   BBBB OB ó
         óOOOOO OOBOOOO   OOOOOOOOOB O    BOOOO OBOB BOBOBO  BOOOB OBBó
Predicted òòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòò
  Prob:   0            .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 2 Cases.
```

Casewise List[b]

| Case | Selected Status[a] | Observed<br>Beijing vs. Others | Predicted | Predicted Group | Temporary Variable<br>Resid | Temporary Variable<br>ZResid |
|---|---|---|---|---|---|---|
| 4 | S | O** | .878 | B | -.878 | -2.689 |
| 16 | S | O** | .951 | B | -.951 | -4.388 |
| 102 | S | B** | .187 | O | .813 | 2.087 |
| 124 | S | O** | .906 | B | -.906 | -3.101 |
| 145 | S | O** | .894 | B | -.894 | -2.908 |
| 149 | S | B** | .138 | O | .862 | 2.501 |
| 157 | S | O** | .951 | B | -.951 | -4.388 |
| 179 | S | O** | .904 | B | -.904 | -3.064 |
| 194 | S | O** | .954 | B | -.954 | -4.559 |

a. S = Selected, U = Unselected cases, and ** = Misclassified cases.

b. Cases with studentized residuals greater than 2.000 are listed.

# b. Logit I (2): Beijing vs. Othrs (deleted case 124)

Case Processing Summary

| Unweighted Cases[a] | | N | Percent |
|---|---|---|---|
| Selected Cases | Included in Analysis | 210 | 99.1 |
| | Missing Cases | 2 | .9 |
| | Total | 212 | 100.0 |
| Unselected Cases | | 0 | .0 |
| Total | | 212 | 100.0 |

a. If weight is in effect, see classification table for the total number of cases.

## Dependent Variable Encoding

| Original Value | Internal Value |
|---|---|
| Others | 0 |
| Beijing | 1 |

Categorical Variables Codings

| | | Frequency | Parameter coding | | |
|---|---|---|---|---|---|
| | | | (1) | (2) | (3) |
| Place of origins, regrouped | Americas | 55 | 1.000 | .000 | .000 |
| | UK | 47 | .000 | 1.000 | .000 |
| | Japan | 60 | .000 | .000 | 1.000 |
| | GCR | 48 | .000 | .000 | .000 |
| Entry point | Beijing | 104 | 1.000 | .000 | .000 |
| | Shanghai | 52 | .000 | 1.000 | .000 |
| | Guangzhou | 24 | .000 | .000 | 1.000 |
| | Others | 30 | .000 | .000 | .000 |
| 2nd place visited, region | No 2nd place | 62 | 1.000 | .000 | .000 |
| | Gateways | 40 | .000 | 1.000 | .000 |
| | Same region | 89 | .000 | .000 | 1.000 |
| | Other region | 19 | .000 | .000 | .000 |
| Number of visitations previously, regreouped | 0 times | 108 | 1.000 | .000 | |
| | once or twice | 46 | .000 | 1.000 | |
| | above twice | 56 | .000 | .000 | |
| Income level, regrouped | Below US$30000 | 84 | 1.000 | .000 | |
| | US$30000-40000 | 26 | .000 | 1.000 | |
| | Above US$40000 | 100 | .000 | .000 | |
| Final level of education, regrouped | high school and below | 47 | 1.000 | .000 | |
| | Undergraduate/College | 90 | .000 | 1.000 | |
| | Postgraduate and above | 73 | .000 | .000 | |
| Trip expense, regrouped | below US$800 | 60 | 1.000 | .000 | |
| | US$800-1000 | 29 | .000 | 1.000 | |
| | above US$1000 | 121 | .000 | .000 | |
| Geographic distance, regrouped | far | 87 | 1.000 | .000 | |
| | medium | 111 | .000 | 1.000 | |
| | not far | 12 | .000 | .000 | |
| Attractiveness of main destination, regrouped | very much | 158 | 1.000 | .000 | |
| | neutral | 39 | .000 | 1.000 | |
| | not much | 13 | .000 | .000 | |
| Type of travel group, regrouped | Package | 129 | 1.000 | | |
| | Family/Friends/alone | 81 | .000 | | |
| Marital status | Single | 67 | 1.000 | | |
| | Married | 143 | .000 | | |
| Age categories, regrouped | Below 44 | 88 | 1.000 | | |
| | above 45 | 122 | .000 | | |
| Gender | Male | 120 | 1.000 | | |
| | Female | 90 | .000 | | |
| Ethnic Chinese | Yes | 55 | 1.000 | | |
| | No | 155 | .000 | | |
| Transport of arrival, regrouped | Air | 189 | 1.000 | | |
| | Rail/Sea/Motor/Foot | 21 | .000 | | |

# Block 0: Beginning Block

Iteration History[a,b,c]

| Iteration | | -2 Log likelihood | Coefficients Constant |
|---|---|---|---|
| Step 0 | 1 | 280.056 | .457 |
| | 2 | 280.053 | .465 |

a. Constant is included in the model.

b. Initial -2 Log Likelihood: 280.053

c. Estimation terminated at iteration number 2 because log-likelihood decreased by less than .010 percent.

Classification Table[a,b]

| Observed | | | Predicted: Beijing vs. Others – Others | Predicted: Beijing vs. Others – Beijing | Predicted: Percentage Correct |
|---|---|---|---|---|---|
| Step 0 | Beijing vs. Others | Others | 0 | 81 | .0 |
| | | Beijing | 0 | 129 | 100.0 |
| | Overall Percentage | | | | 61.4 |

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 0 | Constant | .465 | .142 | 10.775 | 1 | .001 | 1.593 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 0 | Variables | REDTRANS(1) | 13.938 | 1 | .000 |
| | | REGPREV | 11.602 | 2 | .003 |
| | | REGPREV(1) | 10.933 | 1 | .001 |
| | | REGPREV(2) | 1.246 | 1 | .264 |
| | | REGGROUP(1) | 5.104 | 1 | .024 |
| | | ENTRY | 76.697 | 3 | .000 |
| | | ENTRY(1) | 63.548 | 1 | .000 |
| | | ENTRY(2) | 20.971 | 1 | .000 |
| | | ENTRY(3) | 32.240 | 1 | .000 |
| | | ENTRYDUR | .636 | 1 | .425 |
| | | PLACE2RE | 3.386 | 3 | .336 |
| | | PLACE2RE(1) | .081 | 1 | .776 |
| | | PLACE2RE(2) | 2.556 | 1 | .110 |
| | | PLACE2RE(3) | 1.109 | 1 | .292 |
| | | TOTALDUR | .318 | 1 | .573 |
| | | REGATTRA | 2.287 | 2 | .319 |
| | | REGATTRA(1) | .096 | 1 | .757 |
| | | REGATTRA(2) | 1.162 | 1 | .281 |
| | | REGDISTA | 8.990 | 2 | .011 |
| | | REGDISTA(1) | 3.561 | 1 | .059 |
| | | REGDISTA(2) | .385 | 1 | .535 |
| | | REGORIGI | 5.967 | 3 | .113 |
| | | REGORIGI(1) | 4.015 | 1 | .045 |
| | | REGORIGI(2) | .147 | 1 | .701 |
| | | REGORIGI(3) | .340 | 1 | .560 |
| | | ETHNIC(1) | 3.480 | 1 | .062 |
| | | GENDER(1) | .241 | 1 | .623 |
| | | REGSPEND | .158 | 2 | .924 |
| | | REGSPEND(1) | .129 | 1 | .720 |
| | | REGSPEND(2) | .006 | 1 | .939 |
| | | REGEDUCA | .814 | 2 | .666 |
| | | REGEDUCA(1) | .002 | 1 | .965 |
| | | REGEDUCA(2) | .605 | 1 | .437 |
| | | REGINCOM | 11.778 | 2 | .003 |
| | | REGINCOM(1) | .968 | 1 | .325 |
| | | REGINCOM(2) | 11.772 | 1 | .001 |
| | | REGAGE(1) | .092 | 1 | .761 |
| | | MARRIAGE(1) | 2.170 | 1 | .141 |
| | | UNDER | 8.479 | 1 | .004 |
| | | HARMO | 3.062 | 1 | .080 |
| | Overall Statistics | | 101.570 | 31 | .000 |

# Block 1: Method = Backward Stepwise (Likelihood Ratio)

Omnibus Tests of Model Coefficients

| | | Chi-square | df | Sig. |
|---|---|---|---|---|
| Step 1 | Step | 125.058 | 31 | .000 |
| | Block | 125.058 | 31 | .000 |
| | Model | 125.058 | 31 | .000 |
| Step 2[a] | Step | .000 | 1 | .994 |
| | Block | 125.058 | 30 | .000 |
| | Model | 125.058 | 30 | .000 |
| Step 3[a] | Step | -.008 | 1 | .930 |
| | Block | 125.050 | 29 | .000 |
| | Model | 125.050 | 29 | .000 |
| Step 4[a] | Step | -.093 | 1 | .760 |
| | Block | 124.957 | 28 | .000 |
| | Model | 124.957 | 28 | .000 |
| Step 5[a] | Step | -.093 | 1 | .760 |
| | Block | 124.863 | 27 | .000 |
| | Model | 124.863 | 27 | .000 |
| Step 6[a] | Step | -.638 | 2 | .727 |
| | Block | 124.225 | 25 | .000 |
| | Model | 124.225 | 26 | .000 |
| Step 7[a] | Step | -.096 | 1 | .757 |
| | Block | 124.129 | 24 | .000 |
| | Model | 124.129 | 24 | .000 |
| Step 8[a] | Step | -1.424 | 2 | .491 |
| | Block | 122.705 | 22 | .000 |
| | Model | 122.705 | 23 | .000 |
| Step 9[a] | Step | -.523 | 1 | .470 |
| | Block | 122.182 | 21 | .000 |
| | Model | 122.182 | 21 | .000 |
| Step 10[a] | Step | -1.997 | 2 | .368 |
| | Block | 120.185 | 19 | .000 |
| | Model | 120.185 | 20 | .000 |
| Step 11[a] | Step | -.911 | 1 | .340 |
| | Block | 119.274 | 18 | .000 |
| | Model | 119.274 | 18 | .000 |
| Step 12[a] | Step | -1.066 | 1 | .302 |
| | Block | 118.208 | 17 | .000 |
| | Model | 118.208 | 17 | .000 |
| Step 13[a] | Step | -3.972 | 3 | .264 |
| | Block | 114.236 | 14 | .000 |
| | Model | 114.236 | 16 | .000 |
| Step 14[a] | Step | -3.367 | 2 | .186 |
| | Block | 110.869 | 12 | .000 |
| | Model | 110.869 | 13 | .000 |
| Step 15[a] | Step | -1.209 | 1 | .271 |
| | Block | 109.659 | 11 | .000 |
| | Model | 109.659 | 11 | .000 |

a. A negative Chi-squares value indicates that the Chi-squares value has decreased from the previous step.

Model Summary

| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|---|
| 1 | 154.995 | .449 | .609 |
| 2 | 154.995 | .449 | .609 |
| 3 | 155.003 | .449 | .609 |
| 4 | 155.096 | .448 | .609 |
| 5 | 155.189 | .448 | .609 |
| 6 | 155.828 | .447 | .606 |
| 7 | 155.924 | .446 | .606 |
| 8 | 157.348 | .443 | .601 |
| 9 | 157.870 | .441 | .599 |
| 10 | 159.868 | .436 | .592 |
| 11 | 160.779 | .433 | .588 |
| 12 | 161.845 | .430 | .584 |
| 13 | 165.817 | .420 | .570 |
| 14 | 169.184 | .410 | .557 |
| 15 | 170.393 | .407 | .552 |

Hosmer and Lemeshow Test

| Step | Chi-square | df | Sig. |
|---|---|---|---|
| 1 | 18.174 | 8 | .020 |
| 2 | 33.957 | 8 | .000 |
| 3 | 33.946 | 8 | .000 |
| 4 | 34.435 | 8 | .000 |
| 5 | 34.525 | 8 | .000 |
| 6 | 35.218 | 8 | .000 |
| 7 | 17.928 | 8 | .022 |
| 8 | 17.778 | 8 | .023 |
| 9 | 24.860 | 8 | .002 |
| 10 | 26.785 | 8 | .001 |
| 11 | 21.038 | 8 | .007 |
| 12 | 21.246 | 8 | .007 |
| 13 | 15.975 | 8 | .043 |
| 14 | 13.196 | 8 | .105 |
| 15 | 3.820 | 8 | .873 |

Contingency Table for Hosmer and Lemeshow Test

| | | Beijing vs. Others = Others | | Beijing vs. Others = Beijing | | |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | Total |
| Step 1 | 1 | 21 | 20.606 | 0 | .394 | 21 |
| | 2 | 20 | 18.420 | 1 | 2.580 | 21 |
| | 3 | 17 | 14.890 | 4 | 6.110 | 21 |
| | 4 | 7 | 10.915 | 14 | 10.085 | 21 |
| | 5 | 6 | 7.404 | 15 | 13.596 | 21 |
| | 6 | 4 | 3.766 | 17 | 17.234 | 21 |
| | 7 | 1 | 2.303 | 20 | 18.697 | 21 |
| | 8 | 1 | 1.479 | 20 | 19.521 | 21 |
| | 9 | 2 | .923 | 19 | 20.077 | 21 |
| | 10 | 2 | .295 | 19 | 20.705 | 21 |
| Step 2 | 1 | 21 | 20.427 | 0 | .573 | 21 |
| | 2 | 20 | 18.125 | 1 | 2.875 | 21 |
| | 3 | 18 | 14.978 | 3 | 6.022 | 21 |
| | 4 | 5 | 11.232 | 16 | 9.768 | 21 |
| | 5 | 6 | 7.267 | 15 | 13.733 | 21 |
| | 6 | 5 | 3.788 | 16 | 17.212 | 21 |
| | 7 | 2 | 2.259 | 19 | 18.741 | 21 |
| | 8 | 0 | 1.545 | 21 | 19.455 | 21 |
| | 9 | 1 | 1.022 | 20 | 19.978 | 21 |
| | 10 | 3 | .357 | 18 | 20.643 | 21 |
| Step 3 | 1 | 21 | 20.427 | 0 | .573 | 21 |
| | 2 | 20 | 18.125 | 1 | 2.875 | 21 |
| | 3 | 18 | 14.978 | 3 | 6.022 | 21 |
| | 4 | 5 | 11.230 | 16 | 9.770 | 21 |
| | 5 | 6 | 7.269 | 15 | 13.731 | 21 |
| | 6 | 5 | 3.786 | 16 | 17.214 | 21 |
| | 7 | 2 | 2.260 | 19 | 18.740 | 21 |
| | 8 | 0 | 1.546 | 21 | 19.454 | 21 |
| | 9 | 1 | 1.020 | 20 | 19.980 | 21 |
| | 10 | 3 | .358 | 18 | 20.642 | 21 |
| Step 4 | 1 | 21 | 20.425 | 0 | .575 | 21 |
| | 2 | 20 | 18.117 | 1 | 2.883 | 21 |
| | 3 | 18 | 14.988 | 3 | 6.012 | 21 |
| | 4 | 5 | 11.231 | 16 | 9.769 | 21 |
| | 5 | 6 | 7.261 | 15 | 13.739 | 21 |
| | 6 | 5 | 3.800 | 16 | 17.200 | 21 |
| | 7 | 2 | 2.271 | 19 | 18.729 | 21 |
| | 8 | 0 | 1.541 | 21 | 19.459 | 21 |
| | 9 | 1 | 1.016 | 20 | 19.984 | 21 |
| | 10 | 3 | .350 | 18 | 20.650 | 21 |

Contingency Table for Hosmer and Lemeshow Test

| | | Beijing vs. Others = Others | | Beijing vs. Others = Beijing | | |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | Total |
| Step 5 | 1 | 21 | 20.427 | 0 | .573 | 21 |
| | 2 | 20 | 18.106 | 1 | 2.894 | 21 |
| | 3 | 18 | 14.928 | 3 | 6.072 | 21 |
| | 4 | 5 | 11.261 | 16 | 9.739 | 21 |
| | 5 | 6 | 7.321 | 15 | 13.679 | 21 |
| | 6 | 5 | 3.788 | 16 | 17.212 | 21 |
| | 7 | 2 | 2.276 | 19 | 18.724 | 21 |
| | 8 | 0 | 1.529 | 21 | 19.471 | 21 |
| | 9 | 1 | 1.013 | 20 | 19.987 | 21 |
| | 10 | 3 | .352 | 18 | 20.648 | 21 |
| Step 6 | 1 | 21 | 20.449 | 0 | .551 | 21 |
| | 2 | 19 | 18.073 | 2 | 2.927 | 21 |
| | 3 | 19 | 14.759 | 2 | 6.241 | 21 |
| | 4 | 5 | 11.302 | 16 | 9.698 | 21 |
| | 5 | 6 | 7.488 | 15 | 13.512 | 21 |
| | 6 | 5 | 3.824 | 16 | 17.176 | 21 |
| | 7 | 2 | 2.255 | 19 | 18.745 | 21 |
| | 8 | 0 | 1.495 | 21 | 19.505 | 21 |
| | 9 | 1 | .999 | 20 | 20.001 | 21 |
| | 10 | 3 | .355 | 18 | 20.645 | 21 |
| Step 7 | 1 | 21 | 20.463 | 0 | .537 | 21 |
| | 2 | 20 | 17.986 | 1 | 3.014 | 21 |
| | 3 | 17 | 14.670 | 4 | 6.330 | 21 |
| | 4 | 7 | 11.427 | 14 | 9.573 | 21 |
| | 5 | 6 | 7.369 | 15 | 13.631 | 21 |
| | 6 | 2 | 3.985 | 19 | 17.015 | 21 |
| | 7 | 3 | 2.211 | 18 | 18.789 | 21 |
| | 8 | 1 | 1.524 | 20 | 19.476 | 21 |
| | 9 | 2 | 1.008 | 19 | 19.992 | 21 |
| | 10 | 2 | .358 | 19 | 20.642 | 21 |
| Step 8 | 1 | 21 | 20.459 | 0 | .541 | 21 |
| | 2 | 20 | 17.992 | 1 | 3.008 | 21 |
| | 3 | 17 | 14.679 | 4 | 6.321 | 21 |
| | 4 | 7 | 11.421 | 14 | 9.579 | 21 |
| | 5 | 6 | 7.370 | 15 | 13.630 | 21 |
| | 6 | 2 | 3.953 | 19 | 17.047 | 21 |
| | 7 | 3 | 2.224 | 18 | 18.776 | 21 |
| | 8 | 1 | 1.536 | 20 | 19.464 | 21 |
| | 9 | 2 | 1.006 | 19 | 19.994 | 21 |
| | 10 | 2 | .361 | 19 | 20.639 | 21 |
| Step 9 | 1 | 21 | 20.522 | 0 | .478 | 21 |
| | 2 | 20 | 17.795 | 1 | 3.205 | 21 |
| | 3 | 17 | 14.424 | 4 | 6.576 | 21 |
| | 4 | 8 | 11.399 | 13 | 9.601 | 21 |
| | 5 | 5 | 7.677 | 16 | 13.323 | 21 |
| | 6 | 2 | 3.770 | 19 | 17.230 | 21 |
| | 7 | 2 | 2.353 | 19 | 18.647 | 21 |
| | 8 | 2 | 1.587 | 19 | 19.413 | 21 |
| | 9 | 1 | 1.053 | 20 | 19.947 | 21 |
| | 10 | 3 | .419 | 18 | 20.581 | 21 |
| Step 10 | 1 | 21 | 20.493 | 0 | .507 | 21 |
| | 2 | 20 | 17.811 | 1 | 3.189 | 21 |
| | 3 | 17 | 14.321 | 4 | 6.679 | 21 |
| | 4 | 8 | 11.494 | 13 | 9.506 | 21 |
| | 5 | 5 | 7.728 | 16 | 13.272 | 21 |
| | 6 | 1 | 3.760 | 20 | 17.240 | 21 |
| | 7 | 2 | 2.311 | 19 | 18.689 | 21 |
| | 8 | 3 | 1.584 | 18 | 19.416 | 21 |
| | 9 | 1 | 1.058 | 20 | 19.942 | 21 |
| | 10 | 3 | .441 | 18 | 20.559 | 21 |

Contingency Table for Hosmer and Lemeshow Test

| | | Beijing vs. Others = Others | | Beijing vs. Others = Beijing | | Total |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | |
| Step 11 | 1 | 21 | 20.470 | 0 | .530 | 21 |
| | 2 | 18 | 17.571 | 3 | 3.429 | 21 |
| | 3 | 17 | 14.377 | 4 | 6.623 | 21 |
| | 4 | 10 | 11.446 | 11 | 9.554 | 21 |
| | 5 | 4 | 7.906 | 17 | 13.094 | 21 |
| | 6 | 3 | 3.683 | 18 | 17.317 | 21 |
| | 7 | 2 | 2.298 | 19 | 18.702 | 21 |
| | 8 | 2 | 1.703 | 19 | 19.297 | 21 |
| | 9 | 1 | 1.106 | 20 | 19.894 | 21 |
| | 10 | 3 | .441 | 18 | 20.559 | 21 |
| Step 12 | 1 | 21 | 20.406 | 0 | .594 | 21 |
| | 2 | 18 | 17.599 | 3 | 3.401 | 21 |
| | 3 | 16 | 14.494 | 5 | 6.506 | 21 |
| | 4 | 12 | 11.386 | 9 | 9.614 | 21 |
| | 5 | 3 | 7.660 | 18 | 13.340 | 21 |
| | 6 | 3 | 3.757 | 18 | 17.243 | 21 |
| | 7 | 2 | 2.363 | 19 | 18.637 | 21 |
| | 8 | 2 | 1.744 | 19 | 19.256 | 21 |
| | 9 | 1 | 1.151 | 20 | 19.849 | 21 |
| | 10 | 3 | .440 | 18 | 20.560 | 21 |
| Step 13 | 1 | 21 | 20.387 | 0 | .613 | 21 |
| | 2 | 19 | 17.563 | 2 | 3.437 | 21 |
| | 3 | 15 | 14.209 | 6 | 6.791 | 21 |
| | 4 | 11 | 12.168 | 11 | 9.832 | 22 |
| | 5 | 4 | 7.456 | 17 | 13.544 | 21 |
| | 6 | 3 | 3.594 | 18 | 17.406 | 21 |
| | 7 | 1 | 2.318 | 20 | 18.682 | 21 |
| | 8 | 4 | 1.826 | 18 | 20.174 | 22 |
| | 9 | 1 | 1.130 | 21 | 20.870 | 22 |
| | 10 | 2 | .349 | 16 | 17.651 | 18 |
| Step 14 | 1 | 21 | 20.234 | 0 | .766 | 21 |
| | 2 | 18 | 17.607 | 3 | 3.393 | 21 |
| | 3 | 14 | 14.269 | 7 | 6.731 | 21 |
| | 4 | 13 | 11.383 | 8 | 9.617 | 21 |
| | 5 | 5 | 7.604 | 16 | 13.396 | 21 |
| | 6 | 3 | 4.399 | 21 | 19.601 | 24 |
| | 7 | 1 | 2.276 | 20 | 18.724 | 21 |
| | 8 | 2 | 1.706 | 19 | 19.294 | 21 |
| | 9 | 2 | 1.187 | 20 | 20.813 | 22 |
| | 10 | 2 | .335 | 15 | 16.665 | 17 |
| Step 15 | 1 | 21 | 20.237 | 0 | .763 | 21 |
| | 2 | 16 | 17.481 | 5 | 3.519 | 21 |
| | 3 | 13 | 11.860 | 5 | 6.140 | 18 |
| | 4 | 12 | 11.408 | 8 | 8.592 | 20 |
| | 5 | 8 | 8.775 | 13 | 12.225 | 21 |
| | 6 | 3 | 4.270 | 17 | 15.730 | 20 |
| | 7 | 2 | 2.798 | 20 | 19.202 | 22 |
| | 8 | 3 | 2.326 | 23 | 23.674 | 26 |
| | 9 | 2 | 1.143 | 17 | 17.857 | 19 |
| | 10 | 1 | .702 | 21 | 21.298 | 22 |

**Classification Table**[a]

| Observed | | | Predicted: Beijing vs. Others — Others | Predicted: Beijing vs. Others — Beijing | Percentage Correct |
|---|---|---|---|---|---|
| Step 1 | Beijing vs. Others | Others | 63 | 18 | 77.8 |
| | | Beijing | 13 | 116 | 89.9 |
| | Overall Percentage | | | | 85.2 |
| Step 2 | Beijing vs. Others | Others | 63 | 18 | 77.8 |
| | | Beijing | 13 | 116 | 89.9 |
| | Overall Percentage | | | | 85.2 |
| Step 3 | Beijing vs. Others | Others | 63 | 18 | 77.8 |
| | | Beijing | 15 | 114 | 88.4 |
| | Overall Percentage | | | | 84.3 |
| Step 4 | Beijing vs. Others | Others | 63 | 18 | 77.8 |
| | | Beijing | 14 | 115 | 89.1 |
| | Overall Percentage | | | | 84.8 |
| Step 5 | Beijing vs. Others | Others | 63 | 18 | 77.8 |
| | | Beijing | 15 | 114 | 88.4 |
| | Overall Percentage | | | | 84.3 |
| Step 6 | Beijing vs. Others | Others | 63 | 18 | 77.8 |
| | | Beijing | 13 | 116 | 89.9 |
| | Overall Percentage | | | | 85.2 |
| Step 7 | Beijing vs. Others | Others | 63 | 18 | 77.8 |
| | | Beijing | 14 | 115 | 89.1 |
| | Overall Percentage | | | | 84.8 |
| Step 8 | Beijing vs. Others | Others | 63 | 18 | 77.8 |
| | | Beijing | 16 | 113 | 87.6 |
| | Overall Percentage | | | | 83.8 |
| Step 9 | Beijing vs. Others | Others | 64 | 17 | 79.0 |
| | | Beijing | 15 | 114 | 88.4 |
| | Overall Percentage | | | | 84.8 |
| Step 10 | Beijing vs. Others | Others | 65 | 16 | 80.2 |
| | | Beijing | 14 | 115 | 89.1 |
| | Overall Percentage | | | | 85.7 |
| Step 11 | Beijing vs. Others | Others | 64 | 17 | 79.0 |
| | | Beijing | 16 | 113 | 87.6 |
| | Overall Percentage | | | | 84.3 |
| Step 12 | Beijing vs. Others | Others | 66 | 15 | 81.5 |
| | | Beijing | 16 | 113 | 87.6 |
| | Overall Percentage | | | | 85.2 |
| Step 13 | Beijing vs. Others | Others | 64 | 17 | 79.0 |
| | | Beijing | 17 | 112 | 86.8 |
| | Overall Percentage | | | | 83.8 |
| Step 14 | Beijing vs. Others | Others | 63 | 18 | 77.8 |
| | | Beijing | 19 | 110 | 85.3 |
| | Overall Percentage | | | | 82.4 |
| Step 15 | Beijing vs. Others | Others | 61 | 20 | 75.3 |
| | | Beijing | 18 | 111 | 86.0 |
| | Overall Percentage | | | | 81.9 |

a. The cut value is .500

**Variables in the Equation**

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 1[a] | REDTRANS(1) | .811 | 1.042 | .605 | 1 | .437 | 2.250 |
| | REGPREV | | | 1.887 | 2 | .389 | |
| | REGPREV(1) | .501 | .775 | .418 | 1 | .518 | 1.650 |
| | REGPREV(2) | -.365 | .759 | .232 | 1 | .630 | .694 |
| | REGGROUP(1) | .758 | .533 | 2.018 | 1 | .155 | 2.133 |
| | ENTRY | | | 33.491 | 3 | .000 | |
| | ENTRY(1) | 1.545 | .772 | 4.005 | 1 | .045 | 4.686 |
| | ENTRY(2) | -1.191 | .703 | 2.869 | 1 | .090 | .304 |
| | ENTRY(3) | -3.789 | 1.309 | 8.378 | 1 | .004 | .023 |
| | ENTRYDUR | -.028 | .082 | .112 | 1 | .738 | .973 |
| | PLACE2RE | | | 7.743 | 3 | .052 | |
| | PLACE2RE(1) | -.072 | 1.109 | .004 | 1 | .948 | .930 |
| | PLACE2RE(2) | 1.000 | .991 | 1.018 | 1 | .313 | 2.717 |
| | PLACE2RE(3) | -.844 | .860 | .963 | 1 | .326 | .430 |
| | TOTALDUR | -.021 | .041 | .254 | 1 | .614 | .979 |
| | REGATTRA | | | 6.995 | 2 | .030 | |
| | REGATTRA(1) | -3.090 | 1.372 | 5.075 | 1 | .024 | .046 |
| | REGATTRA(2) | -3.789 | 1.450 | 6.825 | 1 | .009 | .023 |
| | REGDISTA | | | .668 | 2 | .716 | |
| | REGDISTA(1) | .872 | 1.170 | .556 | 1 | .456 | 2.392 |
| | REGDISTA(2) | .424 | 1.066 | .158 | 1 | .691 | 1.527 |
| | REGORIGI | | | 1.866 | 3 | .601 | |
| | REGORIGI(1) | 1.056 | 1.349 | .612 | 1 | .434 | 2.874 |
| | REGORIGI(2) | .575 | 1.404 | .168 | 1 | .682 | 1.776 |
| | REGORIGI(3) | -.350 | 1.217 | .083 | 1 | .774 | .705 |
| | ETHNIC(1) | .395 | 1.090 | .131 | 1 | .717 | 1.485 |
| | GENDER(1) | .379 | .480 | .625 | 1 | .429 | 1.461 |
| | REGSPEND | | | 1.281 | 2 | .527 | |
| | REGSPEND(1) | .576 | .724 | .634 | 1 | .426 | 1.779 |
| | REGSPEND(2) | -.356 | .688 | .267 | 1 | .605 | .701 |
| | REGEDUCA | | | 4.875 | 2 | .087 | |
| | REGEDUCA(1) | 1.568 | .745 | 4.425 | 1 | .035 | 4.797 |
| | REGEDUCA(2) | .895 | .553 | 2.615 | 1 | .106 | 2.447 |
| | REGINCOM | | | 7.931 | 2 | .019 | |
| | REGINCOM(1) | .179 | .570 | .099 | 1 | .753 | 1.196 |
| | REGINCOM(2) | -1.904 | .752 | 6.410 | 1 | .011 | .149 |
| | REGAGE(1) | -.004 | .622 | .000 | 1 | .994 | .996 |
| | MARRIAGE(1) | -.176 | .636 | .077 | 1 | .782 | .839 |
| | UNDER | -.040 | .458 | .008 | 1 | .930 | .961 |
| | HARMO | .583 | .363 | 2.581 | 1 | .108 | 1.791 |
| | Constant | 1.013 | 2.476 | .167 | 1 | .683 | 2.754 |

## Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 2[a] | REDTRANS(1) | .811 | 1.043 | .605 | 1 | .437 | 2.250 |
| | REGPREV | | | 1.978 | 2 | .372 | |
| | REGPREV(1) | .500 | .753 | .440 | 1 | .507 | 1.648 |
| | REGPREV(2) | -.366 | .758 | .233 | 1 | .629 | .694 |
| | REGGROUP(1) | .758 | .519 | 2.134 | 1 | .144 | 2.135 |
| | ENTRY | | | 33.488 | 3 | .000 | |
| | ENTRY(1) | 1.545 | .772 | 4.006 | 1 | .045 | 4.686 |
| | ENTRY(2) | -1.190 | .699 | 2.902 | 1 | .088 | .304 |
| | ENTRY(3) | -3.790 | 1.298 | 8.532 | 1 | .003 | .023 |
| | ENTRYDUR | -.028 | .082 | .113 | 1 | .737 | .973 |
| | PLACE2RE | | | 7.895 | 3 | .048 | |
| | PLACE2RE(1) | -.071 | 1.098 | .004 | 1 | .948 | .931 |
| | PLACE2RE(2) | 1.001 | .981 | 1.040 | 1 | .308 | 2.720 |
| | PLACE2RE(3) | -.844 | .859 | .964 | 1 | .326 | .430 |
| | TOTALDUR | -.021 | .041 | .255 | 1 | .614 | .979 |
| | REGATTRA | | | 7.063 | 2 | .029 | |
| | REGATTRA(1) | -3.089 | 1.369 | 5.092 | 1 | .024 | .046 |
| | REGATTRA(2) | -3.788 | 1.444 | 6.879 | 1 | .009 | .023 |
| | REGDISTA | | | .671 | 2 | .715 | |
| | REGDISTA(1) | .872 | 1.169 | .557 | 1 | .455 | 2.393 |
| | REGDISTA(2) | .424 | 1.066 | .158 | 1 | .691 | 1.527 |
| | REGORIGI | | | 1.866 | 3 | .601 | |
| | REGORIGI(1) | 1.056 | 1.348 | .614 | 1 | .433 | 2.875 |
| | REGORIGI(2) | .575 | 1.404 | .168 | 1 | .682 | 1.777 |
| | REGORIGI(3) | -.350 | 1.214 | .083 | 1 | .773 | .705 |
| | ETHNIC(1) | .394 | 1.084 | .132 | 1 | .716 | 1.483 |
| | GENDER(1) | .380 | .473 | .646 | 1 | .421 | 1.462 |
| | REGSPEND | | | 1.293 | 2 | .524 | |
| | REGSPEND(1) | .575 | .707 | .662 | 1 | .416 | 1.777 |
| | REGSPEND(2) | -.356 | .681 | .273 | 1 | .601 | .700 |
| | REGEDUCA | | | 4.880 | 2 | .087 | |
| | REGEDUCA(1) | 1.568 | .743 | 4.460 | 1 | .035 | 4.799 |
| | REGEDUCA(2) | .895 | .550 | 2.641 | 1 | .104 | 2.446 |
| | REGINCOM | | | 7.941 | 2 | .019 | |
| | REGINCOM(1) | .179 | .569 | .099 | 1 | .753 | 1.196 |
| | REGINCOM(2) | -1.904 | .752 | 6.413 | 1 | .011 | .149 |
| | MARRIAGE(1) | -.178 | .583 | .093 | 1 | .760 | .837 |
| | UNDER | -.040 | .458 | .008 | 1 | .930 | .961 |
| | HARMO | .583 | .362 | 2.590 | 1 | .108 | 1.791 |
| | Constant | 1.011 | 2.452 | .170 | 1 | .680 | 2.747 |

**Variables in the Equation**

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 3[a] | REDTRANS(1) | .823 | 1.036 | .631 | 1 | .427 | 2.277 |
| | REGPREV | | | 1.976 | 2 | .372 | |
| | REGPREV(1) | .492 | .749 | .432 | 1 | .511 | 1.635 |
| | REGPREV(2) | -.373 | .753 | .246 | 1 | .620 | .688 |
| | REGGROUP(1) | .755 | .518 | 2.126 | 1 | .145 | 2.127 |
| | ENTRY | | | 34.092 | 3 | .000 | |
| | ENTRY(1) | 1.531 | .756 | 4.106 | 1 | .043 | 4.624 |
| | ENTRY(2) | -1.197 | .695 | 2.971 | 1 | .085 | .302 |
| | ENTRY(3) | -3.791 | 1.297 | 8.549 | 1 | .003 | .023 |
| | ENTRYDUR | -.027 | .082 | .109 | 1 | .741 | .973 |
| | PLACE2RE | | | 7.924 | 3 | .048 | |
| | PLACE2RE(1) | -.066 | 1.095 | .004 | 1 | .952 | .936 |
| | PLACE2RE(2) | .996 | .979 | 1.035 | 1 | .309 | 2.708 |
| | PLACE2RE(3) | -.842 | .858 | .963 | 1 | .326 | .431 |
| | TOTALDUR | -.020 | .041 | .250 | 1 | .617 | .980 |
| | REGATTRA | | | 7.083 | 2 | .029 | |
| | REGATTRA(1) | -3.066 | 1.340 | 5.235 | 1 | .022 | .047 |
| | REGATTRA(2) | -3.773 | 1.433 | 6.936 | 1 | .008 | .023 |
| | REGDISTA | | | .662 | 2 | .718 | |
| | REGDISTA(1) | .867 | 1.169 | .550 | 1 | .458 | 2.380 |
| | REGDISTA(2) | .427 | 1.066 | .160 | 1 | .689 | 1.533 |
| | REGORIGI | | | 1.963 | 3 | .580 | |
| | REGORIGI(1) | 1.017 | 1.272 | .639 | 1 | .424 | 2.764 |
| | REGORIGI(2) | .528 | 1.301 | .165 | 1 | .685 | 1.696 |
| | REGORIGI(3) | -.357 | 1.212 | .087 | 1 | .768 | .700 |
| | ETHNIC(1) | .422 | 1.039 | .165 | 1 | .685 | 1.525 |
| | GENDER(1) | .383 | .472 | .658 | 1 | .417 | 1.466 |
| | REGSPEND | | | 1.290 | 2 | .525 | |
| | REGSPEND(1) | .570 | .704 | .656 | 1 | .418 | 1.769 |
| | REGSPEND(2) | -.353 | .680 | .269 | 1 | .604 | .703 |
| | REGEDUCA | | | 4.883 | 2 | .087 | |
| | REGEDUCA(1) | 1.564 | .740 | 4.460 | 1 | .035 | 4.777 |
| | REGEDUCA(2) | .902 | .543 | 2.762 | 1 | .097 | 2.466 |
| | REGINCOM | | | 8.118 | 2 | .017 | |
| | REGINCOM(1) | .182 | .569 | .103 | 1 | .749 | 1.200 |
| | REGINCOM(2) | -1.892 | .738 | 6.577 | 1 | .010 | .151 |
| | MARRIAGE(1) | -.178 | .583 | .093 | 1 | .760 | .837 |
| | HARMO | .576 | .354 | 2.653 | 1 | .103 | 1.779 |
| | Constant | .994 | 2.445 | .165 | 1 | .684 | 2.701 |

**Variables in the Equation**

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 4[a] | REDTRANS(1) | .751 | 1.016 | .545 | 1 | .460 | 2.118 |
| | REGPREV | | | 1.892 | 2 | .388 | |
| | REGPREV(1) | .462 | .739 | .390 | 1 | .532 | 1.587 |
| | REGPREV(2) | -.368 | .750 | .240 | 1 | .624 | .692 |
| | REGGROUP(1) | .800 | .498 | 2.580 | 1 | .108 | 2.226 |
| | ENTRY | | | 34.218 | 3 | .000 | |
| | ENTRY(1) | 1.502 | .750 | 4.013 | 1 | .045 | 4.492 |
| | ENTRY(2) | -1.189 | .695 | 2.927 | 1 | .087 | .305 |
| | ENTRY(3) | -3.836 | 1.298 | 8.732 | 1 | .003 | .022 |
| | ENTRYDUR | -.025 | .081 | .094 | 1 | .760 | .975 |
| | PLACE2RE | | | 7.907 | 3 | .048 | |
| | PLACE2RE(1) | -.102 | 1.088 | .009 | 1 | .925 | .903 |
| | PLACE2RE(2) | .975 | .975 | .999 | 1 | .318 | 2.651 |
| | PLACE2RE(3) | -.862 | .855 | 1.016 | 1 | .314 | .422 |
| | TOTALDUR | -.022 | .040 | .309 | 1 | .579 | .978 |
| | REGATTRA | | | 7.074 | 2 | .029 | |
| | REGATTRA(1) | -3.082 | 1.337 | 5.315 | 1 | .021 | .046 |
| | REGATTRA(2) | -3.766 | 1.428 | 6.950 | 1 | .008 | .023 |
| | REGDISTA | | | .629 | 2 | .730 | |
| | REGDISTA(1) | .828 | 1.163 | .506 | 1 | .477 | 2.288 |
| | REGDISTA(2) | .383 | 1.059 | .131 | 1 | .717 | 1.467 |
| | REGORIGI | | | 1.976 | 3 | .577 | |
| | REGORIGI(1) | 1.022 | 1.266 | .652 | 1 | .420 | 2.780 |
| | REGORIGI(2) | .506 | 1.294 | .153 | 1 | .696 | 1.659 |
| | REGORIGI(3) | -.343 | 1.208 | .081 | 1 | .776 | .709 |
| | ETHNIC(1) | .394 | 1.033 | .145 | 1 | .703 | 1.483 |
| | GENDER(1) | .396 | .470 | .710 | 1 | .400 | 1.486 |
| | REGSPEND | | | 1.225 | 2 | .542 | |
| | REGSPEND(1) | .534 | .694 | .591 | 1 | .442 | 1.705 |
| | REGSPEND(2) | -.357 | .680 | .276 | 1 | .599 | .700 |
| | REGEDUCA | | | 4.829 | 2 | .089 | |
| | REGEDUCA(1) | 1.563 | .740 | 4.460 | 1 | .035 | 4.773 |
| | REGEDUCA(2) | .868 | .529 | 2.686 | 1 | .101 | 2.381 |
| | REGINCOM | | | 8.083 | 2 | .018 | |
| | REGINCOM(1) | .148 | .559 | .070 | 1 | .791 | 1.159 |
| | REGINCOM(2) | -1.904 | .736 | 6.692 | 1 | .010 | .149 |
| | HARMO | .564 | .350 | 2.593 | 1 | .107 | 1.757 |
| | Constant | 1.129 | 2.411 | .219 | 1 | .640 | 3.094 |

## Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 5[a] | REDTRANS(1) | .707 | 1.010 | .490 | 1 | .484 | 2.027 |
| | REGPREV | | | 2.015 | 2 | .365 | |
| | REGPREV(1) | .506 | .723 | .489 | 1 | .484 | 1.658 |
| | REGPREV(2) | -.341 | .742 | .211 | 1 | .646 | .711 |
| | REGGROUP(1) | .799 | .497 | 2.583 | 1 | .108 | 2.223 |
| | ENTRY | | | 34.357 | 3 | .000 | |
| | ENTRY(1) | 1.454 | .735 | 3.916 | 1 | .048 | 4.282 |
| | ENTRY(2) | -1.207 | .694 | 3.026 | 1 | .082 | .299 |
| | ENTRY(3) | -3.871 | 1.301 | 8.858 | 1 | .003 | .021 |
| | PLACE2RE | | | 7.857 | 3 | .049 | |
| | PLACE2RE(1) | -.204 | 1.037 | .039 | 1 | .844 | .816 |
| | PLACE2RE(2) | .949 | .971 | .956 | 1 | .328 | 2.583 |
| | PLACE2RE(3) | -.877 | .855 | 1.051 | 1 | .305 | .416 |
| | TOTALDUR | -.029 | .035 | .674 | 1 | .412 | .971 |
| | REGATTRA | | | 6.944 | 2 | .031 | |
| | REGATTRA(1) | -3.057 | 1.345 | 5.168 | 1 | .023 | .047 |
| | REGATTRA(2) | -3.746 | 1.436 | 6.800 | 1 | .009 | .024 |
| | REGDISTA | | | .632 | 2 | .729 | |
| | REGDISTA(1) | .828 | 1.163 | .507 | 1 | .477 | 2.288 |
| | REGDISTA(2) | .380 | 1.057 | .129 | 1 | .720 | 1.462 |
| | REGORIGI | | | 2.038 | 3 | .565 | |
| | REGORIGI(1) | 1.054 | 1.258 | .702 | 1 | .402 | 2.869 |
| | REGORIGI(2) | .536 | 1.288 | .173 | 1 | .677 | 1.709 |
| | REGORIGI(3) | -.336 | 1.203 | .078 | 1 | .780 | .715 |
| | ETHNIC(1) | .429 | 1.020 | .177 | 1 | .674 | 1.535 |
| | GENDER(1) | .398 | .470 | .717 | 1 | .397 | 1.489 |
| | REGSPEND | | | 1.298 | 2 | .523 | |
| | REGSPEND(1) | .545 | .691 | .622 | 1 | .430 | 1.724 |
| | REGSPEND(2) | -.368 | .680 | .292 | 1 | .589 | .692 |
| | REGEDUCA | | | 4.840 | 2 | .089 | |
| | REGEDUCA(1) | 1.565 | .739 | 4.492 | 1 | .034 | 4.785 |
| | REGEDUCA(2) | .862 | .529 | 2.660 | 1 | .103 | 2.368 |
| | REGINCOM | | | 8.181 | 2 | .017 | |
| | REGINCOM(1) | .130 | .555 | .055 | 1 | .814 | 1.139 |
| | REGINCOM(2) | -1.922 | .733 | 6.865 | 1 | .009 | .146 |
| | HARMO | .575 | .349 | 2.706 | 1 | .100 | 1.777 |
| | Constant | 1.151 | 2.411 | .228 | 1 | .633 | 3.161 |

## Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 6[a] | REDTRANS(1) | .756 | 1.002 | .570 | 1 | .450 | 2.130 |
| | REGPREV | | | 2.445 | 2 | .294 | |
| | REGPREV(1) | .511 | .717 | .509 | 1 | .476 | 1.667 |
| | REGPREV(2) | -.410 | .734 | .312 | 1 | .577 | .664 |
| | REGGROUP(1) | .745 | .490 | 2.310 | 1 | .129 | 2.106 |
| | ENTRY | | | 35.321 | 3 | .000 | |
| | ENTRY(1) | 1.518 | .703 | 4.662 | 1 | .031 | 4.563 |
| | ENTRY(2) | -1.135 | .676 | 2.821 | 1 | .093 | .321 |
| | ENTRY(3) | -3.855 | 1.298 | 8.822 | 1 | .003 | .021 |
| | PLACE2RE | | | 8.661 | 3 | .034 | |
| | PLACE2RE(1) | -.323 | 1.020 | .100 | 1 | .751 | .724 |
| | PLACE2RE(2) | .916 | .964 | .902 | 1 | .342 | 2.499 |
| | PLACE2RE(3) | -.967 | .841 | 1.321 | 1 | .250 | .380 |
| | TOTALDUR | -.028 | .035 | .632 | 1 | .427 | .973 |
| | REGATTRA | | | 7.236 | 2 | .027 | |
| | REGATTRA(1) | -3.096 | 1.335 | 5.382 | 1 | .020 | .045 |
| | REGATTRA(2) | -3.798 | 1.427 | 7.090 | 1 | .008 | .022 |
| | REGORIGI | | | 4.804 | 3 | .187 | |
| | REGORIGI(1) | 1.345 | 1.195 | 1.267 | 1 | .260 | 3.839 |
| | REGORIGI(2) | .803 | 1.237 | .421 | 1 | .516 | 2.231 |
| | REGORIGI(3) | -.395 | 1.160 | .116 | 1 | .734 | .674 |
| | ETHNIC(1) | .309 | .993 | .097 | 1 | .756 | 1.362 |
| | GENDER(1) | .423 | .467 | .819 | 1 | .366 | 1.526 |
| | REGSPEND | | | 1.424 | 2 | .491 | |
| | REGSPEND(1) | .555 | .689 | .649 | 1 | .421 | 1.741 |
| | REGSPEND(2) | -.399 | .679 | .345 | 1 | .557 | .671 |
| | REGEDUCA | | | 5.343 | 2 | .069 | |
| | REGEDUCA(1) | 1.595 | .709 | 5.058 | 1 | .025 | 4.926 |
| | REGEDUCA(2) | .848 | .521 | 2.646 | 1 | .104 | 2.334 |
| | REGINCOM | | | 8.473 | 2 | .014 | |
| | REGINCOM(1) | .138 | .550 | .063 | 1 | .802 | 1.148 |
| | REGINCOM(2) | -1.937 | .727 | 7.100 | 1 | .008 | .144 |
| | HARMO | .591 | .348 | 2.893 | 1 | .089 | 1.807 |
| | Constant | 1.648 | 2.231 | .545 | 1 | .460 | 5.195 |

## Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 7[a] | REDTRANS(1) | .748 | .999 | .561 | 1 | .454 | 2.112 |
| | REGPREV | | | 2.354 | 2 | .308 | |
| | REGPREV(1) | .457 | .692 | .436 | 1 | .509 | 1.579 |
| | REGPREV(2) | -.418 | .733 | .325 | 1 | .568 | .658 |
| | REGGROUP(1) | .728 | .487 | 2.236 | 1 | .135 | 2.071 |
| | ENTRY | | | 35.524 | 3 | .000 | |
| | ENTRY(1) | 1.516 | .703 | 4.658 | 1 | .031 | 4.555 |
| | ENTRY(2) | -1.134 | .675 | 2.822 | 1 | .093 | .322 |
| | ENTRY(3) | -3.846 | 1.293 | 8.851 | 1 | .003 | .021 |
| | PLACE2RE | | | 8.700 | 3 | .034 | |
| | PLACE2RE(1) | -.295 | 1.016 | .084 | 1 | .772 | .745 |
| | PLACE2RE(2) | .931 | .960 | .939 | 1 | .332 | 2.537 |
| | PLACE2RE(3) | -.958 | .839 | 1.304 | 1 | .253 | .384 |
| | TOTALDUR | -.027 | .035 | .617 | 1 | .432 | .973 |
| | REGATTRA | | | 7.171 | 2 | .028 | |
| | REGATTRA(1) | -3.056 | 1.328 | 5.296 | 1 | .021 | .047 |
| | REGATTRA(2) | -3.736 | 1.411 | 7.014 | 1 | .008 | .024 |
| | REGORIGI | | | 4.832 | 3 | .185 | |
| | REGORIGI(1) | 1.126 | .966 | 1.359 | 1 | .244 | 3.084 |
| | REGORIGI(2) | .559 | .958 | .340 | 1 | .560 | 1.749 |
| | REGORIGI(3) | -.632 | .878 | .518 | 1 | .472 | .532 |
| | GENDER(1) | .424 | .466 | .826 | 1 | .364 | 1.527 |
| | REGSPEND | | | 1.394 | 2 | .498 | |
| | REGSPEND(1) | .561 | .688 | .665 | 1 | .415 | 1.753 |
| | REGSPEND(2) | -.383 | .677 | .320 | 1 | .572 | .682 |
| | REGEDUCA | | | 5.344 | 2 | .069 | |
| | REGEDUCA(1) | 1.590 | .708 | 5.048 | 1 | .025 | 4.904 |
| | REGEDUCA(2) | .851 | .521 | 2.670 | 1 | .102 | 2.342 |
| | REGINCOM | | | 8.377 | 2 | .015 | |
| | REGINCOM(1) | .125 | .547 | .053 | 1 | .819 | 1.134 |
| | REGINCOM(2) | -1.924 | .726 | 7.030 | 1 | .008 | .146 |
| | HARMO | .584 | .347 | 2.836 | 1 | .092 | 1.793 |
| | Constant | 1.890 | 2.087 | .821 | 1 | .365 | 6.622 |
| Step 8[a] | REDTRANS(1) | .710 | .988 | .517 | 1 | .472 | 2.035 |
| | REGPREV | | | 2.259 | 2 | .323 | |
| | REGPREV(1) | .430 | .681 | .398 | 1 | .528 | 1.537 |
| | REGPREV(2) | -.415 | .718 | .333 | 1 | .564 | .661 |
| | REGGROUP(1) | .809 | .477 | 2.879 | 1 | .090 | 2.245 |
| | ENTRY | | | 37.252 | 3 | .000 | |
| | ENTRY(1) | 1.539 | .681 | 5.106 | 1 | .024 | 4.659 |
| | ENTRY(2) | -1.175 | .639 | 3.376 | 1 | .066 | .309 |
| | ENTRY(3) | -3.866 | 1.245 | 9.642 | 1 | .002 | .021 |
| | PLACE2RE | | | 8.134 | 3 | .043 | |
| | PLACE2RE(1) | -.162 | 1.000 | .026 | 1 | .871 | .850 |
| | PLACE2RE(2) | .965 | .950 | 1.032 | 1 | .310 | 2.624 |
| | PLACE2RE(3) | -.837 | .827 | 1.025 | 1 | .311 | .433 |
| | TOTALDUR | -.029 | .035 | .693 | 1 | .405 | .972 |
| | REGATTRA | | | 7.858 | 2 | .020 | |
| | REGATTRA(1) | -3.262 | 1.304 | 6.261 | 1 | .012 | .038 |
| | REGATTRA(2) | -3.877 | 1.387 | 7.811 | 1 | .005 | .021 |
| | REGORIGI | | | 4.677 | 3 | .197 | |
| | REGORIGI(1) | .838 | .922 | .825 | 1 | .364 | 2.311 |
| | REGORIGI(2) | .298 | .927 | .104 | 1 | .747 | 1.348 |
| | REGORIGI(3) | -.864 | .843 | 1.050 | 1 | .306 | .422 |
| | GENDER(1) | .512 | .461 | 1.233 | 1 | .267 | 1.669 |
| | REGEDUCA | | | 5.362 | 2 | .068 | |
| | REGEDUCA(1) | 1.574 | .696 | 5.112 | 1 | .024 | 4.825 |
| | REGEDUCA(2) | .816 | .515 | 2.511 | 1 | .113 | 2.262 |
| | REGINCOM | | | 8.079 | 2 | .018 | |
| | REGINCOM(1) | .117 | .539 | .047 | 1 | .828 | 1.124 |
| | REGINCOM(2) | -1.864 | .724 | 6.623 | 1 | .010 | .155 |
| | HARMO | .573 | .344 | 2.774 | 1 | .096 | 1.773 |
| | Constant | 2.237 | 1.923 | 1.353 | 1 | .245 | 9.362 |

## Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 9[a] | REGPREV | | | 1.997 | 2 | .368 | |
| | REGPREV(1) | .392 | .677 | .335 | 1 | .563 | 1.480 |
| | REGPREV(2) | -.393 | .716 | .301 | 1 | .583 | .675 |
| | REGGROUP(1) | .877 | .467 | 3.536 | 1 | .060 | 2.404 |
| | ENTRY | | | 40.059 | 3 | .000 | |
| | ENTRY(1) | 1.682 | .655 | 6.587 | 1 | .010 | 5.375 |
| | ENTRY(2) | -1.074 | .622 | 2.979 | 1 | .084 | .342 |
| | ENTRY(3) | -3.859 | 1.227 | 9.886 | 1 | .002 | .021 |
| | PLACE2RE | | | 7.910 | 3 | .048 | |
| | PLACE2RE(1) | -.147 | .997 | .022 | 1 | .883 | .863 |
| | PLACE2RE(2) | 1.045 | .947 | 1.217 | 1 | .270 | 2.842 |
| | PLACE2RE(3) | -.731 | .818 | .800 | 1 | .371 | .481 |
| | TOTALDUR | -.031 | .033 | .870 | 1 | .351 | .969 |
| | REGATTRA | | | 8.160 | 2 | .017 | |
| | REGATTRA(1) | -3.224 | 1.273 | 6.413 | 1 | .011 | .040 |
| | REGATTRA(2) | -3.870 | 1.360 | 8.100 | 1 | .004 | .021 |
| | REGORIGI | | | 4.420 | 3 | .220 | |
| | REGORIGI(1) | .932 | .912 | 1.044 | 1 | .307 | 2.538 |
| | REGORIGI(2) | .406 | .911 | .199 | 1 | .656 | 1.501 |
| | REGORIGI(3) | -.710 | .811 | .765 | 1 | .382 | .492 |
| | GENDER(1) | .526 | .461 | 1.302 | 1 | .254 | 1.692 |
| | REGEDUCA | | | 5.151 | 2 | .076 | |
| | REGEDUCA(1) | 1.495 | .676 | 4.892 | 1 | .027 | 4.461 |
| | REGEDUCA(2) | .818 | .516 | 2.510 | 1 | .113 | 2.266 |
| | REGINCOM | | | 7.934 | 2 | .019 | |
| | REGINCOM(1) | .051 | .529 | .009 | 1 | .924 | 1.052 |
| | REGINCOM(2) | -1.863 | .721 | 6.678 | 1 | .010 | .155 |
| | HARMO | .551 | .338 | 2.660 | 1 | .103 | 1.736 |
| | Constant | 2.635 | 1.839 | 2.054 | 1 | .152 | 13.949 |
| Step 10[a] | REGGROUP(1) | .941 | .463 | 4.125 | 1 | .042 | 2.561 |
| | ENTRY | | | 43.623 | 3 | .000 | |
| | ENTRY(1) | 1.667 | .647 | 6.638 | 1 | .010 | 5.294 |
| | ENTRY(2) | -1.167 | .622 | 3.524 | 1 | .060 | .311 |
| | ENTRY(3) | -3.836 | 1.205 | 10.132 | 1 | .001 | .022 |
| | PLACE2RE | | | 7.915 | 3 | .048 | |
| | PLACE2RE(1) | .018 | .970 | .000 | 1 | .985 | 1.018 |
| | PLACE2RE(2) | 1.204 | .933 | 1.667 | 1 | .197 | 3.334 |
| | PLACE2RE(3) | -.599 | .790 | .575 | 1 | .448 | .549 |
| | TOTALDUR | -.029 | .033 | .768 | 1 | .381 | .971 |
| | REGATTRA | | | 7.011 | 2 | .030 | |
| | REGATTRA(1) | -2.734 | 1.171 | 5.448 | 1 | .020 | .065 |
| | REGATTRA(2) | -3.349 | 1.267 | 6.985 | 1 | .008 | .035 |
| | REGORIGI | | | 4.546 | 3 | .208 | |
| | REGORIGI(1) | 1.181 | .751 | 2.475 | 1 | .116 | 3.258 |
| | REGORIGI(2) | .704 | .758 | .865 | 1 | .352 | 2.023 |
| | REGORIGI(3) | -.441 | .699 | .398 | 1 | .528 | .643 |
| | GENDER(1) | .483 | .455 | 1.127 | 1 | .288 | 1.621 |
| | REGEDUCA | | | 5.391 | 2 | .068 | |
| | REGEDUCA(1) | 1.536 | .671 | 5.242 | 1 | .022 | 4.646 |
| | REGEDUCA(2) | .783 | .510 | 2.358 | 1 | .125 | 2.189 |
| | REGINCOM | | | 7.676 | 2 | .022 | |
| | REGINCOM(1) | -.007 | .525 | .000 | 1 | .989 | .993 |
| | REGINCOM(2) | -1.856 | .719 | 6.655 | 1 | .010 | .156 |
| | HARMO | .519 | .329 | 2.485 | 1 | .115 | 1.680 |
| | Constant | 1.950 | 1.693 | 1.327 | 1 | .249 | 7.030 |

**Variables in the Equation**

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 11[a] | REGGROUP(1) | 1.002 | .457 | 4.818 | 1 | .028 | 2.725 |
| | ENTRY | | | 44.350 | 3 | .000 | |
| | ENTRY(1) | 1.701 | .644 | 6.963 | 1 | .008 | 5.477 |
| | ENTRY(2) | -1.191 | .617 | 3.734 | 1 | .053 | .304 |
| | ENTRY(3) | -3.718 | 1.187 | 9.815 | 1 | .002 | .024 |
| | PLACE2RE | | | 7.988 | 3 | .046 | |
| | PLACE2RE(1) | .096 | .963 | .010 | 1 | .921 | 1.100 |
| | PLACE2RE(2) | 1.200 | .928 | 1.673 | 1 | .196 | 3.322 |
| | PLACE2RE(3) | -.590 | .792 | .556 | 1 | .456 | .554 |
| | REGATTRA | | | 6.865 | 2 | .032 | |
| | REGATTRA(1) | -2.729 | 1.192 | 5.240 | 1 | .022 | .065 |
| | REGATTRA(2) | -3.367 | 1.290 | 6.817 | 1 | .009 | .034 |
| | REGORIGI | | | 3.993 | 3 | .262 | |
| | REGORIGI(1) | .991 | .714 | 1.924 | 1 | .165 | 2.693 |
| | REGORIGI(2) | .518 | .721 | .516 | 1 | .473 | 1.679 |
| | REGORIGI(3) | -.395 | .696 | .322 | 1 | .570 | .674 |
| | GENDER(1) | .463 | .451 | 1.051 | 1 | .305 | 1.588 |
| | REGEDUCA | | | 5.289 | 2 | .071 | |
| | REGEDUCA(1) | 1.507 | .668 | 5.096 | 1 | .024 | 4.514 |
| | REGEDUCA(2) | .800 | .508 | 2.480 | 1 | .115 | 2.226 |
| | REGINCOM | | | 7.292 | 2 | .026 | |
| | REGINCOM(1) | -.076 | .519 | .021 | 1 | .884 | .927 |
| | REGINCOM(2) | -1.858 | .725 | 6.559 | 1 | .010 | .156 |
| | HARMO | .510 | .327 | 2.424 | 1 | .119 | 1.665 |
| | Constant | 1.677 | 1.678 | .999 | 1 | .317 | 5.352 |
| Step 12[a] | REGGROUP(1) | 1.025 | .457 | 5.035 | 1 | .025 | 2.787 |
| | ENTRY | | | 44.819 | 3 | .000 | |
| | ENTRY(1) | 1.583 | .631 | 6.289 | 1 | .012 | 4.869 |
| | ENTRY(2) | -1.246 | .616 | 4.089 | 1 | .043 | .288 |
| | ENTRY(3) | -3.701 | 1.180 | 9.844 | 1 | .002 | .025 |
| | PLACE2RE | | | 7.721 | 3 | .052 | |
| | PLACE2RE(1) | .135 | .962 | .020 | 1 | .888 | 1.144 |
| | PLACE2RE(2) | 1.180 | .929 | 1.614 | 1 | .204 | 3.254 |
| | PLACE2RE(3) | -.565 | .791 | .510 | 1 | .475 | .568 |
| | REGATTRA | | | 6.909 | 2 | .032 | |
| | REGATTRA(1) | -2.679 | 1.178 | 5.174 | 1 | .023 | .069 |
| | REGATTRA(2) | -3.334 | 1.274 | 6.848 | 1 | .009 | .036 |
| | REGORIGI | | | 3.765 | 3 | .288 | |
| | REGORIGI(1) | .909 | .705 | 1.663 | 1 | .197 | 2.481 |
| | REGORIGI(2) | .462 | .717 | .415 | 1 | .519 | 1.587 |
| | REGORIGI(3) | -.435 | .690 | .397 | 1 | .528 | .647 |
| | REGEDUCA | | | 5.228 | 2 | .073 | |
| | REGEDUCA(1) | 1.488 | .663 | 5.038 | 1 | .025 | 4.427 |
| | REGEDUCA(2) | .783 | .504 | 2.419 | 1 | .120 | 2.188 |
| | REGINCOM | | | 7.517 | 2 | .023 | |
| | REGINCOM(1) | -.247 | .489 | .256 | 1 | .613 | .781 |
| | REGINCOM(2) | -1.952 | .724 | 7.272 | 1 | .007 | .142 |
| | HARMO | .474 | .316 | 2.250 | 1 | .134 | 1.607 |
| | Constant | 2.067 | 1.625 | 1.619 | 1 | .203 | 7.905 |

**Variables in the Equation**

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 13[a] | REGGROUP(1) | 1.099 | .448 | 6.030 | 1 | .014 | 3.002 |
| | ENTRY | | | 48.181 | 3 | .000 | |
| | ENTRY(1) | 1.893 | .601 | 9.909 | 1 | .002 | 6.641 |
| | ENTRY(2) | -.984 | .577 | 2.906 | 1 | .088 | .374 |
| | ENTRY(3) | -3.300 | 1.079 | 9.357 | 1 | .002 | .037 |
| | PLACE2RE | | | 5.808 | 3 | .121 | |
| | PLACE2RE(1) | -.219 | .882 | .062 | 1 | .804 | .803 |
| | PLACE2RE(2) | .898 | .855 | 1.102 | 1 | .294 | 2.454 |
| | PLACE2RE(3) | -.521 | .758 | .474 | 1 | .491 | .594 |
| | REGATTRA | | | 7.622 | 2 | .022 | |
| | REGATTRA(1) | -2.575 | 1.099 | 5.491 | 1 | .019 | .076 |
| | REGATTRA(2) | -3.278 | 1.196 | 7.508 | 1 | .006 | .038 |
| | REGEDUCA | | | 3.237 | 2 | .198 | |
| | REGEDUCA(1) | 1.086 | .617 | 3.095 | 1 | .079 | 2.961 |
| | REGEDUCA(2) | .588 | .478 | 1.513 | 1 | .219 | 1.800 |
| | REGINCOM | | | 9.991 | 2 | .007 | |
| | REGINCOM(1) | -.362 | .480 | .569 | 1 | .451 | .696 |
| | REGINCOM(2) | -2.192 | .699 | 9.836 | 1 | .002 | .112 |
| | HARMO | .297 | .258 | 1.321 | 1 | .250 | 1.345 |
| | Constant | 2.273 | 1.467 | 2.401 | 1 | .121 | 9.712 |
| Step 14[a] | REGGROUP(1) | .976 | .438 | 4.965 | 1 | .026 | 2.654 |
| | ENTRY | | | 47.787 | 3 | .000 | |
| | ENTRY(1) | 1.753 | .581 | 9.097 | 1 | .003 | 5.773 |
| | ENTRY(2) | -1.015 | .567 | 3.201 | 1 | .074 | .362 |
| | ENTRY(3) | -3.276 | 1.069 | 9.383 | 1 | .002 | .038 |
| | PLACE2RE | | | 7.372 | 3 | .061 | |
| | PLACE2RE(1) | .052 | .847 | .004 | 1 | .951 | 1.054 |
| | PLACE2RE(2) | 1.200 | .824 | 2.119 | 1 | .145 | 3.320 |
| | PLACE2RE(3) | -.370 | .734 | .254 | 1 | .614 | .691 |
| | REGATTRA | | | 6.638 | 2 | .036 | |
| | REGATTRA(1) | -2.356 | 1.069 | 4.858 | 1 | .028 | .095 |
| | REGATTRA(2) | -2.967 | 1.157 | 6.572 | 1 | .010 | .051 |
| | REGINCOM | | | 9.623 | 2 | .008 | |
| | REGINCOM(1) | -.107 | .448 | .057 | 1 | .811 | .898 |
| | REGINCOM(2) | -2.013 | .670 | 9.029 | 1 | .003 | .134 |
| | HARMO | .243 | .252 | .927 | 1 | .336 | 1.275 |
| | Constant | 2.350 | 1.429 | 2.705 | 1 | .100 | 10.484 |
| Step 15[a] | REGGROUP(1) | 1.050 | .433 | 5.868 | 1 | .015 | 2.857 |
| | ENTRY | | | 47.907 | 3 | .000 | |
| | ENTRY(1) | 1.619 | .563 | 8.265 | 1 | .004 | 5.049 |
| | ENTRY(2) | -1.120 | .556 | 4.052 | 1 | .044 | .326 |
| | ENTRY(3) | -3.484 | 1.056 | 10.893 | 1 | .001 | .031 |
| | PLACE2RE | | | 7.240 | 3 | .065 | |
| | PLACE2RE(1) | .205 | .831 | .061 | 1 | .806 | 1.227 |
| | PLACE2RE(2) | 1.251 | .817 | 2.345 | 1 | .126 | 3.494 |
| | PLACE2RE(3) | -.295 | .727 | .165 | 1 | .685 | .744 |
| | REGATTRA | | | 7.006 | 2 | .030 | |
| | REGATTRA(1) | -2.346 | 1.072 | 4.793 | 1 | .029 | .096 |
| | REGATTRA(2) | -3.037 | 1.161 | 6.836 | 1 | .009 | .048 |
| | REGINCOM | | | 9.745 | 2 | .008 | |
| | REGINCOM(1) | -.019 | .442 | .002 | 1 | .965 | .981 |
| | REGINCOM(2) | -1.961 | .659 | 8.857 | 1 | .003 | .141 |
| | Constant | 2.306 | 1.430 | 2.601 | 1 | .107 | 10.030 |

## Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 1[a] | REDTRANS(1) | .292 | 17.358 |
| | REGPREV | | |
| | REGPREV(1) | .362 | 7.530 |
| | REGPREV(2) | .157 | 3.073 |
| | REGGROUP(1) | .750 | 6.067 |
| | ENTRY | | |
| | ENTRY(1) | 1.032 | 21.267 |
| | ENTRY(2) | .077 | 1.206 |
| | ENTRY(3) | .002 | .294 |
| | ENTRYDUR | .828 | 1.143 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .106 | 8.172 |
| | PLACE2RE(2) | .390 | 18.946 |
| | PLACE2RE(3) | .080 | 2.321 |
| | TOTALDUR | .903 | 1.062 |
| | REGATTRA | | |
| | REGATTRA(1) | .003 | .669 |
| | REGATTRA(2) | .001 | .388 |
| | REGDISTA | | |
| | REGDISTA(1) | .242 | 23.674 |
| | REGDISTA(2) | .189 | 12.333 |
| | REGORIGI | | |
| | REGORIGI(1) | .204 | 40.475 |
| | REGORIGI(2) | .113 | 27.825 |
| | REGORIGI(3) | .065 | 7.655 |
| | ETHNIC(1) | .175 | 12.569 |
| | GENDER(1) | .571 | 3.743 |
| | REGSPEND | | |
| | REGSPEND(1) | .431 | 7.350 |
| | REGSPEND(2) | .182 | 2.701 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.113 | 20.675 |
| | REGEDUCA(2) | .827 | 7.240 |
| | REGINCOM | | |
| | REGINCOM(1) | .392 | 3.653 |
| | REGINCOM(2) | .034 | .650 |
| | REGAGE(1) | .294 | 3.370 |
| | MARRIAGE(1) | .241 | 2.917 |
| | UNDER | .391 | 2.358 |
| | HARMO | .880 | 3.648 |
| | Constant | | |

## Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 2[a] | REDTRANS(1) | .292 | 17.364 |
| | REGPREV | | |
| | REGPREV(1) | .377 | 7.214 |
| | REGPREV(2) | .157 | 3.063 |
| | REGGROUP(1) | .772 | 5.906 |
| | ENTRY | | |
| | ENTRY(1) | 1.033 | 21.266 |
| | ENTRY(2) | .077 | 1.196 |
| | ENTRY(3) | .002 | .287 |
| | ENTRYDUR | .828 | 1.143 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .108 | 8.004 |
| | PLACE2RE(2) | .398 | 18.609 |
| | PLACE2RE(3) | .080 | 2.317 |
| | TOTALDUR | .903 | 1.062 |
| | REGATTRA | | |
| | REGATTRA(1) | .003 | .666 |
| | REGATTRA(2) | .001 | .384 |
| | REGDISTA | | |
| | REGDISTA(1) | .242 | 23.653 |
| | REGDISTA(2) | .189 | 12.329 |
| | REGORIGI | | |
| | REGORIGI(1) | .205 | 40.410 |
| | REGORIGI(2) | .113 | 27.815 |
| | REGORIGI(3) | .065 | 7.609 |
| | ETHNIC(1) | .177 | 12.427 |
| | GENDER(1) | .579 | 3.693 |
| | REGSPEND | | |
| | REGSPEND(1) | .445 | 7.101 |
| | REGSPEND(2) | .184 | 2.663 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.119 | 20.575 |
| | REGEDUCA(2) | .832 | 7.194 |
| | REGINCOM | | |
| | REGINCOM(1) | .392 | 3.652 |
| | REGINCOM(2) | .034 | .650 |
| | MARRIAGE(1) | .267 | 2.625 |
| | UNDER | .392 | 2.356 |
| | HARMO | .881 | 3.642 |
| | Constant | | |

**Variables in the Equation**

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 3[a] | REDTRANS(1) | .299 | 17.347 |
| | REGPREV | | |
| | REGPREV(1) | .377 | 7.095 |
| | REGPREV(2) | .157 | 3.014 |
| | REGGROUP(1) | .771 | 5.867 |
| | ENTRY | | |
| | ENTRY(1) | 1.051 | 20.334 |
| | ENTRY(2) | .077 | 1.178 |
| | ENTRY(3) | .002 | .287 |
| | ENTRYDUR | .829 | 1.143 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .110 | 8.007 |
| | PLACE2RE(2) | .397 | 18.453 |
| | PLACE2RE(3) | .080 | 2.315 |
| | TOTALDUR | .905 | 1.061 |
| | REGATTRA | | |
| | REGATTRA(1) | .003 | .644 |
| | REGATTRA(2) | .001 | .381 |
| | REGDISTA | | |
| | REGDISTA(1) | .241 | 23.544 |
| | REGDISTA(2) | .190 | 12.397 |
| | REGORIGI | | |
| | REGORIGI(1) | .229 | 33.416 |
| | REGORIGI(2) | .132 | 21.720 |
| | REGORIGI(3) | .065 | 7.528 |
| | ETHNIC(1) | .199 | 11.695 |
| | GENDER(1) | .582 | 3.695 |
| | REGSPEND | | |
| | REGSPEND(1) | .445 | 7.032 |
| | REGSPEND(2) | .185 | 2.666 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.119 | 20.391 |
| | REGEDUCA(2) | .851 | 7.148 |
| | REGINCOM | | |
| | REGINCOM(1) | .394 | 3.657 |
| | REGINCOM(2) | .036 | .640 |
| | MARRIAGE(1) | .267 | 2.624 |
| | HARMO | .889 | 3.560 |
| | Constant | | |

**Variables in the Equation**

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 4[a] | REDTRANS(1) | .289 | 15.530 |
| | REGPREV | | |
| | REGPREV(1) | .373 | 6.760 |
| | REGPREV(2) | .159 | 3.012 |
| | REGGROUP(1) | .838 | 5.908 |
| | ENTRY | | |
| | ENTRY(1) | 1.033 | 19.533 |
| | ENTRY(2) | .078 | 1.189 |
| | ENTRY(3) | .002 | .275 |
| | ENTRYDUR | .832 | 1.144 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .107 | 7.615 |
| | PLACE2RE(2) | .392 | 17.937 |
| | PLACE2RE(3) | .079 | 2.258 |
| | TOTALDUR | .904 | 1.058 |
| | REGATTRA | | |
| | REGATTRA(1) | .003 | .630 |
| | REGATTRA(2) | .001 | .381 |
| | REGDISTA | | |
| | REGDISTA(1) | .234 | 22.378 |
| | REGDISTA(2) | .184 | 11.685 |
| | REGORIGI | | |
| | REGORIGI(1) | .232 | 33.264 |
| | REGORIGI(2) | .131 | 20.967 |
| | REGORIGI(3) | .066 | 7.570 |
| | ETHNIC(1) | .196 | 11.221 |
| | GENDER(1) | .592 | 3.730 |
| | REGSPEND | | |
| | REGSPEND(1) | .437 | 6.647 |
| | REGSPEND(2) | .185 | 2.653 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.119 | 20.358 |
| | REGEDUCA(2) | .844 | 6.719 |
| | REGINCOM | | |
| | REGINCOM(1) | .388 | 3.465 |
| | REGINCOM(2) | .035 | .630 |
| | HARMO | .885 | 3.489 |
| | Constant | | |

**Variables in the Equation**

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 5[a] | REDTRANS(1) | .280 | 14.669 |
| | REGPREV | | |
| | REGPREV(1) | .402 | 6.840 |
| | REGPREV(2) | .166 | 3.045 |
| | REGGROUP(1) | .839 | 5.886 |
| | ENTRY | | |
| | ENTRY(1) | 1.014 | 18.085 |
| | ENTRY(2) | .077 | 1.165 |
| | ENTRY(3) | .002 | .267 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .107 | 6.223 |
| | PLACE2RE(2) | .385 | 17.305 |
| | PLACE2RE(3) | .078 | 2.224 |
| | TOTALDUR | .906 | 1.041 |
| | REGATTRA | | |
| | REGATTRA(1) | .003 | .656 |
| | REGATTRA(2) | .001 | .394 |
| | REGDISTA | | |
| | REGDISTA(1) | .234 | 22.354 |
| | REGDISTA(2) | .184 | 11.612 |
| | REGORIGI | | |
| | REGORIGI(1) | .244 | 33.754 |
| | REGORIGI(2) | .137 | 21.337 |
| | REGORIGI(3) | .068 | 7.547 |
| | ETHNIC(1) | .208 | 11.330 |
| | GENDER(1) | .592 | 3.742 |
| | REGSPEND | | |
| | REGSPEND(1) | .445 | 6.681 |
| | REGSPEND(2) | .182 | 2.627 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.125 | 20.350 |
| | REGEDUCA(2) | .840 | 6.675 |
| | REGINCOM | | |
| | REGINCOM(1) | .384 | 3.382 |
| | REGINCOM(2) | .035 | .616 |
| | HARMO | .896 | 3.524 |
| | Constant | | |

**Variables in the Equation**

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 6[a] | REDTRANS(1) | .299 | 15.179 |
| | REGPREV | | |
| | REGPREV(1) | .409 | 6.791 |
| | REGPREV(2) | .157 | 2.799 |
| | REGGROUP(1) | .806 | 5.503 |
| | ENTRY | | |
| | ENTRY(1) | 1.150 | 18.101 |
| | ENTRY(2) | .085 | 1.209 |
| | ENTRY(3) | .002 | .270 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .098 | 5.344 |
| | PLACE2RE(2) | .378 | 16.544 |
| | PLACE2RE(3) | .073 | 1.978 |
| | TOTALDUR | .908 | 1.041 |
| | REGATTRA | | |
| | REGATTRA(1) | .003 | .618 |
| | REGATTRA(2) | .001 | .367 |
| | REGORIGI | | |
| | REGORIGI(1) | .369 | 39.962 |
| | REGORIGI(2) | .197 | 25.214 |
| | REGORIGI(3) | .069 | 6.545 |
| | ETHNIC(1) | .194 | 9.540 |
| | GENDER(1) | .611 | 3.816 |
| | REGSPEND | | |
| | REGSPEND(1) | .452 | 6.713 |
| | REGSPEND(2) | .177 | 2.540 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.227 | 19.769 |
| | REGEDUCA(2) | .841 | 6.482 |
| | REGINCOM | | |
| | REGINCOM(1) | .391 | 3.371 |
| | REGINCOM(2) | .035 | .599 |
| | HARMO | .914 | 3.572 |
| | Constant | | |

**Variables in the Equation**

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 7[a] | REDTRANS(1) | .298 | 14.962 |
| | REGPREV | | |
| | REGPREV(1) | .407 | 6.133 |
| | REGPREV(2) | .157 | 2.768 |
| | REGGROUP(1) | .798 | 5.376 |
| | ENTRY | | |
| | ENTRY(1) | 1.149 | 18.050 |
| | ENTRY(2) | .086 | 1.208 |
| | ENTRY(3) | .002 | .269 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .102 | 5.452 |
| | PLACE2RE(2) | .386 | 16.664 |
| | PLACE2RE(3) | .074 | 1.986 |
| | TOTALDUR | .909 | 1.042 |
| | REGATTRA | | |
| | REGATTRA(1) | .003 | .636 |
| | REGATTRA(2) | .002 | .379 |
| | REGORIGI | | |
| | REGORIGI(1) | .464 | 20.491 |
| | REGORIGI(2) | .267 | 11.444 |
| | REGORIGI(3) | .095 | 2.970 |
| | GENDER(1) | .613 | 3.809 |
| | REGSPEND | | |
| | REGSPEND(1) | .455 | 6.754 |
| | REGSPEND(2) | .181 | 2.570 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.225 | 19.632 |
| | REGEDUCA(2) | .844 | 6.499 |
| | REGINCOM | | |
| | REGINCOM(1) | .388 | 3.311 |
| | REGINCOM(2) | .035 | .605 |
| | HARMO | .909 | 3.539 |
| | Constant | | |
| Step 8[a] | REDTRANS(1) | .294 | 14.102 |
| | REGPREV | | |
| | REGPREV(1) | .404 | 5.840 |
| | REGPREV(2) | .162 | 2.700 |
| | REGGROUP(1) | .882 | 5.714 |
| | ENTRY | | |
| | ENTRY(1) | 1.226 | 17.701 |
| | ENTRY(2) | .088 | 1.082 |
| | ENTRY(3) | .002 | .240 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .120 | 6.041 |
| | PLACE2RE(2) | .408 | 16.874 |
| | PLACE2RE(3) | .086 | 2.189 |
| | TOTALDUR | .908 | 1.040 |
| | REGATTRA | | |
| | REGATTRA(1) | .003 | .493 |
| | REGATTRA(2) | .001 | .314 |
| | REGORIGI | | |
| | REGORIGI(1) | .379 | 14.082 |
| | REGORIGI(2) | .219 | 8.288 |
| | REGORIGI(3) | .081 | 2.200 |
| | GENDER(1) | .676 | 4.122 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.233 | 18.882 |
| | REGEDUCA(2) | .824 | 6.209 |
| | REGINCOM | | |
| | REGINCOM(1) | .391 | 3.235 |
| | REGINCOM(2) | .038 | .641 |
| | HARMO | .904 | 3.480 |
| | Constant | | |

## Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 9[a] | REGPREV | | |
| | REGPREV(1) | .392 | 5.579 |
| | REGPREV(2) | .166 | 2.748 |
| | REGGROUP(1) | .964 | 6.000 |
| | ENTRY | | |
| | ENTRY(1) | 1.488 | 19.418 |
| | ENTRY(2) | .101 | 1.157 |
| | ENTRY(3) | .002 | .234 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .122 | 6.090 |
| | PLACE2RE(2) | .444 | 18.186 |
| | PLACE2RE(3) | .097 | 2.390 |
| | TOTALDUR | .908 | 1.035 |
| | REGATTRA | | |
| | REGATTRA(1) | .003 | .482 |
| | REGATTRA(2) | .001 | .300 |
| | REGORIGI | | |
| | REGORIGI(1) | .425 | 15.154 |
| | REGORIGI(2) | .252 | 8.944 |
| | REGORIGI(3) | .100 | 2.412 |
| | GENDER(1) | .686 | 4.174 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.186 | 16.782 |
| | REGEDUCA(2) | .824 | 6.232 |
| | REGINCOM | | |
| | REGINCOM(1) | .373 | 2.969 |
| | REGINCOM(2) | .038 | .638 |
| | HARMO | .895 | 3.367 |
| | Constant | | |
| Step 10[a] | REGGROUP(1) | 1.033 | 6.349 |
| | ENTRY | | |
| | ENTRY(1) | 1.490 | 18.811 |
| | ENTRY(2) | .092 | 1.053 |
| | ENTRY(3) | .002 | .229 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .152 | 6.809 |
| | PLACE2RE(2) | .536 | 20.739 |
| | PLACE2RE(3) | .117 | 2.586 |
| | TOTALDUR | .909 | 1.037 |
| | REGATTRA | | |
| | REGATTRA(1) | .007 | .645 |
| | REGATTRA(2) | .003 | .421 |
| | REGORIGI | | |
| | REGORIGI(1) | .748 | 14.191 |
| | REGORIGI(2) | .458 | 8.928 |
| | REGORIGI(3) | .163 | 2.534 |
| | GENDER(1) | .665 | 3.952 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.247 | 17.307 |
| | REGEDUCA(2) | .805 | 5.949 |
| | REGINCOM | | |
| | REGINCOM(1) | .355 | 2.777 |
| | REGINCOM(2) | .038 | .640 |
| | HARMO | .881 | 3.202 |
| | Constant | | |

**Variables in the Equation**

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 11[a] | REGGROUP(1) | 1.113 | 6.668 |
| | ENTRY | | |
| | ENTRY(1) | 1.549 | 19.370 |
| | ENTRY(2) | .091 | 1.017 |
| | ENTRY(3) | .002 | .249 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .167 | 7.262 |
| | PLACE2RE(2) | .539 | 20.485 |
| | PLACE2RE(3) | .117 | 2.616 |
| | REGATTRA | | |
| | REGATTRA(1) | .006 | .675 |
| | REGATTRA(2) | .003 | .432 |
| | REGORIGI | | |
| | REGORIGI(1) | .664 | 10.919 |
| | REGORIGI(2) | .408 | 6.905 |
| | REGORIGI(3) | .172 | 2.633 |
| | GENDER(1) | .656 | 3.847 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.220 | 16.704 |
| | REGEDUCA(2) | .822 | 6.027 |
| | REGINCOM | | |
| | REGINCOM(1) | .335 | 2.563 |
| | REGINCOM(2) | .038 | .647 |
| | HARMO | .876 | 3.162 |
| | Constant | | |
| Step 12[a] | REGGROUP(1) | 1.139 | 6.825 |
| | ENTRY | | |
| | ENTRY(1) | 1.413 | 16.777 |
| | ENTRY(2) | .086 | .962 |
| | ENTRY(3) | .002 | .249 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .174 | 7.544 |
| | PLACE2RE(2) | .527 | 20.089 |
| | PLACE2RE(3) | .120 | 2.681 |
| | REGATTRA | | |
| | REGATTRA(1) | .007 | .690 |
| | REGATTRA(2) | .003 | .433 |
| | REGORIGI | | |
| | REGORIGI(1) | .624 | 9.871 |
| | REGORIGI(2) | .390 | 6.463 |
| | REGORIGI(3) | .167 | 2.503 |
| | REGEDUCA | | |
| | REGEDUCA(1) | 1.208 | 16.233 |
| | REGEDUCA(2) | .816 | 5.871 |
| | REGINCOM | | |
| | REGINCOM(1) | .299 | 2.037 |
| | REGINCOM(2) | .034 | .587 |
| | HARMO | .865 | 2.987 |
| | Constant | | |

## Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 13[a] | REGGROUP(1) | 1.248 | 7.221 |
| | ENTRY | | |
| | ENTRY(1) | 2.043 | 21.587 |
| | ENTRY(2) | .120 | 1.159 |
| | ENTRY(3) | .004 | .306 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .143 | 4.527 |
| | PLACE2RE(2) | .459 | 13.116 |
| | PLACE2RE(3) | .135 | 2.621 |
| | REGATTRA | | |
| | REGATTRA(1) | .009 | .656 |
| | REGATTRA(2) | .004 | .393 |
| | REGEDUCA | | |
| | REGEDUCA(1) | .883 | 9.924 |
| | REGEDUCA(2) | .706 | 4.591 |
| | REGINCOM | | |
| | REGINCOM(1) | .272 | 1.783 |
| | REGINCOM(2) | .028 | .440 |
| | HARMO | .811 | 2.230 |
| | Constant | | |
| Step 14[a] | REGGROUP(1) | 1.125 | 6.265 |
| | ENTRY | | |
| | ENTRY(1) | 1.848 | 18.039 |
| | ENTRY(2) | .119 | 1.102 |
| | ENTRY(3) | .005 | .307 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .200 | 5.547 |
| | PLACE2RE(2) | .660 | 16.698 |
| | PLACE2RE(3) | .164 | 2.910 |
| | REGATTRA | | |
| | REGATTRA(1) | .012 | .770 |
| | REGATTRA(2) | .005 | .497 |
| | REGINCOM | | |
| | REGINCOM(1) | .373 | 2.162 |
| | REGINCOM(2) | .036 | .497 |
| | HARMO | .778 | 2.089 |
| | Constant | | |
| Step 15[a] | REGGROUP(1) | 1.222 | 6.681 |
| | ENTRY | | |
| | ENTRY(1) | 1.674 | 15.225 |
| | ENTRY(2) | .110 | .971 |
| | ENTRY(3) | .004 | .243 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .241 | 6.260 |
| | PLACE2RE(2) | .705 | 17.331 |
| | PLACE2RE(3) | .179 | 3.096 |
| | REGATTRA | | |
| | REGATTRA(1) | .012 | .782 |
| | REGATTRA(2) | .005 | .468 |
| | REGINCOM | | |
| | REGINCOM(1) | .412 | 2.334 |
| | REGINCOM(2) | .039 | .512 |
| | Constant | | |

a. Variable(s) entered on step 1: REDTRANS, REGPREV, REGGROUP, ENTRY, ENTRYDUR, PLACE2RE, TOTALDUR, REGATTRA, REGDISTA, REGORIGI, ETHNIC, GENDER, REGSPEND, REGEDUCA, REGINCOM, REGAGE, MARRIAGE, UNDER, HARMO.

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 1 | REDTRANS | -77.802 | .610 | 1 | .435 |
| | REGPREV | -78.442 | 1.889 | 2 | .389 |
| | REGGROUP | -78.523 | 2.051 | 1 | .152 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 1 | ENTRY | -102.915 | 50.835 | 3 | .000 |
| | ENTRYDUR | -77.553 | .112 | 1 | .738 |
| | PLACE2RE | -81.772 | 8.548 | 3 | .036 |
| | TOTALDUR | -77.645 | .296 | 1 | .587 |
| | REGATTRA | -81.525 | 8.054 | 2 | .018 |
| | REGDISTA | -77.834 | .672 | 2 | .715 |
| | REGORIGI | -78.475 | 1.956 | 3 | .582 |
| | ETHNIC | -77.563 | .131 | 1 | .717 |
| | GENDER | -77.813 | .631 | 1 | .427 |
| | REGSPEND | -78.157 | 1.320 | 2 | .517 |
| | REGEDUCA | -80.126 | 5.257 | 2 | .072 |
| | REGINCOM | -81.828 | 8.662 | 2 | .013 |
| | REGAGE | -77.498 | .000 | 1 | .994 |
| | MARRIAGE | -77.536 | .077 | 1 | .782 |
| | UNDER | -77.501 | .008 | 1 | .930 |
| | HARMO | -79.202 | 3.410 | 1 | .065 |
| Step 2 | REDTRANS | -77.802 | .610 | 1 | .435 |
| | REGPREV | -78.488 | 1.981 | 2 | .371 |
| | REGGROUP | -78.584 | 2.173 | 1 | .140 |
| | ENTRY | -102.915 | 50.835 | 3 | .000 |
| | ENTRYDUR | -77.554 | .112 | 1 | .737 |
| | PLACE2RE | -81.852 | 8.709 | 3 | .033 |
| | TOTALDUR | -77.645 | .296 | 1 | .587 |
| | REGATTRA | -81.533 | 8.071 | 2 | .018 |
| | REGDISTA | -77.835 | .675 | 2 | .714 |
| | REGORIGI | -78.476 | 1.956 | 3 | .582 |
| | ETHNIC | -77.563 | .132 | 1 | .717 |
| | GENDER | -77.824 | .653 | 1 | .419 |
| | REGSPEND | -78.163 | 1.330 | 2 | .514 |
| | REGEDUCA | -80.128 | 5.260 | 2 | .072 |
| | REGINCOM | -81.831 | 8.667 | 2 | .013 |
| | MARRIAGE | -77.544 | .093 | 1 | .760 |
| | UNDER | -77.501 | .008 | 1 | .930 |
| | HARMO | -79.202 | 3.410 | 1 | .065 |
| Step 3 | REDTRANS | -77.818 | .633 | 1 | .426 |
| | REGPREV | -78.491 | 1.978 | 2 | .372 |
| | REGGROUP | -78.585 | 2.166 | 1 | .141 |
| | ENTRY | -103.265 | 51.528 | 3 | .000 |
| | ENTRYDUR | -77.556 | .109 | 1 | .741 |
| | PLACE2RE | -81.897 | 8.790 | 3 | .032 |
| | TOTALDUR | -77.645 | .288 | 1 | .591 |
| | REGATTRA | -81.536 | 8.069 | 2 | .018 |
| | REGDISTA | -77.835 | .667 | 2 | .716 |
| | REGORIGI | -78.538 | 2.073 | 3 | .557 |
| | ETHNIC | -77.583 | .163 | 1 | .686 |
| | GENDER | -77.834 | .665 | 1 | .415 |
| | REGSPEND | -78.163 | 1.324 | 2 | .516 |
| | REGEDUCA | -80.132 | 5.261 | 2 | .072 |
| | REGINCOM | -81.907 | 8.811 | 2 | .012 |
| | MARRIAGE | -77.548 | .093 | 1 | .760 |
| | HARMO | -79.207 | 3.411 | 1 | .065 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 4 | REDTRANS | -77.824 | .553 | 1 | .457 |
| | REGPREV | -78.492 | 1.887 | 2 | .389 |
| | REGGROUP | -78.854 | 2.612 | 1 | .106 |
| | ENTRY | -103.303 | 51.510 | 3 | .000 |
| | ENTRYDUR | -77.595 | .093 | 1 | .760 |
| | PLACE2RE | -81.930 | 8.765 | 3 | .033 |
| | TOTALDUR | -77.731 | .366 | 1 | .545 |
| | REGATTRA | -81.606 | 8.116 | 2 | .017 |
| | REGDISTA | -77.866 | .635 | 2 | .728 |
| | REGORIGI | -78.590 | 2.083 | 3 | .555 |
| | ETHNIC | -77.620 | .144 | 1 | .704 |
| | GENDER | -77.907 | .718 | 1 | .397 |
| | REGSPEND | -78.175 | 1.253 | 2 | .534 |
| | REGEDUCA | -80.146 | 5.196 | 2 | .074 |
| | REGINCOM | -81.932 | 8.767 | 2 | .012 |
| | HARMO | -79.224 | 3.352 | 1 | .067 |
| Step 5 | REDTRANS | -77.843 | .497 | 1 | .481 |
| | REGPREV | -78.602 | 2.015 | 2 | .365 |
| | REGGROUP | -78.903 | 2.616 | 1 | .106 |
| | ENTRY | -103.688 | 52.187 | 3 | .000 |
| | PLACE2RE | -81.949 | 8.708 | 3 | .033 |
| | TOTALDUR | -77.981 | .772 | 1 | .380 |
| | REGATTRA | -81.608 | 8.026 | 2 | .018 |
| | REGDISTA | -77.914 | .638 | 2 | .727 |
| | REGORIGI | -78.669 | 2.148 | 3 | .542 |
| | ETHNIC | -77.682 | .175 | 1 | .676 |
| | GENDER | -77.957 | .725 | 1 | .394 |
| | REGSPEND | -78.259 | 1.328 | 2 | .515 |
| | REGEDUCA | -80.199 | 5.208 | 2 | .074 |
| | REGINCOM | -82.045 | 8.901 | 2 | .012 |
| | HARMO | -79.327 | 3.465 | 1 | .063 |
| Step 6 | REDTRANS | -78.203 | .578 | 1 | .447 |
| | REGPREV | -79.138 | 2.448 | 2 | .294 |
| | REGGROUP | -79.079 | 2.329 | 1 | .127 |
| | ENTRY | -105.117 | 54.405 | 3 | .000 |
| | PLACE2RE | -82.748 | 9.668 | 3 | .022 |
| | TOTALDUR | -78.277 | .727 | 1 | .394 |
| | REGATTRA | -82.063 | 8.299 | 2 | .016 |
| | REGORIGI | -80.603 | 5.377 | 3 | .146 |
| | ETHNIC | -77.962 | .096 | 1 | .757 |
| | GENDER | -78.329 | .830 | 1 | .362 |
| | REGSPEND | -78.640 | 1.453 | 2 | .484 |
| | REGEDUCA | -80.787 | 5.746 | 2 | .057 |
| | REGINCOM | -82.519 | 9.209 | 2 | .010 |
| | HARMO | -79.745 | 3.662 | 1 | .056 |
| Step 7 | REDTRANS | -78.246 | .569 | 1 | .451 |
| | REGPREV | -79.145 | 2.367 | 2 | .306 |
| | REGGROUP | -79.088 | 2.253 | 1 | .133 |
| | ENTRY | -105.244 | 54.565 | 3 | .000 |
| | PLACE2RE | -82.820 | 9.717 | 3 | .021 |
| | TOTALDUR | -78.316 | .709 | 1 | .400 |
| | REGATTRA | -82.072 | 8.220 | 2 | .016 |
| | REGORIGI | -80.663 | 5.402 | 3 | .145 |
| | GENDER | -78.381 | .837 | 1 | .360 |
| | REGSPEND | -78.674 | 1.424 | 2 | .491 |
| | REGEDUCA | -80.833 | 5.742 | 2 | .057 |
| | REGINCOM | -82.519 | 9.113 | 2 | .010 |
| | HARMO | -79.767 | 3.610 | 1 | .057 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 8 | REDTRANS | -78.935 | .523 | 1 | .470 |
| | REGPREV | -79.805 | 2.262 | 2 | .323 |
| | REGGROUP | -80.137 | 2.926 | 1 | .087 |
| | ENTRY | -106.927 | 56.506 | 3 | .000 |
| | PLACE2RE | -83.179 | 9.011 | 3 | .029 |
| | TOTALDUR | -79.071 | .794 | 1 | .373 |
| | REGATTRA | -83.173 | 8.997 | 2 | .011 |
| | REGORIGI | -81.266 | 5.183 | 3 | .159 |
| | GENDER | -79.302 | 1.256 | 1 | .262 |
| | REGEDUCA | -81.536 | 5.723 | 2 | .057 |
| | REGINCOM | -83.057 | 8.767 | 2 | .012 |
| | HARMO | -80.590 | 3.831 | 1 | .050 |
| Step 9 | REGPREV | -79.934 | 1.997 | 2 | .368 |
| | REGGROUP | -80.743 | 3.615 | 1 | .057 |
| | ENTRY | -112.101 | 66.332 | 3 | .000 |
| | PLACE2RE | -83.304 | 8.737 | 3 | .033 |
| | TOTALDUR | -79.468 | 1.066 | 1 | .302 |
| | REGATTRA | -83.599 | 9.327 | 2 | .009 |
| | REGORIGI | -81.371 | 4.872 | 3 | .181 |
| | GENDER | -79.599 | 1.328 | 1 | .249 |
| | REGEDUCA | -81.648 | 5.426 | 2 | .066 |
| | REGINCOM | -83.223 | 8.576 | 2 | .014 |
| | HARMO | -80.791 | 3.711 | 1 | .054 |
| Step 10 | REGGROUP | -82.057 | 4.247 | 1 | .039 |
| | ENTRY | -116.942 | 74.017 | 3 | .000 |
| | PLACE2RE | -84.295 | 8.722 | 3 | .033 |
| | TOTALDUR | -80.389 | .911 | 1 | .340 |
| | REGATTRA | -83.909 | 7.950 | 2 | .019 |
| | REGORIGI | -82.457 | 5.046 | 3 | .168 |
| | GENDER | -80.507 | 1.147 | 1 | .284 |
| | REGEDUCA | -82.790 | 5.713 | 2 | .057 |
| | REGINCOM | -84.101 | 8.334 | 2 | .015 |
| | HARMO | -81.741 | 3.615 | 1 | .057 |
| Step 11 | REGGROUP | -82.885 | 4.991 | 1 | .025 |
| | ENTRY | -117.429 | 74.080 | 3 | .000 |
| | PLACE2RE | -84.776 | 8.773 | 3 | .032 |
| | REGATTRA | -84.288 | 7.797 | 2 | .020 |
| | REGORIGI | -82.499 | 4.219 | 3 | .239 |
| | GENDER | -80.923 | 1.066 | 1 | .302 |
| | REGEDUCA | -83.188 | 5.598 | 2 | .061 |
| | REGINCOM | -84.360 | 7.941 | 2 | .019 |
| | HARMO | -82.169 | 3.560 | 1 | .059 |
| Step 12 | REGGROUP | -83.533 | 5.221 | 1 | .022 |
| | ENTRY | -117.433 | 73.021 | 3 | .000 |
| | PLACE2RE | -85.135 | 8.425 | 3 | .038 |
| | REGATTRA | -84.884 | 7.924 | 2 | .019 |
| | REGORIGI | -82.909 | 3.972 | 3 | .264 |
| | REGEDUCA | -83.683 | 5.522 | 2 | .063 |
| | REGINCOM | -85.029 | 8.213 | 2 | .016 |
| | HARMO | -82.625 | 3.404 | 1 | .065 |
| Step 13 | REGGROUP | -86.053 | 6.289 | 1 | .012 |
| | ENTRY | -123.111 | 80.404 | 3 | .000 |
| | PLACE2RE | -86.047 | 6.277 | 3 | .099 |
| | REGATTRA | -87.155 | 8.493 | 2 | .014 |
| | REGEDUCA | -84.592 | 3.367 | 2 | .186 |
| | REGINCOM | -88.561 | 11.305 | 2 | .004 |
| | HARMO | -83.824 | 1.832 | 1 | .176 |
| Step 14 | REGGROUP | -87.164 | 5.143 | 1 | .023 |
| | ENTRY | -123.572 | 77.960 | 3 | .000 |
| | PLACE2RE | -88.690 | 8.196 | 3 | .042 |
| | REGATTRA | -88.323 | 7.462 | 2 | .024 |
| | REGINCOM | -89.999 | 10.814 | 2 | .004 |
| | HARMO | -85.197 | 1.209 | 1 | .271 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 15 | REGGROUP | -88.262 | 6.131 | 1 | .013 |
| | ENTRY | -124.984 | 79.575 | 3 | .000 |
| | PLACE2RE | -89.210 | 8.026 | 3 | .045 |
| | REGATTRA | -89.113 | 7.833 | 2 | .020 |
| | REGINCOM | -90.638 | 10.882 | 2 | .004 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 2[a] | Variables | REGAGE(1) | .000 | 1 | .994 |
| | Overall Statistics | | .000 | 1 | .994 |
| Step 3[b] | Variables | REGAGE(1) | .000 | 1 | .998 |
| | | UNDER | .008 | 1 | .930 |
| | Overall Statistics | | .008 | 2 | .996 |
| Step 4[c] | Variables | REGAGE(1) | .015 | 1 | .901 |
| | | MARRIAGE(1) | .094 | 1 | .760 |
| | | UNDER | .008 | 1 | .928 |
| | Overall Statistics | | .101 | 3 | .992 |
| Step 5[d] | Variables | ENTRYDUR | .094 | 1 | .759 |
| | | REGAGE(1) | .018 | 1 | .894 |
| | | MARRIAGE(1) | .078 | 1 | .780 |
| | | UNDER | .005 | 1 | .946 |
| | Overall Statistics | | .195 | 4 | .996 |
| Step 6[e] | Variables | ENTRYDUR | .098 | 1 | .755 |
| | | REGDISTA | .637 | 2 | .727 |
| | | REGDISTA(1) | .508 | 1 | .476 |
| | | REGDISTA(2) | .129 | 1 | .719 |
| | | REGAGE(1) | .024 | 1 | .876 |
| | | MARRIAGE(1) | .048 | 1 | .826 |
| | | UNDER | .001 | 1 | .978 |
| | Overall Statistics | | .835 | 6 | .991 |
| Step 7[f] | Variables | ENTRYDUR | .118 | 1 | .731 |
| | | REGDISTA | .559 | 2 | .756 |
| | | REGDISTA(1) | .419 | 1 | .518 |
| | | REGDISTA(2) | .092 | 1 | .761 |
| | | ETHNIC(1) | .097 | 1 | .756 |
| | | REGAGE(1) | .011 | 1 | .917 |
| | | MARRIAGE(1) | .034 | 1 | .854 |
| | | UNDER | .005 | 1 | .946 |
| | Overall Statistics | | .932 | 7 | .996 |
| Step 8[g] | Variables | ENTRYDUR | .205 | 1 | .651 |
| | | REGDISTA | .679 | 2 | .712 |
| | | REGDISTA(1) | .560 | 1 | .454 |
| | | REGDISTA(2) | .165 | 1 | .685 |
| | | ETHNIC(1) | .068 | 1 | .795 |
| | | REGSPEND | 1.416 | 2 | .493 |
| | | REGSPEND(1) | 1.075 | 1 | .300 |
| | | REGSPEND(2) | .751 | 1 | .386 |
| | | REGAGE(1) | .001 | 1 | .972 |
| | | MARRIAGE(1) | .001 | 1 | .981 |
| | | UNDER | .009 | 1 | .926 |
| | Overall Statistics | | 2.387 | 9 | .984 |
| Step 9[h] | Variables | REDTRANS(1) | .520 | 1 | .471 |
| | | ENTRYDUR | .110 | 1 | .740 |
| | | REGDISTA | .742 | 2 | .690 |
| | | REGDISTA(1) | .640 | 1 | .424 |
| | | REGDISTA(2) | .210 | 1 | .647 |
| | | ETHNIC(1) | .062 | 1 | .803 |
| | | REGSPEND | 1.373 | 2 | .503 |
| | | REGSPEND(1) | 1.031 | 1 | .310 |
| | | REGSPEND(2) | .765 | 1 | .382 |
| | | REGAGE(1) | .012 | 1 | .913 |
| | | MARRIAGE(1) | .022 | 1 | .881 |
| | | UNDER | .000 | 1 | .985 |
| | Overall Statistics | | 2.891 | 10 | .984 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 10[i] | Variables | REDTRANS(1) | .257 | 1 | .612 |
| | | REGPREV | 2.031 | 2 | .362 |
| | | REGPREV(1) | 1.708 | 1 | .191 |
| | | REGPREV(2) | 1.682 | 1 | .195 |
| | | ENTRYDUR | .246 | 1 | .620 |
| | | REGDISTA | 1.256 | 2 | .534 |
| | | REGDISTA(1) | 1.147 | 1 | .284 |
| | | REGDISTA(2) | .487 | 1 | .485 |
| | | ETHNIC(1) | .019 | 1 | .891 |
| | | REGSPEND | 1.296 | 2 | .523 |
| | | REGSPEND(1) | 1.009 | 1 | .315 |
| | | REGSPEND(2) | .664 | 1 | .415 |
| | | REGAGE(1) | .162 | 1 | .687 |
| | | MARRIAGE(1) | .107 | 1 | .744 |
| | | UNDER | .030 | 1 | .862 |
| | Overall Statistics | | 4.869 | 12 | .962 |
| Step 11[j] | Variables | REDTRANS(1) | .427 | 1 | .514 |
| | | REGPREV | 1.872 | 2 | .392 |
| | | REGPREV(1) | 1.602 | 1 | .206 |
| | | REGPREV(2) | 1.532 | 1 | .216 |
| | | ENTRYDUR | .755 | 1 | .385 |
| | | TOTALDUR | .745 | 1 | .388 |
| | | REGDISTA | 1.229 | 2 | .541 |
| | | REGDISTA(1) | 1.171 | 1 | .279 |
| | | REGDISTA(2) | .575 | 1 | .448 |
| | | ETHNIC(1) | .024 | 1 | .876 |
| | | REGSPEND | 1.355 | 2 | .508 |
| | | REGSPEND(1) | 1.216 | 1 | .270 |
| | | REGSPEND(2) | .456 | 1 | .499 |
| | | REGAGE(1) | .138 | 1 | .710 |
| | | MARRIAGE(1) | .031 | 1 | .859 |
| | | UNDER | .117 | 1 | .732 |
| | Overall Statistics | | 5.635 | 13 | .958 |
| Step 12[k] | Variables | REDTRANS(1) | .519 | 1 | .471 |
| | | REGPREV | 1.705 | 2 | .426 |
| | | REGPREV(1) | 1.435 | 1 | .231 |
| | | REGPREV(2) | 1.420 | 1 | .233 |
| | | ENTRYDUR | .659 | 1 | .417 |
| | | TOTALDUR | .692 | 1 | .406 |
| | | REGDISTA | 1.388 | 2 | .500 |
| | | REGDISTA(1) | 1.297 | 1 | .255 |
| | | REGDISTA(2) | .605 | 1 | .437 |
| | | ETHNIC(1) | .023 | 1 | .880 |
| | | GENDER(1) | 1.059 | 1 | .303 |
| | | REGSPEND | 1.696 | 2 | .428 |
| | | REGSPEND(1) | 1.446 | 1 | .229 |
| | | REGSPEND(2) | .676 | 1 | .411 |
| | | REGAGE(1) | .028 | 1 | .867 |
| | | MARRIAGE(1) | .007 | 1 | .933 |
| | | UNDER | .074 | 1 | .786 |
| | Overall Statistics | | 6.646 | 14 | .947 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 13[l] | Variables | REDTRANS(1) | .258 | 1 | .611 |
| | | REGPREV | 1.783 | 2 | .410 |
| | | REGPREV(1) | 1.712 | 1 | .191 |
| | | REGPREV(2) | .996 | 1 | .318 |
| | | ENTRYDUR | .389 | 1 | .533 |
| | | TOTALDUR | .088 | 1 | .767 |
| | | REGDISTA | 4.054 | 2 | .132 |
| | | REGDISTA(1) | 4.048 | 1 | .044 |
| | | REGDISTA(2) | 3.176 | 1 | .075 |
| | | REGORIGI | 3.864 | 3 | .277 |
| | | REGORIGI(1) | 2.335 | 1 | .126 |
| | | REGORIGI(2) | .014 | 1 | .905 |
| | | REGORIGI(3) | 2.177 | 1 | .140 |
| | | ETHNIC(1) | .100 | 1 | .752 |
| | | GENDER(1) | .815 | 1 | .367 |
| | | REGSPEND | .838 | 2 | .658 |
| | | REGSPEND(1) | .456 | 1 | .499 |
| | | REGSPEND(2) | .617 | 1 | .432 |
| | | REGAGE(1) | .000 | 1 | .983 |
| | | MARRIAGE(1) | .013 | 1 | .909 |
| | | UNDER | 1.095 | 1 | .295 |
| | Overall Statistics | | 10.525 | 17 | .880 |
| Step 14[m] | Variables | REDTRANS(1) | .085 | 1 | .770 |
| | | REGPREV | 1.840 | 2 | .399 |
| | | REGPREV(1) | 1.676 | 1 | .195 |
| | | REGPREV(2) | 1.187 | 1 | .276 |
| | | ENTRYDUR | .541 | 1 | .462 |
| | | TOTALDUR | .149 | 1 | .700 |
| | | REGDISTA | 3.223 | 2 | .200 |
| | | REGDISTA(1) | 3.177 | 1 | .075 |
| | | REGDISTA(2) | 2.893 | 1 | .089 |
| | | REGORIGI | 1.783 | 3 | .619 |
| | | REGORIGI(1) | 1.351 | 1 | .245 |
| | | REGORIGI(2) | .014 | 1 | .904 |
| | | REGORIGI(3) | .876 | 1 | .349 |
| | | ETHNIC(1) | .052 | 1 | .819 |
| | | GENDER(1) | .844 | 1 | .358 |
| | | REGSPEND | .878 | 2 | .645 |
| | | REGSPEND(1) | .700 | 1 | .403 |
| | | REGSPEND(2) | .423 | 1 | .515 |
| | | REGEDUCA | 3.319 | 2 | .190 |
| | | REGEDUCA(1) | 1.804 | 1 | .179 |
| | | REGEDUCA(2) | .137 | 1 | .711 |
| | | REGAGE(1) | .000 | 1 | .997 |
| | | MARRIAGE(1) | .010 | 1 | .921 |
| | | UNDER | .597 | 1 | .440 |
| | Overall Statistics | | 13.619 | 19 | .805 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 15[n] | Variables | REDTRANS(1) | .144 | 1 | .705 |
| | | REGPREV | 2.043 | 2 | .360 |
| | | REGPREV(1) | 1.907 | 1 | .167 |
| | | REGPREV(2) | 1.253 | 1 | .263 |
| | | ENTRYDUR | .679 | 1 | .410 |
| | | TOTALDUR | .210 | 1 | .647 |
| | | REGDISTA | 2.752 | 2 | .253 |
| | | REGDISTA(1) | 2.743 | 1 | .098 |
| | | REGDISTA(2) | 2.361 | 1 | .124 |
| | | REGORIGI | 1.263 | 3 | .738 |
| | | REGORIGI(1) | 1.110 | 1 | .292 |
| | | REGORIGI(2) | .041 | 1 | .840 |
| | | REGORIGI(3) | .185 | 1 | .667 |
| | | ETHNIC(1) | .209 | 1 | .647 |
| | | GENDER(1) | .720 | 1 | .396 |
| | | REGSPEND | .796 | 2 | .672 |
| | | REGSPEND(1) | .705 | 1 | .401 |
| | | REGSPEND(2) | .297 | 1 | .586 |
| | | REGEDUCA | 2.723 | 2 | .256 |
| | | REGEDUCA(1) | 1.367 | 1 | .242 |
| | | REGEDUCA(2) | .173 | 1 | .678 |
| | | REGAGE(1) | .000 | 1 | .999 |
| | | MARRIAGE(1) | .020 | 1 | .889 |
| | | UNDER | .626 | 1 | .429 |
| | | HARMO | 1.000 | 1 | .317 |
| | Overall Statistics | | 13.928 | 20 | .834 |

a. Variable(s) removed on step 2: REGAGE.

b. Variable(s) removed on step 3: UNDER.

c. Variable(s) removed on step 4: MARRIAGE.

d. Variable(s) removed on step 5: ENTRYDUR.

e. Variable(s) removed on step 6: REGDISTA.

f. Variable(s) removed on step 7: ETHNIC.

g. Variable(s) removed on step 8: REGSPEND.

h. Variable(s) removed on step 9: REDTRANS.

i. Variable(s) removed on step 10: REGPREV.

j. Variable(s) removed on step 11: TOTALDUR.

k. Variable(s) removed on step 12: GENDER.

l. Variable(s) removed on step 13: REGORIGI.

m. Variable(s) removed on step 14: REGEDUCA.

n. Variable(s) removed on step 15: HARMO.

```
            Step number: 1

            Observed Groups and Predicted Probabilities

      16 ô                                                            ô
         ó                                                        B   ó
         ó                                                        BB  ó
         ó                                                        BB Bó
      12 ô                                                        BB Bô
         óO                                                       BB Bó
         óO                                                       BB Bó
         óO                                                   B BBBBBBó
       8 ôO                                                   B BBBBBBô
         óOO                                                  BBBBBBBBó
         óOO                                                 BBBBBBBBBó
         óOOO                           B                B   BBBBBBBBBó
       4 ôOOO      B       B       B    B  B             B   BBBBBBBBBô
         óOOO  O   OO   B  OO      B B BB  O B B    BBB  B B BBBBBBBBBó
         óOOOO OOOOOOO  OO OO  B   OBB BB BO B BB   BBB BBBB BBBBBBBBBó
         óOOOO OOOOOOOOOOOOOOO O OBOOBOOB OOBO BBB  OOO BOBOOOOBBOOOOOó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
 Prob:    0            .25            .5             .75             1
 Group:   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
          Step number: 2

          Observed Groups and Predicted Probabilities

      16 ô                                                            ô
         ó                                                        B   ó
         ó                                                        BB  ó
F        ó                                                        BB Bó
R     12 ô                                                        BB Bô
E        óO                                                       BB Bó
Q        óO                                                       BB Bó
U        óO                                                   B BBBBBBó
E      8 ôO                                                   B BBBBBBô
N        óOO                                                  BBBBBBBBó
C        óOO                                                 BBBBBBBBBó
Y        óOOO                           B                B   BBBBBBBBBó
       4 ôOOO      B       B       B B  B  B             B   BBBBBBBBBô
         óOOO  O   OO   B  OO      B B BB  O B B    BBB  B B BBBBBBBBBó
         óOOOO OOOOOOO  OO OO  B   OBB BB BO B BB   BBB BBBB BBBBBBBBBó
         óOOOO OOOOOOOOOOOOOOO O OBOOO OB OOBO BBB  OOO BOBOOOOBBOOOOOó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
          Step number: 3

          Observed Groups and Predicted Probabilities

      16 ô                                                            ô
         ó                                                         B  ó
         ó                                                         B  ó
F        ó                                                         B Bó
R     12 ô                                                       BBB Bô
E        óO                                                      BBB Bó
Q        óO                                                      BBB Bó
U        óO                                                      BBBBBó
E      8 ôO                                                  B  BBBBBBô
N        óOO                                                 BBBBBBBBBó
C        óOO                                                 BBBBBBBBBó
Y        óOOO       B      B       B   B   B          B  B   BBBBBBBBBó
       4 ôOOO       O   B  O       B   B   B          B  B B BBBBBBBBBô
         óOOO  O   OO   O  O       B B BB  O          B  B B BBBBBBBBBó
         óOOOO OOOOOO   O OOO      O B BB BO B BB   B O  BBB BBBBBBBBBó
         óOOOO OOOOOOOO OOOOOO BOOBOOBOOB OOBOBBBB BOBO BOBOOOOBBOOOOOó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
          Step number: 4

          Observed Groups and Predicted Probabilities

      16 ô                                                         B  ô
         ó                                                         B  ó
         ó                                                         B  ó
F        ó                                                        BB Bó
R     12 ô                                                        BB Bô
E        óO                                                       BB Bó
Q        óO                                                      BBB Bó
U        óO                                                    BBBBBBBó
E      8 ôO                                                    BBBBBBBô
N        óOO                                                 B BBBBBBBó
C        óOOO                                                BBBBBBBBBó
Y        óOOO      O                 B               B       BBBBBBBBBó
       4 ôOOO      O                 B  B      B     B   B   BBBBBBBBBô
         óOOO  O   O B  B          B B  B BB B B     B   B B BBBBBBBBBó
         óOOO  OOO OOO  O OBOOO O BOBO BB OO B B    BBB BB B OBBBBBOBBó
         óOOOO OOOOOOOOOOOOOOOOBO BOOOBBB OOBBOB B  OOOBOBBOBOOBBOBOOOó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
```

```
              B - Beijing
         Each Symbol Represents 1 Case.



            Step number: 5

            Observed Groups and Predicted Probabilities

      16 ô                                                                 B  ô
         ó                                                                 B  ó
         ó                                                                 B  ó
F        ó                                                                BB Bó
R     12 ô                                                                BB Bô
E        óO                                                               BB Bó
Q        óO                                                               BB Bó
U        óO                                                            BBBBBBBó
E      8 ôOO                                                          BBBBBBBBô
N        óOO                                                          BBBBBBBBó
C        óOO                                                         BBBBBBBBBó
Y        óOO                                                         BBBBBBBBBó
       4 ôOOO       O                 B      B                     B BBBBBBBBBô
         óOOO  O    OO    BO B     B  BBB    O  B B     BB     B B BBBBBBBBBó
         óOOOO OOO  OOB  OOO OO    B  OBOBBB OB B BB    BBB BB B OBBBBBOBBó
         óOOOO OOOOOOO  OOOOOOOOOOOBOOOBBBBOOBBOBB  OBOOBOBBOBOOBOBBOOOó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0             .25              .5              .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.



            Step number: 6

            Observed Groups and Predicted Probabilities

      16 ô                                                                    ô
         ó                                                                    ó
         ó                                                                 B  ó
F        ó                                                                 B  ó
R     12 ô                                                               BBB Bô
E        ó                                                               BBBBBó
Q        ó O                                                             BBBBBó
U        óOO                                                          BB BBBBBó
E      8 ôOO                                                          BBBBBBBBô
N        óOO                                                          BBBBBBBBó
C        óOO                                                          BBBBBBBBó
Y        óOO                                         B                BBBBBBBBó
       4 ôOOO     O                                  B               BBBBBBBBBô
         óOOO     O    O    OO B      B    BB B      B     BB    B B BBBBBBBBBBó
         óOOOO OO OO   OOBOBOOOO   BB OBBBBOBB BB     BBBBB BBB BBBBBBBBBBó
         óOOOOOOOOOOOBOOOOOOOOO  BBOOOOOBOOBB  BO  O  OOBBBOBOO  BOBOOOOOOOó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0             .25              .5              .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.



            Step number: 7

            Observed Groups and Predicted Probabilities

      16 ô                                                                    ô
         ó                                                                    ó
         ó                                                                BB  ó
F        ó                                                                BB  ó
R     12 ô                                                                BB Bô
E        ó                                                             B  BB Bó
Q        ó O                                                           BB BBBBó
U        óOO                                                           BBBBBBBó
E      8 ôOO                                                           BBBBBBBô
N        óOO                                                           BBBBBBBó
C        óOO                                                          BBBBBBBBó
Y        óOO                                                      B  BBBBBBBBBó
       4 ôOOO               BO                          B         B  BBBBBBBBBô
         óOOOO    O     O   OOO     B O B BBB     B     B      B B  BBBBBBBBBó
         óOOOO OO OOO BOB  OOOOB    B O OBBBOB   BBB   BBB B BBB  BBBBOBBBBBó
         óOOOO OOOOOOOOOO  OOOOO    BBOBOOBOOBBBBOBO  OOBBBBOOO  BOBOOBOOOOó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0             .25              .5              .75             1
```

```
Group:  0000000000000000000000000000000BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

        Predicted Probability is of Membership for Beijing
        The Cut Value is .50
        Symbols: O - Others
                 B - Beijing
        Each Symbol Represents 1 Case.
```

```
           Step number: 8

           Observed Groups and Predicted Probabilities

     16 ô                                                            ô
        ó                                                         B  ó
        ó                                                       B B  ó
F       óO                                                      B B  ó
R    12 ôO                                                      B B  ô
E       óO                                                    B BBB Bó
Q       óO                                                    B BBB Bó
U       óO                                                    B BBB Bó
E     8 ôO                                                    BBBBBBBô
N       óO                                                  B BBBBBBBó
C       óOO                                                 B BBBBBBBó
Y       óOOO               B      B  B                      BBBBBBBBBó
      4 ôOOO      O      B     B      B  B               B BBBBBBBBBBô
        óOOO    O O     OOBO   B      B  B        B      BBBBBBBBBBBBBó
        óOOOO   O O OB  OOOO  OOOBB  BOB OB BOB  BBB   B BBBBBBBBBBBBBó
        óOOOO OOOO OO OOOOOO OOOOOOBBOBOOB BOBO BOBBBBO BBOOBOOOOOOOOó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
 Prob:    0            .25            .5            .75            1
 Group:   0000000000000000000000000000000BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
           Step number: 9

           Observed Groups and Predicted Probabilities

     20 ô                                                            ô
        ó                                                            ó
        ó                                                         B  ó
F       ó                                                       B B  ó
R    15 ô                                                       B B  ô
E       ó                                                       B B  ó
Q       ó                                                       B B  ó
U       ó                                                     BBB B Bó
E    10 ôO                                                    BBB B Bô
N       óOO                                                   BBB B Bó
C       óOO                                                   BBBBBBBó
Y       óOO                                                   BBBBBBBó
      5 ôOO            B                                  BB  BBBBBBBô
        óOO            O    BB    BBB               B     BBBBBBBBBBBó
        óOOOO  OOO   OO O O  O OOB  OBO BB  BOB   B   BB BBBBBBBBOBBBó
        óOOOOOOOOOOOOOOOOO OOOOOOOBOOO BOOOBOB BBOBBB OBBBOOBOOBOOOBOó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
 Prob:    0            .25            .5            .75            1
 Group:   0000000000000000000000000000000BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1.25 Cases.
```

```
           Step number: 10

           Observed Groups and Predicted Probabilities

     16 ô                                                            ô
        ó                                                            ó
        ó                                                            ó
F       ó                                                            ó
R    12 ô                                                        BB  ô
E       ó O                                                     BBBB Bó
Q       ó O                                                    BBBBBBBó
U       ó O                                                   BBBBBBBBó
E     8 ôOO                                                   BBBBBBBBô
N       óOO              B    B                               BBBBBBBBó
C       óOO  O           O    B                               BBBBBBBBó
Y       óOO  O           O    B                        B      BBBBBBBBó
      4 ôOO  O           O B  O                     BB B BBBBBBBBBô
```

```
          óOO  O      OOB     O O  O B B  BB                BB BBBBBBBBBBBó
          óOO  O  O   OOOBB   OOOB O OOBB BOBBBB B          BBBBBOBBBOBBBBó
          óOOOOOO OOOOOOOO  OOOOO O OOOOBBOBOOBBBBB BB OBBBOOBOBOOOBOOOó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0             .25            .5             .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
             Step number: 11

             Observed Groups and Predicted Probabilities

      16 ô                                                         ô
         ó                                                     B   ó
         ó                                                     B   ó
F        ó                                                   B B   ó
R     12 ô                                                   B B   ô
E        ó                                                  BB B Bó
Q        ó O                                                BB B Bó
U        ó O                                               BBB B Bó
E      8 ôOO                                              BBBBBBBBô
N        óOO                                              BBBBBBBBó
C        óOO                                             BBBBBBBBBó
Y        óOO  O       B                           B      BBBBBBBBBó
       4 ôOO  O       B    O  O  B   B          B   B   BBBBBBBBBBô
         óOO  O       O   BO BO OOB  B    B B   BB BB   BBBBBBBBBBó
         óOO  OO OO  OOOB OO BO OOOB BBBOB B B  B   BBBBBBBBBBOBBBó
         óOOOOOOOOOOOOOOO OO OO OOOBOOOBOOOOBBB BBBB BOBBOOOOBOOOBOOOó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0             .25            .5             .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
             Step number: 12

             Observed Groups and Predicted Probabilities

      16 ô                                                         ô
         ó                                                    B    ó
         ó                                                    B    ó
F        ó                                                    B    ó
R     12 ô                                                   BB    ô
E        ó                                                 B BB    ó
Q        ó                                                 BBBB   Bó
U        óO                                                BBBBBBBó
E      8 ôO                                              B BBBBBBBô
N        óO                      B                       B BBBBBBBó
C        óOO                     O                       B BBBBBBBó
Y        óOO                     O                  B      BBB BBBBBBBó
       4 ôOOO O                  O  BB     B      B B    BBBBBBBBBBBBô
         óOOOOO      OB    B     O  BOB    B B   B     B  B B   BBBBBBBBBBBBó
         óOOOOO O O  OO   OBBOOOB OOO BBOOO  B   B   B  B B   BBOOBOBBBBBBó
         óOOOOOOOOO  OOO  OOOOOOOOOOOBOBOOOB B OB BB  BOBBBBBOOBOOOBOOOó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0             .25            .5             .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
             Step number: 13

             Observed Groups and Predicted Probabilities

      20 ô                                                         ô
         ó                                                         ó
         ó                                                  B      ó
F        ó                                                  B      ó
R     15 ô                                                  B      ô
E        ó                                                  B      ó
Q        ó                                                 BB   B  ó
U        ó                                                 BB   B  ó
```

```
E     10 ô                                                    BBBBBB  ô
N        ó                                                    BBBBBBB ó
C        óO                                                   BBBBBBB ó
Y        óO                                                   BBBBBBBBó
       5 ôOO                  B                              BBBBBBBBBô
         óOOO O   OB        O B   B  B                    B  BBBBBBBBBó
         óOOOOOOOOOO     B OOBOBBBOOOOOBO     BBBBBB  BBB O  BOBBBBOBBó
         óOOOOOOOOOOB O OO OOOOOOOOOOOOOOOBBO BOBBOOB BBBBOB OOOBBOOOBó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1.25 Cases.
```

```
             Step number: 14

             Observed Groups and Predicted Probabilities

      16 ô                                                        B   ô
         ó                                                       BB   ó
         ó                                                       BB   ó
F        ó                                                     B BB   ó
R     12 ô                                                     BBBB   ô
E        ó                                                     BBBB   ó
Q        ó                                                     BBBB B ó
U        ó O                                                   BBBB B ó
E      8 ô O                                                   BBBB B ô
N        ó O                                                 BBBBBB B ó
C        ó O                                                 BBBBBBBB ó
Y        óOO    O               B                         B  BBBBBBBB ó
       4 ôOO   OO        B     BBB     BB              B  B BBBBBBBBB ô
         óOO  OOO        O    BBBB O BOBO              BB B BBBBBBBBBBó
         óOOOOOOO   BOO  OBBB OOOOOOBOOOOBOB     BB B BBB BBBBBOBBOBBBó
         óOOOOOOOO  OOOO OBOOBOOOOOOOOOOOOOBB BB BB O BOB BBOOOOOOOBOBó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 1 Case.
```

```
             Step number: 15

             Observed Groups and Predicted Probabilities

      32 ô                                                            ô
         ó                                                      B     ó
         ó                                                      B     ó
F        ó                                                      B     ó
R     24 ô                                                      B     ô
E        ó                                                      B     ó
Q        ó                                                      B B   ó
U        ó                       B                              B B   ó
E     16 ô                       B                              B B   ô
N        ó                       B                              B B   ó
C        ó                       B                           B  B B   ó
Y        ó  O                    O                      B    B  B B   ó
       8 ô  O                    O       B              B    B  B B  Bô
         óO O   O                O      BB              B   BB BBBB BBó
         óO O  OO    O B BO B    O O   BOO        B B   B   BBBBOBB BBó
         óOOOOOOO O  O O OO OOOO O O  OOOO  B  BBBB O BBO   OBBOOBOBOBó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

          Predicted Probability is of Membership for Beijing
          The Cut Value is .50
          Symbols: O - Others
                   B - Beijing
          Each Symbol Represents 2 Cases.
```

Casewise List[b]

| Case | Selected Status[a] | Observed | Predicted | Predicted Group | Temporary Variable | |
|---|---|---|---|---|---|---|
| | | Beijing vs. Others | | | Resid | ZResid |
| 4 | S | O** | .943 | B | -.943 | -4.076 |
| 16 | S | O** | .912 | B | -.912 | -3.211 |
| 119 | S | O** | .904 | B | -.904 | -3.067 |
| 140 | S | O** | .895 | B | -.895 | -2.919 |
| 144 | S | O** | .912 | B | -.912 | -3.211 |
| 156 | S | O** | .980 | B | -.980 | -6.957 |
| 178 | S | O** | .944 | B | -.944 | -4.116 |
| 193 | S | O** | .910 | B | -.910 | -3.180 |

a. S = Selected, U = Unselected cases, and ** = Misclassified cases.

b. Cases with studentized residuals greater than 2.000 are listed.

# APPENDIX 10

## Binary logistic regression model, Logit II (1) and (2): Shanghai versus Others

# a. Logit II (1): Shanghai vs. Others

Case Processing Summary

| Unweighted Cases[a] | | N | Percent |
|---|---|---|---|
| Selected Cases | Included in Analysis | 211 | 99.1 |
| | Missing Cases | 2 | .9 |
| | Total | 213 | 100.0 |
| Unselected Cases | | 0 | .0 |
| Total | | 213 | 100.0 |

a. If weight is in effect, see classification table for the total number of cases.

## Dependent Variable Encoding

| Original Value | Internal Value |
|---|---|
| Others | 0 |
| Shanghai | 1 |

Categorical Variables Codings

| | | Frequency | Parameter coding (1) | (2) | (3) |
|---|---|---|---|---|---|
| Place of origins, regrouped | Americas | 56 | 1.000 | .000 | .000 |
| | UK | 47 | .000 | 1.000 | .000 |
| | Japan | 60 | .000 | .000 | 1.000 |
| | GCR | 48 | .000 | .000 | .000 |
| Entry point | Beijing | 105 | 1.000 | .000 | .000 |
| | Shanghai | 52 | .000 | 1.000 | .000 |
| | Guangzhou | 24 | .000 | .000 | 1.000 |
| | Others | 30 | .000 | .000 | .000 |
| 2nd place visited, region | No 2nd place | 62 | 1.000 | .000 | .000 |
| | Gateways | 41 | .000 | 1.000 | .000 |
| | Same region | 89 | .000 | .000 | 1.000 |
| | Other region | 19 | .000 | .000 | .000 |
| Income level, regrouped | Below US$30000 | 84 | 1.000 | .000 | |
| | US$30000-40000 | 26 | .000 | 1.000 | |
| | Above US$40000 | 101 | .000 | .000 | |
| Final level of education, regrouped | high school and below | 47 | 1.000 | .000 | |
| | Undergraduate/College | 90 | .000 | 1.000 | |
| | Postgraduate and above | 74 | .000 | .000 | |
| Trip expense, regrouped | below US$800 | 60 | 1.000 | .000 | |
| | US$800-1000 | 29 | .000 | 1.000 | |
| | above US$1000 | 122 | .000 | .000 | |
| Attractiveness of main destination, regrouped | very much | 158 | 1.000 | .000 | |
| | neutral | 39 | .000 | 1.000 | |
| | not much | 14 | .000 | .000 | |
| Geographic distance, regrouped | far | 88 | 1.000 | .000 | |
| | medium | 111 | .000 | 1.000 | |
| | not far | 12 | .000 | .000 | |
| Type of travel group, regrouped | Package | 129 | 1.000 | | |
| | Family/Friends/alone | 82 | .000 | | |
| Marital status | Single | 67 | 1.000 | | |
| | Married | 144 | .000 | | |
| Age categories, regrouped | Below 44 | 88 | 1.000 | | |
| | above 45 | 123 | .000 | | |
| Gender | Male | 121 | 1.000 | | |
| | Female | 90 | .000 | | |
| Ethnic Chinese | Yes | 55 | 1.000 | | |
| | No | 156 | .000 | | |
| Transport of arrival, regrouped | Air | 190 | 1.000 | | |
| | Rail/Sea/Motor/Foot | 21 | .000 | | |

# Block 0: Beginning Block

Iteration History[a,b,c]

| Iteration | | -2 Log likelihood | Coefficients Constant |
|---|---|---|---|
| Step 0 | 1 | 152.141 | -1.564 |
| | 2 | 145.516 | -2.012 |
| | 3 | 145.349 | -2.098 |
| | 4 | 145.349 | -2.101 |

a. Constant is included in the model.

b. Initial -2 Log Likelihood: 145.349

c. Estimation terminated at iteration number 4 because log-likelihood decreased by less than .010 percent.

Classification Table[a,b]

| Observed | | | Predicted: Shanghai vs. Others - Others | Predicted: Shanghai vs. Others - Shanghai | Predicted: Percentage Correct |
|---|---|---|---|---|---|
| Step 0 | Shanghai vs. Others | Others | 188 | 0 | 100.0 |
| | | Shanghai | 23 | 0 | .0 |
| | Overall Percentage | | | | 89.1 |

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 0 | Constant | -2.101 | .221 | 90.455 | 1 | .000 | .122 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 0 | Variables | REDTRANS(1) | .045 | 1 | .831 |
| | | REGGROUP(1) | 1.925 | 1 | .165 |
| | | ENTRY | 29.276 | 3 | .000 |
| | | ENTRY(1) | 13.923 | 1 | .000 |
| | | ENTRY(2) | 28.048 | 1 | .000 |
| | | ENTRY(3) | 1.264 | 1 | .261 |
| | | ENTRYDUR | 2.186 | 1 | .139 |
| | | PLACE2RE | 2.382 | 3 | .497 |
| | | PLACE2RE(1) | .135 | 1 | .713 |
| | | PLACE2RE(2) | 1.996 | 1 | .158 |
| | | PLACE2RE(3) | .098 | 1 | .754 |
| | | TOTALDUR | .742 | 1 | .389 |
| | | REGATTRA | 2.837 | 2 | .242 |
| | | REGATTRA(1) | 2.695 | 1 | .101 |
| | | REGATTRA(2) | 2.447 | 1 | .118 |
| | | REGDISTA | 4.777 | 2 | .092 |
| | | REGDISTA(1) | 4.233 | 1 | .040 |
| | | REGDISTA(2) | 4.700 | 1 | .030 |
| | | REGORIGI | 7.782 | 3 | .051 |
| | | REGORIGI(1) | 4.216 | 1 | .040 |
| | | REGORIGI(2) | 1.271 | 1 | .260 |
| | | REGORIGI(3) | 2.870 | 1 | .090 |
| | | ETHNIC(1) | 6.342 | 1 | .012 |
| | | GENDER(1) | .007 | 1 | .933 |
| | | REGSPEND | 3.411 | 2 | .182 |
| | | REGSPEND(1) | .569 | 1 | .451 |
| | | REGSPEND(2) | 3.317 | 1 | .069 |
| | | REGEDUCA | .323 | 2 | .851 |
| | | REGEDUCA(1) | .004 | 1 | .948 |
| | | REGEDUCA(2) | .282 | 1 | .595 |
| | | REGINCOM | 5.695 | 2 | .058 |
| | | REGINCOM(1) | .145 | 1 | .703 |
| | | REGINCOM(2) | 4.527 | 1 | .033 |
| | | REGAGE(1) | .033 | 1 | .855 |
| | | MARRIAGE(1) | .021 | 1 | .886 |
| | | UNDER | 9.720 | 1 | .002 |
| | | HARMO | .012 | 1 | .912 |
| | | PREVIOUS | 1.946 | 1 | .163 |
| | Overall Statistics | | 67.600 | 30 | .000 |

# Block 1: Method = Backward Stepwise (Likelihood Ratio)

Model Summary

| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|---|
| 1 | 77.226 | .276 | .554 |
| 2 | 77.242 | .276 | .554 |
| 3 | 77.297 | .276 | .554 |
| 4 | 77.337 | .276 | .553 |
| 5 | 77.383 | .275 | .553 |
| 6 | 77.914 | .274 | .549 |
| 7 | 77.964 | .273 | .549 |
| 8 | 79.247 | .269 | .540 |
| 9 | 79.593 | .268 | .538 |
| 10 | 80.756 | .264 | .530 |
| 11 | 81.397 | .261 | .525 |
| 12 | 83.517 | .254 | .510 |
| 13 | 86.117 | .245 | .492 |
| 14 | 89.111 | .234 | .470 |
| 15 | 93.025 | .220 | .441 |
| 16 | 95.477 | .211 | .423 |

**Hosmer and Lemeshow Test**

| Step | Chi-square | df | Sig. |
|---|---|---|---|
| 1 | 5.047 | 8 | .753 |
| 2 | 4.801 | 8 | .779 |
| 3 | 6.674 | 8 | .572 |
| 4 | 6.440 | 8 | .598 |
| 5 | 6.552 | 8 | .586 |
| 6 | 6.529 | 8 | .588 |
| 7 | 8.322 | 8 | .403 |
| 8 | 6.258 | 8 | .618 |
| 9 | 5.377 | 8 | .717 |
| 10 | 6.544 | 8 | .587 |
| 11 | 21.333 | 8 | .006 |
| 12 | 19.772 | 8 | .011 |
| 13 | 16.222 | 8 | .039 |
| 14 | 25.429 | 8 | .001 |
| 15 | 11.488 | 8 | .176 |
| 16 | 17.770 | 8 | .023 |

Contingency Table for Hosmer and Lemeshow Test

| | | Shanghai vs. Others = Others | | Shanghai vs. Others = Shanghai | | Total |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | |
| Step 1 | 1 | 21 | 20.996 | 0 | .004 | 21 |
| | 2 | 21 | 20.983 | 0 | .017 | 21 |
| | 3 | 21 | 20.950 | 0 | .050 | 21 |
| | 4 | 21 | 20.894 | 0 | .106 | 21 |
| | 5 | 20 | 20.757 | 1 | .243 | 21 |
| | 6 | 21 | 20.489 | 0 | .511 | 21 |
| | 7 | 19 | 19.931 | 2 | 1.069 | 21 |
| | 8 | 19 | 19.157 | 2 | 1.843 | 21 |
| | 9 | 18 | 16.081 | 3 | 4.919 | 21 |
| | 10 | 7 | 7.763 | 15 | 14.237 | 22 |

Contingency Table for Hosmer and Lemeshow Test

| | | Shanghai vs. Others = Others | | Shanghai vs. Others = Shanghai | | |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | Total |
| Step 2 | 1 | 21 | 20.995 | 0 | .005 | 21 |
| | 2 | 21 | 20.982 | 0 | .018 | 21 |
| | 3 | 21 | 20.949 | 0 | .051 | 21 |
| | 4 | 21 | 20.893 | 0 | .107 | 21 |
| | 5 | 20 | 20.750 | 1 | .250 | 21 |
| | 6 | 21 | 20.479 | 0 | .521 | 21 |
| | 7 | 20 | 19.926 | 1 | 1.074 | 21 |
| | 8 | 18 | 19.135 | 3 | 1.865 | 21 |
| | 9 | 18 | 16.135 | 3 | 4.865 | 21 |
| | 10 | 7 | 7.754 | 15 | 14.246 | 22 |
| Step 3 | 1 | 21 | 20.995 | 0 | .005 | 21 |
| | 2 | 21 | 20.983 | 0 | .017 | 21 |
| | 3 | 21 | 20.950 | 0 | .050 | 21 |
| | 4 | 21 | 20.895 | 0 | .105 | 21 |
| | 5 | 20 | 20.748 | 1 | .252 | 21 |
| | 6 | 21 | 20.486 | 0 | .514 | 21 |
| | 7 | 19 | 19.944 | 2 | 1.056 | 21 |
| | 8 | 19 | 19.111 | 2 | 1.889 | 21 |
| | 9 | 19 | 16.122 | 2 | 4.878 | 21 |
| | 10 | 6 | 7.765 | 16 | 14.235 | 22 |
| Step 4 | 1 | 21 | 20.995 | 0 | .005 | 21 |
| | 2 | 21 | 20.981 | 0 | .019 | 21 |
| | 3 | 21 | 20.944 | 0 | .056 | 21 |
| | 4 | 21 | 20.882 | 0 | .118 | 21 |
| | 5 | 20 | 20.744 | 1 | .256 | 21 |
| | 6 | 21 | 20.476 | 0 | .524 | 21 |
| | 7 | 20 | 19.946 | 1 | 1.054 | 21 |
| | 8 | 18 | 19.125 | 3 | 1.875 | 21 |
| | 9 | 19 | 16.163 | 2 | 4.837 | 21 |
| | 10 | 6 | 7.743 | 16 | 14.257 | 22 |
| Step 5 | 1 | 21 | 20.995 | 0 | .005 | 21 |
| | 2 | 21 | 20.981 | 0 | .019 | 21 |
| | 3 | 21 | 20.947 | 0 | .053 | 21 |
| | 4 | 21 | 20.886 | 0 | .114 | 21 |
| | 5 | 20 | 20.742 | 1 | .258 | 21 |
| | 6 | 21 | 20.468 | 0 | .532 | 21 |
| | 7 | 19 | 19.953 | 2 | 1.047 | 21 |
| | 8 | 19 | 19.115 | 2 | 1.885 | 21 |
| | 9 | 19 | 16.183 | 2 | 4.817 | 21 |
| | 10 | 6 | 7.730 | 16 | 14.270 | 22 |
| Step 6 | 1 | 21 | 20.995 | 0 | .005 | 21 |
| | 2 | 21 | 20.981 | 0 | .019 | 21 |
| | 3 | 21 | 20.948 | 0 | .052 | 21 |
| | 4 | 21 | 20.886 | 0 | .114 | 21 |
| | 5 | 20 | 20.748 | 1 | .252 | 21 |
| | 6 | 21 | 20.461 | 0 | .539 | 21 |
| | 7 | 20 | 19.956 | 1 | 1.044 | 21 |
| | 8 | 18 | 19.132 | 3 | 1.868 | 21 |
| | 9 | 19 | 16.147 | 2 | 4.853 | 21 |
| | 10 | 6 | 7.745 | 16 | 14.255 | 22 |
| Step 7 | 1 | 21 | 20.995 | 0 | .005 | 21 |
| | 2 | 21 | 20.981 | 0 | .019 | 21 |
| | 3 | 21 | 20.950 | 0 | .050 | 21 |
| | 4 | 21 | 20.874 | 0 | .126 | 21 |
| | 5 | 20 | 20.726 | 1 | .274 | 21 |
| | 6 | 21 | 20.445 | 0 | .555 | 21 |
| | 7 | 18 | 19.964 | 3 | 1.036 | 21 |
| | 8 | 20 | 19.151 | 1 | 1.849 | 21 |
| | 9 | 18 | 15.968 | 3 | 5.032 | 21 |
| | 10 | 7 | 7.946 | 15 | 14.054 | 22 |

Contingency Table for Hosmer and Lemeshow Test

| | | Shanghai vs. Others = Others | | Shanghai vs. Others = Shanghai | | Total |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | |
| Step 8 | 1 | 21 | 20.994 | 0 | .006 | 21 |
| | 2 | 21 | 20.981 | 0 | .019 | 21 |
| | 3 | 21 | 20.946 | 0 | .054 | 21 |
| | 4 | 21 | 20.864 | 0 | .136 | 21 |
| | 5 | 20 | 20.726 | 1 | .274 | 21 |
| | 6 | 21 | 21.369 | 1 | .631 | 22 |
| | 7 | 20 | 19.987 | 1 | 1.013 | 21 |
| | 8 | 19 | 19.021 | 2 | 1.979 | 21 |
| | 9 | 19 | 15.740 | 2 | 5.260 | 21 |
| | 10 | 5 | 7.369 | 16 | 13.631 | 21 |
| Step 9 | 1 | 21 | 20.994 | 0 | .006 | 21 |
| | 2 | 21 | 20.981 | 0 | .019 | 21 |
| | 3 | 21 | 20.948 | 0 | .052 | 21 |
| | 4 | 21 | 20.879 | 0 | .121 | 21 |
| | 5 | 20 | 20.729 | 1 | .271 | 21 |
| | 6 | 20 | 20.367 | 1 | .633 | 21 |
| | 7 | 20 | 19.900 | 1 | 1.100 | 21 |
| | 8 | 19 | 19.022 | 2 | 1.978 | 21 |
| | 9 | 19 | 16.160 | 2 | 4.840 | 21 |
| | 10 | 6 | 8.019 | 16 | 13.981 | 22 |
| Step 10 | 1 | 21 | 20.988 | 0 | .012 | 21 |
| | 2 | 21 | 20.971 | 0 | .029 | 21 |
| | 3 | 21 | 20.922 | 0 | .078 | 21 |
| | 4 | 20 | 20.821 | 1 | .179 | 21 |
| | 5 | 20 | 20.685 | 1 | .315 | 21 |
| | 6 | 22 | 21.302 | 0 | .698 | 22 |
| | 7 | 20 | 19.796 | 1 | 1.204 | 21 |
| | 8 | 19 | 18.840 | 2 | 2.160 | 21 |
| | 9 | 17 | 16.004 | 4 | 4.996 | 21 |
| | 10 | 7 | 7.671 | 14 | 13.329 | 21 |
| Step 11 | 1 | 21 | 20.987 | 0 | .013 | 21 |
| | 2 | 21 | 20.971 | 0 | .029 | 21 |
| | 3 | 21 | 20.923 | 0 | .077 | 21 |
| | 4 | 19 | 20.805 | 2 | .195 | 21 |
| | 5 | 21 | 20.598 | 0 | .402 | 21 |
| | 6 | 21 | 20.287 | 0 | .713 | 21 |
| | 7 | 20 | 19.914 | 1 | 1.086 | 21 |
| | 8 | 19 | 18.818 | 2 | 2.182 | 21 |
| | 9 | 19 | 16.277 | 2 | 4.723 | 21 |
| | 10 | 6 | 8.419 | 16 | 13.581 | 22 |
| Step 12 | 1 | 21 | 20.986 | 0 | .014 | 21 |
| | 2 | 21 | 20.969 | 0 | .031 | 21 |
| | 3 | 21 | 20.918 | 0 | .082 | 21 |
| | 4 | 19 | 20.798 | 2 | .202 | 21 |
| | 5 | 22 | 21.568 | 0 | .432 | 22 |
| | 6 | 22 | 21.239 | 0 | .761 | 22 |
| | 7 | 20 | 19.828 | 1 | 1.172 | 21 |
| | 8 | 19 | 18.682 | 2 | 2.318 | 21 |
| | 9 | 18 | 15.858 | 3 | 5.142 | 21 |
| | 10 | 5 | 7.154 | 15 | 12.846 | 20 |
| Step 13 | 1 | 21 | 20.974 | 0 | .026 | 21 |
| | 2 | 21 | 20.948 | 0 | .052 | 21 |
| | 3 | 21 | 20.885 | 0 | .115 | 21 |
| | 4 | 19 | 20.748 | 2 | .252 | 21 |
| | 5 | 21 | 20.509 | 0 | .491 | 21 |
| | 6 | 22 | 21.261 | 0 | .739 | 22 |
| | 7 | 19 | 19.674 | 2 | 1.326 | 21 |
| | 8 | 20 | 18.894 | 1 | 2.106 | 21 |
| | 9 | 18 | 16.293 | 3 | 4.707 | 21 |
| | 10 | 6 | 7.815 | 15 | 13.185 | 21 |

Contingency Table for Hosmer and Lemeshow Test

| | | Shanghai vs. Others = Others | | Shanghai vs. Others = Shanghai | | |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | Total |
| Step 14 | 1 | 20 | 20.957 | 1 | .043 | 21 |
| | 2 | 22 | 21.905 | 0 | .095 | 22 |
| | 3 | 21 | 20.856 | 0 | .144 | 21 |
| | 4 | 20 | 20.720 | 1 | .280 | 21 |
| | 5 | 21 | 20.411 | 0 | .589 | 21 |
| | 6 | 22 | 21.080 | 0 | .920 | 22 |
| | 7 | 19 | 18.703 | 1 | 1.297 | 20 |
| | 8 | 19 | 18.729 | 2 | 2.271 | 21 |
| | 9 | 15 | 16.304 | 6 | 4.696 | 21 |
| | 10 | 9 | 8.334 | 12 | 12.666 | 21 |
| Step 15 | 1 | 21 | 20.945 | 0 | .055 | 21 |
| | 2 | 20 | 20.881 | 1 | .119 | 21 |
| | 3 | 21 | 20.816 | 0 | .184 | 21 |
| | 4 | 22 | 22.652 | 1 | .348 | 23 |
| | 5 | 20 | 20.383 | 1 | .617 | 21 |
| | 6 | 22 | 20.871 | 0 | 1.129 | 22 |
| | 7 | 22 | 20.521 | 0 | 1.479 | 22 |
| | 8 | 19 | 18.411 | 2 | 2.589 | 21 |
| | 9 | 15 | 15.885 | 6 | 5.115 | 21 |
| | 10 | 6 | 6.636 | 12 | 11.364 | 18 |
| Step 16 | 1 | 21 | 20.943 | 0 | .057 | 21 |
| | 2 | 20 | 20.867 | 1 | .133 | 21 |
| | 3 | 21 | 21.767 | 1 | .233 | 22 |
| | 4 | 22 | 22.611 | 1 | .389 | 23 |
| | 5 | 20 | 20.378 | 1 | .622 | 21 |
| | 6 | 24 | 22.553 | 0 | 1.447 | 24 |
| | 7 | 21 | 19.182 | 0 | 1.818 | 21 |
| | 8 | 21 | 18.959 | 1 | 3.041 | 22 |
| | 9 | 16 | 15.499 | 5 | 5.501 | 21 |
| | 10 | 2 | 5.242 | 13 | 9.758 | 15 |

Classification Table[a]

| | Observed | | Predicted: Shanghai vs. Others: Others | Shanghai | Percentage Correct |
|---|---|---|---|---|---|
| Step 1 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 11 | 12 | 52.2 |
| | Overall Percentage | | | | 93.8 |
| Step 2 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 11 | 12 | 52.2 |
| | Overall Percentage | | | | 93.8 |
| Step 3 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 11 | 12 | 52.2 |
| | Overall Percentage | | | | 93.8 |
| Step 4 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 11 | 12 | 52.2 |
| | Overall Percentage | | | | 93.8 |
| Step 5 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 11 | 12 | 52.2 |
| | Overall Percentage | | | | 93.8 |
| Step 6 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 11 | 12 | 52.2 |
| | Overall Percentage | | | | 93.8 |
| Step 7 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 11 | 12 | 52.2 |
| | Overall Percentage | | | | 93.8 |
| Step 8 | Shanghai vs. Others | Others | 185 | 3 | 98.4 |
| | | Shanghai | 10 | 13 | 56.5 |
| | Overall Percentage | | | | 93.8 |
| Step 9 | Shanghai vs. Others | Others | 185 | 3 | 98.4 |
| | | Shanghai | 10 | 13 | 56.5 |
| | Overall Percentage | | | | 93.8 |
| Step 10 | Shanghai vs. Others | Others | 185 | 3 | 98.4 |
| | | Shanghai | 12 | 11 | 47.8 |
| | Overall Percentage | | | | 92.9 |
| Step 11 | Shanghai vs. Others | Others | 185 | 3 | 98.4 |
| | | Shanghai | 11 | 12 | 52.2 |
| | Overall Percentage | | | | 93.4 |
| Step 12 | Shanghai vs. Others | Others | 184 | 4 | 97.9 |
| | | Shanghai | 12 | 11 | 47.8 |
| | Overall Percentage | | | | 92.4 |
| Step 13 | Shanghai vs. Others | Others | 185 | 3 | 98.4 |
| | | Shanghai | 14 | 9 | 39.1 |
| | Overall Percentage | | | | 91.9 |
| Step 14 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 12 | 11 | 47.8 |
| | Overall Percentage | | | | 93.4 |
| Step 15 | Shanghai vs. Others | Others | 187 | 1 | 99.5 |
| | | Shanghai | 13 | 10 | 43.5 |
| | Overall Percentage | | | | 93.4 |
| Step 16 | Shanghai vs. Others | Others | 187 | 1 | 99.5 |
| | | Shanghai | 15 | 8 | 34.8 |
| | Overall Percentage | | | | 92.4 |

a. The cut value is .500

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B): Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 1[a] | REDTRANS(1) | -.392 | 1.473 | .071 | 1 | .790 | .676 | .038 | 12.128 |
| | REGGROUP(1) | .180 | .902 | .040 | 1 | .842 | 1.197 | .204 | 7.011 |
| | ENTRY | | | 17.628 | 3 | .001 | | | |
| | ENTRY(1) | -1.682 | 1.354 | 1.543 | 1 | .214 | .186 | .013 | 2.643 |
| | ENTRY(2) | 3.189 | 1.313 | 5.903 | 1 | .015 | 24.271 | 1.852 | 318.001 |
| | ENTRY(3) | -1.303 | 1.756 | .551 | 1 | .458 | .272 | .009 | 8.481 |
| | ENTRYDUR | .287 | .139 | 4.254 | 1 | .039 | 1.332 | 1.014 | 1.750 |
| | PLACE2RE | | | 5.009 | 3 | .171 | | | |
| | PLACE2RE(1) | -1.345 | 2.036 | .436 | 1 | .509 | .260 | .005 | 14.099 |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 1[a] | PLACE2RE(2) | 1.660 | 1.735 | .915 | 1 | .339 | 5.257 | .175 | 157.697 |
| | PLACE2RE(3) | .649 | 1.627 | .159 | 1 | .690 | 1.914 | .079 | 46.460 |
| | TOTALDUR | -.190 | .110 | 2.987 | 1 | .084 | .827 | .666 | 1.026 |
| | REGATTRA | | | 5.549 | 2 | .062 | | | |
| | REGATTRA(1) | -2.843 | 1.596 | 3.172 | 1 | .075 | .058 | .003 | 1.331 |
| | REGATTRA(2) | -.728 | 1.608 | .205 | 1 | .651 | .483 | .021 | 11.290 |
| | REGDISTA | | | .593 | 2 | .743 | | | |
| | REGDISTA(1) | 1.154 | 2.045 | .318 | 1 | .573 | 3.170 | .058 | 174.382 |
| | REGDISTA(2) | .316 | 1.737 | .033 | 1 | .856 | 1.371 | .046 | 41.248 |
| | REGORIGI | | | 1.237 | 3 | .744 | | | |
| | REGORIGI(1) | .866 | 1.995 | .188 | 1 | .664 | 2.378 | .048 | 118.775 |
| | REGORIGI(2) | 2.181 | 2.257 | .934 | 1 | .334 | 8.855 | .106 | 738.655 |
| | REGORIGI(3) | 1.162 | 1.740 | .446 | 1 | .504 | 3.195 | .106 | 96.710 |
| | ETHNIC(1) | 3.202 | 1.467 | 4.761 | 1 | .029 | 24.583 | 1.385 | 436.277 |
| | GENDER(1) | .694 | .801 | .751 | 1 | .386 | 2.002 | .416 | 9.630 |
| | REGSPEND | | | 1.758 | 2 | .415 | | | |
| | REGSPEND(1) | -.736 | 1.184 | .387 | 1 | .534 | .479 | .047 | 4.876 |
| | REGSPEND(2) | .951 | .933 | 1.039 | 1 | .308 | 2.588 | .416 | 16.106 |
| | REGEDUCA | | | .977 | 2 | .614 | | | |
| | REGEDUCA(1) | -.717 | 1.099 | .426 | 1 | .514 | .488 | .057 | 4.204 |
| | REGEDUCA(2) | -.941 | .957 | .967 | 1 | .325 | .390 | .060 | 2.545 |
| | REGINCOM | | | 2.083 | 2 | .353 | | | |
| | REGINCOM(1) | 1.531 | 1.065 | 2.067 | 1 | .150 | 4.621 | .574 | 37.230 |
| | REGINCOM(2) | 1.002 | 1.172 | .730 | 1 | .393 | 2.722 | .274 | 27.069 |
| | REGAGE(1) | 1.504 | .958 | 2.461 | 1 | .117 | 4.498 | .687 | 29.437 |
| | MARRIAGE(1) | .222 | .855 | .068 | 1 | .795 | 1.249 | .234 | 6.677 |
| | UNDER | -.571 | .548 | 1.085 | 1 | .298 | .565 | .193 | 1.654 |
| | HARMO | .060 | .467 | .016 | 1 | .898 | 1.062 | .425 | 2.652 |
| | PREVIOUS | .008 | .033 | .062 | 1 | .803 | 1.008 | .945 | 1.076 |
| | Constant | -4.524 | 3.653 | 1.534 | 1 | .216 | .011 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 2[a] | REDTRANS(1) | -.374 | 1.467 | .065 | 1 | .799 | .688 | .039 | 12.193 |
| | REGGROUP(1) | .206 | .878 | .055 | 1 | .815 | 1.229 | .220 | 6.860 |
| | ENTRY | | | 17.589 | 3 | .001 | | | |
| | ENTRY(1) | -1.700 | 1.346 | 1.597 | 1 | .206 | .183 | .013 | 2.552 |
| | ENTRY(2) | 3.174 | 1.306 | 5.910 | 1 | .015 | 23.908 | 1.850 | 308.966 |
| | ENTRY(3) | -1.325 | 1.751 | .572 | 1 | .449 | .266 | .009 | 8.230 |
| | ENTRYDUR | .283 | .136 | 4.342 | 1 | .037 | 1.328 | 1.017 | 1.733 |
| | PLACE2RE | | | 4.987 | 3 | .173 | | | |
| | PLACE2RE(1) | -1.291 | 1.990 | .420 | 1 | .517 | .275 | .006 | 13.609 |
| | PLACE2RE(2) | 1.690 | 1.724 | .961 | 1 | .327 | 5.418 | .185 | 158.881 |
| | PLACE2RE(3) | .688 | 1.601 | .185 | 1 | .667 | 1.990 | .086 | 45.841 |
| | TOTALDUR | -.189 | .109 | 2.993 | 1 | .084 | .828 | .668 | 1.025 |
| | REGATTRA | | | 5.591 | 2 | .061 | | | |
| | REGATTRA(1) | -2.854 | 1.595 | 3.201 | 1 | .074 | .058 | .003 | 1.313 |
| | REGATTRA(2) | -.734 | 1.608 | .208 | 1 | .648 | .480 | .021 | 11.217 |
| | REGDISTA | | | .596 | 2 | .742 | | | |
| | REGDISTA(1) | 1.139 | 2.038 | .312 | 1 | .576 | 3.124 | .058 | 169.758 |
| | REGDISTA(2) | .297 | 1.727 | .030 | 1 | .863 | 1.346 | .046 | 39.684 |
| | REGORIGI | | | 1.253 | 3 | .740 | | | |
| | REGORIGI(1) | .857 | 1.996 | .184 | 1 | .668 | 2.357 | .047 | 117.892 |
| | REGORIGI(2) | 2.179 | 2.260 | .929 | 1 | .335 | 8.836 | .105 | 741.418 |
| | REGORIGI(3) | 1.209 | 1.695 | .508 | 1 | .476 | 3.349 | .121 | 92.927 |
| | ETHNIC(1) | 3.191 | 1.459 | 4.782 | 1 | .029 | 24.302 | 1.392 | 424.220 |
| | GENDER(1) | .706 | .796 | .786 | 1 | .375 | 2.026 | .425 | 9.649 |
| | REGSPEND | | | 1.763 | 2 | .414 | | | |
| | REGSPEND(1) | -.735 | 1.186 | .385 | 1 | .535 | .479 | .047 | 4.895 |
| | REGSPEND(2) | .956 | .932 | 1.053 | 1 | .305 | 2.602 | .419 | 16.164 |
| | REGEDUCA | | | 1.105 | 2 | .575 | | | |
| | REGEDUCA(1) | -.764 | 1.034 | .545 | 1 | .460 | .466 | .061 | 3.539 |
| | REGEDUCA(2) | -.966 | .936 | 1.066 | 1 | .302 | .381 | .061 | 2.382 |
| | REGINCOM | | | 2.186 | 2 | .335 | | | |
| | REGINCOM(1) | 1.552 | 1.051 | 2.181 | 1 | .140 | 4.720 | .602 | 37.018 |
| | REGINCOM(2) | .998 | 1.173 | .724 | 1 | .395 | 2.712 | .272 | 26.999 |
| | REGAGE(1) | 1.493 | .955 | 2.443 | 1 | .118 | 4.449 | .685 | 28.919 |
| | MARRIAGE(1) | .233 | .849 | .075 | 1 | .784 | 1.263 | .239 | 6.673 |
| | UNDER | -.570 | .550 | 1.072 | 1 | .301 | .566 | .192 | 1.664 |
| | PREVIOUS | .009 | .033 | .078 | 1 | .780 | 1.009 | .947 | 1.076 |
| | Constant | -4.563 | 3.644 | 1.568 | 1 | .211 | .010 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 3[a] | REDTRANS(1) | -.283 | 1.407 | .041 | 1 | .840 | .753 | .048 | 11.878 |
| | ENTRY | | | 17.884 | 3 | .000 | | | |
| | ENTRY(1) | -1.711 | 1.352 | 1.602 | 1 | .206 | .181 | .013 | 2.555 |
| | ENTRY(2) | 3.126 | 1.286 | 5.912 | 1 | .015 | 22.777 | 1.833 | 283.005 |
| | ENTRY(3) | -1.359 | 1.732 | .616 | 1 | .433 | .257 | .009 | 7.656 |
| | ENTRYDUR | .286 | .137 | 4.368 | 1 | .037 | 1.331 | 1.018 | 1.740 |
| | PLACE2RE | | | 5.261 | 3 | .154 | | | |
| | PLACE2RE(1) | -1.327 | 1.986 | .447 | 1 | .504 | .265 | .005 | 13.001 |
| | PLACE2RE(2) | 1.566 | 1.644 | .908 | 1 | .341 | 4.789 | .191 | 120.007 |
| | PLACE2RE(3) | .627 | 1.580 | .157 | 1 | .692 | 1.871 | .085 | 41.388 |
| | TOTALDUR | -.192 | .110 | 3.044 | 1 | .081 | .825 | .665 | 1.024 |
| | REGATTRA | | | 5.589 | 2 | .061 | | | |
| | REGATTRA(1) | -2.715 | 1.467 | 3.423 | 1 | .064 | .066 | .004 | 1.175 |
| | REGATTRA(2) | -.589 | 1.470 | .160 | 1 | .689 | .555 | .031 | 9.907 |
| | REGDISTA | | | .539 | 2 | .764 | | | |
| | REGDISTA(1) | 1.076 | 2.007 | .287 | 1 | .592 | 2.931 | .057 | 149.774 |
| | REGDISTA(2) | .328 | 1.709 | .037 | 1 | .848 | 1.388 | .049 | 39.553 |
| | REGORIGI | | | 1.271 | 3 | .736 | | | |
| | REGORIGI(1) | 1.001 | 1.910 | .274 | 1 | .600 | 2.720 | .064 | 114.865 |
| | REGORIGI(2) | 2.278 | 2.230 | 1.043 | 1 | .307 | 9.754 | .123 | 771.257 |
| | REGORIGI(3) | 1.241 | 1.698 | .534 | 1 | .465 | 3.459 | .124 | 96.459 |
| | ETHNIC(1) | 3.168 | 1.464 | 4.685 | 1 | .030 | 23.761 | 1.349 | 418.504 |
| | GENDER(1) | .687 | .792 | .753 | 1 | .386 | 1.988 | .421 | 9.395 |
| | REGSPEND | | | 1.745 | 2 | .418 | | | |
| | REGSPEND(1) | -.678 | 1.154 | .345 | 1 | .557 | .508 | .053 | 4.870 |
| | REGSPEND(2) | .921 | .917 | 1.008 | 1 | .315 | 2.511 | .416 | 15.144 |
| | REGEDUCA | | | 1.061 | 2 | .588 | | | |
| | REGEDUCA(1) | -.740 | 1.032 | .514 | 1 | .473 | .477 | .063 | 3.603 |
| | REGEDUCA(2) | -.937 | .927 | 1.022 | 1 | .312 | .392 | .064 | 2.410 |
| | REGINCOM | | | 2.227 | 2 | .328 | | | |
| | REGINCOM(1) | 1.564 | 1.051 | 2.212 | 1 | .137 | 4.776 | .608 | 37.489 |
| | REGINCOM(2) | 1.038 | 1.163 | .797 | 1 | .372 | 2.824 | .289 | 27.569 |
| | REGAGE(1) | 1.469 | .945 | 2.414 | 1 | .120 | 4.344 | .681 | 27.708 |
| | MARRIAGE(1) | .198 | .834 | .056 | 1 | .813 | 1.218 | .238 | 6.242 |
| | UNDER | -.545 | .540 | 1.016 | 1 | .313 | .580 | .201 | 1.672 |
| | PREVIOUS | .011 | .031 | .129 | 1 | .719 | 1.011 | .951 | 1.075 |
| | Constant | -4.592 | 3.637 | 1.594 | 1 | .207 | .010 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 4a | ENTRY | | | 17.825 | 3 | .000 | | | |
| | ENTRY(1) | -1.797 | 1.280 | 1.972 | 1 | .160 | .166 | .013 | 2.036 |
| | ENTRY(2) | 3.067 | 1.239 | 6.125 | 1 | .013 | 21.488 | 1.893 | 243.920 |
| | ENTRY(3) | -1.291 | 1.682 | .589 | 1 | .443 | .275 | .010 | 7.432 |
| | ENTRYDUR | .281 | .135 | 4.356 | 1 | .037 | 1.324 | 1.017 | 1.724 |
| | PLACE2RE | | | 5.248 | 3 | .154 | | | |
| | PLACE2RE(1) | -1.255 | 1.947 | .415 | 1 | .519 | .285 | .006 | 12.961 |
| | PLACE2RE(2) | 1.597 | 1.635 | .953 | 1 | .329 | 4.936 | .200 | 121.687 |
| | PLACE2RE(3) | .613 | 1.574 | .152 | 1 | .697 | 1.847 | .084 | 40.408 |
| | TOTALDUR | -.189 | .110 | 2.970 | 1 | .085 | .828 | .667 | 1.026 |
| | REGATTRA | | | 5.776 | 2 | .056 | | | |
| | REGATTRA(1) | -2.701 | 1.454 | 3.452 | 1 | .063 | .067 | .004 | 1.160 |
| | REGATTRA(2) | -.531 | 1.430 | .138 | 1 | .710 | .588 | .036 | 9.700 |
| | REGDISTA | | | .507 | 2 | .776 | | | |
| | REGDISTA(1) | 1.030 | 1.983 | .270 | 1 | .603 | 2.802 | .057 | 136.686 |
| | REGDISTA(2) | .317 | 1.700 | .035 | 1 | .852 | 1.373 | .049 | 38.459 |
| | REGORIGI | | | 1.239 | 3 | .744 | | | |
| | REGORIGI(1) | 1.009 | 1.908 | .280 | 1 | .597 | 2.742 | .065 | 115.277 |
| | REGORIGI(2) | 2.260 | 2.230 | 1.027 | 1 | .311 | 9.587 | .121 | 758.903 |
| | REGORIGI(3) | 1.196 | 1.677 | .509 | 1 | .476 | 3.306 | .124 | 88.445 |
| | ETHNIC(1) | 3.136 | 1.454 | 4.654 | 1 | .031 | 23.022 | 1.332 | 397.783 |
| | GENDER(1) | .684 | .791 | .747 | 1 | .388 | 1.981 | .420 | 9.340 |
| | REGSPEND | | | 1.794 | 2 | .408 | | | |
| | REGSPEND(1) | -.655 | 1.142 | .329 | 1 | .566 | .520 | .055 | 4.875 |
| | REGSPEND(2) | .941 | .910 | 1.069 | 1 | .301 | 2.563 | .430 | 15.256 |
| | REGEDUCA | | | 1.114 | 2 | .573 | | | |
| | REGEDUCA(1) | -.751 | 1.034 | .528 | 1 | .468 | .472 | .062 | 3.580 |
| | REGEDUCA(2) | -.957 | .922 | 1.078 | 1 | .299 | .384 | .063 | 2.339 |
| | REGINCOM | | | 2.619 | 2 | .270 | | | |
| | REGINCOM(1) | 1.627 | 1.008 | 2.603 | 1 | .107 | 5.088 | .705 | 36.719 |
| | REGINCOM(2) | 1.080 | 1.145 | .890 | 1 | .345 | 2.945 | .312 | 27.752 |
| | REGAGE(1) | 1.444 | .935 | 2.383 | 1 | .123 | 4.238 | .677 | 26.508 |
| | MARRIAGE(1) | .176 | .827 | .045 | 1 | .832 | 1.192 | .236 | 6.027 |
| | UNDER | -.557 | .537 | 1.075 | 1 | .300 | .573 | .200 | 1.641 |
| | PREVIOUS | .010 | .031 | .114 | 1 | .735 | 1.011 | .951 | 1.074 |
| | Constant | -4.814 | 3.468 | 1.927 | 1 | .165 | .008 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 5a | ENTRY | | | 17.665 | 3 | .001 | | | |
| | ENTRY(1) | -1.774 | 1.284 | 1.909 | 1 | .167 | .170 | .014 | 2.101 |
| | ENTRY(2) | 3.089 | 1.242 | 6.186 | 1 | .013 | 21.964 | 1.925 | 250.618 |
| | ENTRY(3) | -1.268 | 1.677 | .571 | 1 | .450 | .281 | .011 | 7.533 |
| | ENTRYDUR | .279 | .134 | 4.291 | 1 | .038 | 1.321 | 1.015 | 1.720 |
| | PLACE2RE | | | 5.392 | 3 | .145 | | | |
| | PLACE2RE(1) | -1.217 | 1.942 | .393 | 1 | .531 | .296 | .007 | 13.325 |
| | PLACE2RE(2) | 1.644 | 1.622 | 1.027 | 1 | .311 | 5.177 | .215 | 124.453 |
| | PLACE2RE(3) | .624 | 1.578 | .156 | 1 | .693 | 1.867 | .085 | 41.162 |
| | TOTALDUR | -.188 | .110 | 2.927 | 1 | .087 | .829 | .669 | 1.028 |
| | REGATTRA | | | 5.717 | 2 | .057 | | | |
| | REGATTRA(1) | -2.655 | 1.448 | 3.362 | 1 | .067 | .070 | .004 | 1.201 |
| | REGATTRA(2) | -.476 | 1.419 | .113 | 1 | .737 | .621 | .038 | 10.026 |
| | REGDISTA | | | .517 | 2 | .772 | | | |
| | REGDISTA(1) | 1.077 | 1.968 | .299 | 1 | .584 | 2.935 | .062 | 138.960 |
| | REGDISTA(2) | .366 | 1.683 | .047 | 1 | .828 | 1.442 | .053 | 39.044 |
| | REGORIGI | | | 1.209 | 3 | .751 | | | |
| | REGORIGI(1) | 1.019 | 1.914 | .284 | 1 | .594 | 2.771 | .065 | 118.100 |
| | REGORIGI(2) | 2.224 | 2.221 | 1.003 | 1 | .317 | 9.246 | .119 | 718.774 |
| | REGORIGI(3) | 1.158 | 1.671 | .480 | 1 | .488 | 3.183 | .120 | 84.182 |
| | ETHNIC(1) | 3.128 | 1.456 | 4.615 | 1 | .032 | 22.821 | 1.316 | 395.886 |
| | GENDER(1) | .671 | .792 | .718 | 1 | .397 | 1.956 | .414 | 9.230 |
| | REGSPEND | | | 1.785 | 2 | .410 | | | |
| | REGSPEND(1) | -.638 | 1.147 | .310 | 1 | .578 | .528 | .056 | 5.004 |
| | REGSPEND(2) | .953 | .912 | 1.091 | 1 | .296 | 2.593 | .434 | 15.491 |
| | REGEDUCA | | | 1.101 | 2 | .577 | | | |
| | REGEDUCA(1) | -.782 | 1.027 | .580 | 1 | .446 | .458 | .061 | 3.424 |
| | REGEDUCA(2) | -.941 | .918 | 1.052 | 1 | .305 | .390 | .065 | 2.356 |
| | REGINCOM | | | 2.681 | 2 | .262 | | | |
| | REGINCOM(1) | 1.642 | 1.007 | 2.662 | 1 | .103 | 5.167 | .719 | 37.156 |
| | REGINCOM(2) | 1.094 | 1.146 | .911 | 1 | .340 | 2.987 | .316 | 28.244 |
| | REGAGE(1) | 1.510 | .884 | 2.920 | 1 | .087 | 4.526 | .801 | 25.570 |
| | UNDER | -.542 | .532 | 1.035 | 1 | .309 | .582 | .205 | 1.652 |
| | PREVIOUS | .010 | .031 | .115 | 1 | .734 | 1.011 | .951 | 1.073 |
| | Constant | -4.922 | 3.433 | 2.056 | 1 | .152 | .007 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 6a | ENTRY | | | 17.748 | 3 | .000 | | | |
| | ENTRY(1) | -1.719 | 1.260 | 1.861 | 1 | .173 | .179 | .015 | 2.118 |
| | ENTRY(2) | 3.071 | 1.216 | 6.379 | 1 | .012 | 21.554 | 1.989 | 233.529 |
| | ENTRY(3) | -1.362 | 1.566 | .757 | 1 | .384 | .256 | .012 | 5.513 |
| | ENTRYDUR | .270 | .133 | 4.087 | 1 | .043 | 1.310 | 1.008 | 1.701 |
| | PLACE2RE | | | 5.634 | 3 | .131 | | | |
| | PLACE2RE(1) | -1.226 | 1.929 | .404 | 1 | .525 | .293 | .007 | 12.861 |
| | PLACE2RE(2) | 1.673 | 1.603 | 1.089 | 1 | .297 | 5.327 | .230 | 123.392 |
| | PLACE2RE(3) | .612 | 1.548 | .156 | 1 | .693 | 1.844 | .089 | 38.320 |
| | TOTALDUR | -.178 | .106 | 2.810 | 1 | .094 | .837 | .680 | 1.031 |
| | REGATTRA | | | 5.648 | 2 | .059 | | | |
| | REGATTRA(1) | -2.590 | 1.464 | 3.129 | 1 | .077 | .075 | .004 | 1.323 |
| | REGATTRA(2) | -.391 | 1.425 | .075 | 1 | .784 | .676 | .041 | 11.049 |
| | REGORIGI | | | 1.282 | 3 | .734 | | | |
| | REGORIGI(1) | 1.211 | 1.857 | .426 | 1 | .514 | 3.358 | .088 | 127.749 |
| | REGORIGI(2) | 2.339 | 2.178 | 1.154 | 1 | .283 | 10.375 | .145 | 741.137 |
| | REGORIGI(3) | .921 | 1.613 | .326 | 1 | .568 | 2.511 | .106 | 59.232 |
| | ETHNIC(1) | 2.841 | 1.392 | 4.164 | 1 | .041 | 17.139 | 1.119 | 262.592 |
| | GENDER(1) | .661 | .788 | .703 | 1 | .402 | 1.936 | .413 | 9.065 |
| | REGSPEND | | | 1.907 | 2 | .385 | | | |
| | REGSPEND(1) | -.722 | 1.116 | .418 | 1 | .518 | .486 | .054 | 4.333 |
| | REGSPEND(2) | .939 | .903 | 1.082 | 1 | .298 | 2.558 | .436 | 15.008 |
| | REGEDUCA | | | .924 | 2 | .630 | | | |
| | REGEDUCA(1) | -.643 | .991 | .421 | 1 | .516 | .526 | .075 | 3.667 |
| | REGEDUCA(2) | -.861 | .908 | .900 | 1 | .343 | .423 | .071 | 2.505 |
| | REGINCOM | | | 2.728 | 2 | .256 | | | |
| | REGINCOM(1) | 1.617 | .998 | 2.626 | 1 | .105 | 5.039 | .713 | 35.635 |
| | REGINCOM(2) | 1.267 | 1.116 | 1.289 | 1 | .256 | 3.551 | .398 | 31.641 |
| | REGAGE(1) | 1.547 | .880 | 3.089 | 1 | .079 | 4.698 | .837 | 26.380 |
| | UNDER | -.505 | .530 | .908 | 1 | .341 | .604 | .214 | 1.705 |
| | PREVIOUS | .007 | .030 | .051 | 1 | .821 | 1.007 | .949 | 1.068 |
| | Constant | -4.356 | 2.995 | 2.116 | 1 | .146 | .013 | | |
| Step 7a | ENTRY | | | 17.786 | 3 | .000 | | | |
| | ENTRY(1) | -1.706 | 1.253 | 1.853 | 1 | .173 | .182 | .016 | 2.118 |
| | ENTRY(2) | 3.072 | 1.214 | 6.410 | 1 | .011 | 21.595 | 2.001 | 233.003 |
| | ENTRY(3) | -1.366 | 1.568 | .759 | 1 | .384 | .255 | .012 | 5.514 |
| | ENTRYDUR | .268 | .134 | 4.030 | 1 | .045 | 1.308 | 1.006 | 1.699 |
| | PLACE2RE | | | 5.592 | 3 | .133 | | | |
| | PLACE2RE(1) | -1.158 | 1.898 | .372 | 1 | .542 | .314 | .008 | 12.960 |
| | PLACE2RE(2) | 1.714 | 1.590 | 1.162 | 1 | .281 | 5.553 | .246 | 125.341 |
| | PLACE2RE(3) | .636 | 1.539 | .171 | 1 | .679 | 1.889 | .093 | 38.567 |
| | TOTALDUR | -.176 | .107 | 2.742 | 1 | .098 | .838 | .680 | 1.033 |
| | REGATTRA | | | 5.720 | 2 | .057 | | | |
| | REGATTRA(1) | -2.519 | 1.425 | 3.123 | 1 | .077 | .081 | .005 | 1.316 |
| | REGATTRA(2) | -.352 | 1.412 | .062 | 1 | .803 | .704 | .044 | 11.206 |
| | REGORIGI | | | 1.246 | 3 | .742 | | | |
| | REGORIGI(1) | 1.126 | 1.813 | .386 | 1 | .535 | 3.082 | .088 | 107.687 |
| | REGORIGI(2) | 2.248 | 2.132 | 1.111 | 1 | .292 | 9.465 | .145 | 618.417 |
| | REGORIGI(3) | .835 | 1.570 | .283 | 1 | .595 | 2.305 | .106 | 50.010 |
| | ETHNIC(1) | 2.823 | 1.388 | 4.137 | 1 | .042 | 16.829 | 1.108 | 255.564 |
| | GENDER(1) | .620 | .765 | .658 | 1 | .417 | 1.860 | .415 | 8.331 |
| | REGSPEND | | | 1.953 | 2 | .377 | | | |
| | REGSPEND(1) | -.694 | 1.114 | .389 | 1 | .533 | .499 | .056 | 4.432 |
| | REGSPEND(2) | .967 | .891 | 1.178 | 1 | .278 | 2.631 | .459 | 15.084 |
| | REGEDUCA | | | .910 | 2 | .634 | | | |
| | REGEDUCA(1) | -.642 | .988 | .422 | 1 | .516 | .526 | .076 | 3.649 |
| | REGEDUCA(2) | -.852 | .907 | .883 | 1 | .348 | .427 | .072 | 2.523 |
| | REGINCOM | | | 2.712 | 2 | .258 | | | |
| | REGINCOM(1) | 1.567 | .968 | 2.621 | 1 | .105 | 4.791 | .719 | 31.930 |
| | REGINCOM(2) | 1.266 | 1.113 | 1.294 | 1 | .255 | 3.546 | .400 | 31.393 |
| | REGAGE(1) | 1.543 | .878 | 3.089 | 1 | .079 | 4.680 | .837 | 26.164 |
| | UNDER | -.506 | .530 | .912 | 1 | .340 | .603 | .213 | 1.704 |
| | Constant | -4.322 | 2.986 | 2.096 | 1 | .148 | .013 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 8[a] | ENTRY | | | 19.029 | 3 | .000 | | | |
| | ENTRY(1) | -1.639 | 1.202 | 1.861 | 1 | .172 | .194 | .018 | 2.046 |
| | ENTRY(2) | 3.169 | 1.188 | 7.108 | 1 | .008 | 23.773 | 2.315 | 244.182 |
| | ENTRY(3) | -1.265 | 1.514 | .698 | 1 | .403 | .282 | .015 | 5.485 |
| | ENTRYDUR | .231 | .111 | 4.348 | 1 | .037 | 1.259 | 1.014 | 1.564 |
| | PLACE2RE | | | 5.336 | 3 | .149 | | | |
| | PLACE2RE(1) | -1.272 | 1.809 | .495 | 1 | .482 | .280 | .008 | 9.712 |
| | PLACE2RE(2) | 1.300 | 1.431 | .824 | 1 | .364 | 3.668 | .222 | 60.632 |
| | PLACE2RE(3) | .295 | 1.406 | .044 | 1 | .834 | 1.343 | .085 | 21.123 |
| | TOTALDUR | -.136 | .078 | 3.038 | 1 | .081 | .873 | .749 | 1.017 |
| | REGATTRA | | | 5.312 | 2 | .070 | | | |
| | REGATTRA(1) | -2.205 | 1.398 | 2.489 | 1 | .115 | .110 | .007 | 1.707 |
| | REGATTRA(2) | -.303 | 1.419 | .046 | 1 | .831 | .738 | .046 | 11.920 |
| | ETHNIC(1) | 2.241 | 1.089 | 4.231 | 1 | .040 | 9.399 | 1.111 | 79.490 |
| | GENDER(1) | .660 | .738 | .800 | 1 | .371 | 1.934 | .456 | 8.207 |
| | REGSPEND | | | 3.374 | 2 | .185 | | | |
| | REGSPEND(1) | -.819 | 1.045 | .614 | 1 | .433 | .441 | .057 | 3.420 |
| | REGSPEND(2) | 1.190 | .873 | 1.858 | 1 | .173 | 3.287 | .594 | 18.189 |
| | REGEDUCA | | | 1.425 | 2 | .491 | | | |
| | REGEDUCA(1) | -.903 | .940 | .922 | 1 | .337 | .405 | .064 | 2.559 |
| | REGEDUCA(2) | -.948 | .849 | 1.247 | 1 | .264 | .387 | .073 | 2.046 |
| | REGINCOM | | | 2.732 | 2 | .255 | | | |
| | REGINCOM(1) | 1.409 | .898 | 2.463 | 1 | .117 | 4.092 | .704 | 23.777 |
| | REGINCOM(2) | 1.274 | 1.024 | 1.548 | 1 | .213 | 3.575 | .481 | 26.597 |
| | REGAGE(1) | 1.501 | .856 | 3.076 | 1 | .079 | 4.487 | .838 | 24.013 |
| | UNDER | -.272 | .463 | .344 | 1 | .558 | .762 | .307 | 1.890 |
| | Constant | -3.236 | 2.605 | 1.543 | 1 | .214 | .039 | | |
| Step 9[a] | ENTRY | | | 19.535 | 3 | .000 | | | |
| | ENTRY(1) | -1.799 | 1.169 | 2.366 | 1 | .124 | .165 | .017 | 1.638 |
| | ENTRY(2) | 3.075 | 1.171 | 6.895 | 1 | .009 | 21.652 | 2.181 | 214.935 |
| | ENTRY(3) | -1.336 | 1.479 | .816 | 1 | .366 | .263 | .014 | 4.770 |
| | ENTRYDUR | .246 | .108 | 5.166 | 1 | .023 | 1.279 | 1.034 | 1.581 |
| | PLACE2RE | | | 5.266 | 3 | .153 | | | |
| | PLACE2RE(1) | -1.101 | 1.795 | .376 | 1 | .540 | .332 | .010 | 11.205 |
| | PLACE2RE(2) | 1.379 | 1.438 | .920 | 1 | .337 | 3.971 | .237 | 66.467 |
| | PLACE2RE(3) | .396 | 1.399 | .080 | 1 | .777 | 1.486 | .096 | 23.043 |
| | TOTALDUR | -.142 | .079 | 3.225 | 1 | .073 | .867 | .742 | 1.013 |
| | REGATTRA | | | 5.199 | 2 | .074 | | | |
| | REGATTRA(1) | -2.103 | 1.395 | 2.273 | 1 | .132 | .122 | .008 | 1.880 |
| | REGATTRA(2) | -.179 | 1.402 | .016 | 1 | .898 | .836 | .054 | 13.052 |
| | ETHNIC(1) | 2.576 | .934 | 7.611 | 1 | .006 | 13.150 | 2.109 | 82.012 |
| | GENDER(1) | .653 | .732 | .796 | 1 | .372 | 1.921 | .457 | 8.070 |
| | REGSPEND | | | 3.696 | 2 | .158 | | | |
| | REGSPEND(1) | -.884 | 1.062 | .694 | 1 | .405 | .413 | .052 | 3.308 |
| | REGSPEND(2) | 1.213 | .857 | 2.002 | 1 | .157 | 3.363 | .627 | 18.052 |
| | REGEDUCA | | | 1.167 | 2 | .558 | | | |
| | REGEDUCA(1) | -.837 | .936 | .799 | 1 | .371 | .433 | .069 | 2.713 |
| | REGEDUCA(2) | -.807 | .811 | .989 | 1 | .320 | .446 | .091 | 2.188 |
| | REGINCOM | | | 2.930 | 2 | .231 | | | |
| | REGINCOM(1) | 1.402 | .887 | 2.494 | 1 | .114 | 4.061 | .713 | 23.125 |
| | REGINCOM(2) | 1.380 | .997 | 1.914 | 1 | .167 | 3.974 | .563 | 28.069 |
| | REGAGE(1) | 1.519 | .845 | 3.233 | 1 | .072 | 4.568 | .872 | 23.920 |
| | Constant | -3.487 | 2.564 | 1.850 | 1 | .174 | .031 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 10[a] | ENTRY | | | 20.349 | 3 | .000 | | | |
| | ENTRY(1) | -1.765 | 1.134 | 2.424 | 1 | .120 | .171 | .019 | 1.580 |
| | ENTRY(2) | 2.969 | 1.127 | 6.947 | 1 | .008 | 19.481 | 2.141 | 177.253 |
| | ENTRY(3) | -1.315 | 1.468 | .802 | 1 | .370 | .269 | .015 | 4.769 |
| | ENTRYDUR | .237 | .105 | 5.121 | 1 | .024 | 1.267 | 1.032 | 1.556 |
| | PLACE2RE | | | 5.133 | 3 | .162 | | | |
| | PLACE2RE(1) | -1.355 | 1.752 | .598 | 1 | .439 | .258 | .008 | 8.003 |
| | PLACE2RE(2) | 1.119 | 1.397 | .642 | 1 | .423 | 3.063 | .198 | 47.360 |
| | PLACE2RE(3) | .275 | 1.385 | .039 | 1 | .843 | 1.316 | .087 | 19.868 |
| | TOTALDUR | -.127 | .073 | 2.974 | 1 | .085 | .881 | .763 | 1.017 |
| | REGATTRA | | | 4.646 | 2 | .098 | | | |
| | REGATTRA(1) | -1.979 | 1.345 | 2.166 | 1 | .141 | .138 | .010 | 1.929 |
| | REGATTRA(2) | -.339 | 1.356 | .063 | 1 | .803 | .712 | .050 | 10.166 |
| | ETHNIC(1) | 2.573 | .917 | 7.879 | 1 | .005 | 13.104 | 2.173 | 79.000 |
| | GENDER(1) | .573 | .726 | .624 | 1 | .429 | 1.774 | .428 | 7.357 |
| | REGSPEND | | | 3.275 | 2 | .194 | | | |
| | REGSPEND(1) | -.712 | .998 | .509 | 1 | .476 | .491 | .069 | 3.468 |
| | REGSPEND(2) | 1.145 | .838 | 1.866 | 1 | .172 | 3.143 | .608 | 16.247 |
| | REGINCOM | | | 2.465 | 2 | .292 | | | |
| | REGINCOM(1) | 1.192 | .852 | 1.955 | 1 | .162 | 3.292 | .619 | 17.499 |
| | REGINCOM(2) | 1.312 | .980 | 1.792 | 1 | .181 | 3.714 | .544 | 25.356 |
| | REGAGE(1) | 1.469 | .810 | 3.289 | 1 | .070 | 4.343 | .888 | 21.241 |
| | Constant | -3.844 | 2.560 | 2.254 | 1 | .133 | .021 | | |
| Step 11[a] | ENTRY | | | 20.501 | 3 | .000 | | | |
| | ENTRY(1) | -1.843 | 1.133 | 2.646 | 1 | .104 | .158 | .017 | 1.459 |
| | ENTRY(2) | 2.756 | 1.094 | 6.343 | 1 | .012 | 15.738 | 1.843 | 134.420 |
| | ENTRY(3) | -1.396 | 1.476 | .895 | 1 | .344 | .248 | .014 | 4.463 |
| | ENTRYDUR | .241 | .103 | 5.425 | 1 | .020 | 1.272 | 1.039 | 1.557 |
| | PLACE2RE | | | 5.046 | 3 | .168 | | | |
| | PLACE2RE(1) | -1.453 | 1.715 | .718 | 1 | .397 | .234 | .008 | 6.739 |
| | PLACE2RE(2) | .979 | 1.347 | .528 | 1 | .467 | 2.662 | .190 | 37.281 |
| | PLACE2RE(3) | .166 | 1.344 | .015 | 1 | .902 | 1.181 | .085 | 16.434 |
| | TOTALDUR | -.124 | .073 | 2.877 | 1 | .090 | .884 | .766 | 1.019 |
| | REGATTRA | | | 4.302 | 2 | .116 | | | |
| | REGATTRA(1) | -1.801 | 1.340 | 1.807 | 1 | .179 | .165 | .012 | 2.282 |
| | REGATTRA(2) | -.288 | 1.367 | .045 | 1 | .833 | .749 | .051 | 10.912 |
| | ETHNIC(1) | 2.648 | .906 | 8.537 | 1 | .003 | 14.126 | 2.391 | 83.451 |
| | REGSPEND | | | 2.792 | 2 | .248 | | | |
| | REGSPEND(1) | -.679 | 1.001 | .460 | 1 | .498 | .507 | .071 | 3.607 |
| | REGSPEND(2) | 1.003 | .829 | 1.464 | 1 | .226 | 2.727 | .537 | 13.842 |
| | REGINCOM | | | 1.947 | 2 | .378 | | | |
| | REGINCOM(1) | .963 | .799 | 1.454 | 1 | .228 | 2.620 | .548 | 12.530 |
| | REGINCOM(2) | 1.093 | .928 | 1.389 | 1 | .239 | 2.984 | .484 | 18.382 |
| | REGAGE(1) | 1.337 | .798 | 2.811 | 1 | .094 | 3.808 | .798 | 18.180 |
| | Constant | -3.262 | 2.457 | 1.763 | 1 | .184 | .038 | | |
| Step 12[a] | ENTRY | | | 22.127 | 3 | .000 | | | |
| | ENTRY(1) | -1.676 | 1.101 | 2.315 | 1 | .128 | .187 | .022 | 1.621 |
| | ENTRY(2) | 2.837 | 1.085 | 6.841 | 1 | .009 | 17.067 | 2.036 | 143.041 |
| | ENTRY(3) | -1.360 | 1.460 | .868 | 1 | .352 | .257 | .015 | 4.490 |
| | ENTRYDUR | .242 | .103 | 5.514 | 1 | .019 | 1.274 | 1.041 | 1.559 |
| | PLACE2RE | | | 5.083 | 3 | .166 | | | |
| | PLACE2RE(1) | -1.445 | 1.592 | .823 | 1 | .364 | .236 | .010 | 5.345 |
| | PLACE2RE(2) | .913 | 1.265 | .520 | 1 | .471 | 2.491 | .209 | 29.736 |
| | PLACE2RE(3) | -.048 | 1.218 | .002 | 1 | .969 | .953 | .088 | 10.370 |
| | TOTALDUR | -.122 | .074 | 2.747 | 1 | .097 | .885 | .766 | 1.023 |
| | REGATTRA | | | 3.742 | 2 | .154 | | | |
| | REGATTRA(1) | -1.720 | 1.304 | 1.740 | 1 | .187 | .179 | .014 | 2.306 |
| | REGATTRA(2) | -.451 | 1.350 | .112 | 1 | .738 | .637 | .045 | 8.974 |
| | ETHNIC(1) | 2.304 | .833 | 7.644 | 1 | .006 | 10.012 | 1.956 | 51.264 |
| | REGSPEND | | | 2.637 | 2 | .268 | | | |
| | REGSPEND(1) | -.343 | .961 | .127 | 1 | .721 | .710 | .108 | 4.666 |
| | REGSPEND(2) | 1.103 | .801 | 1.896 | 1 | .169 | 3.013 | .627 | 14.485 |
| | REGAGE(1) | 1.333 | .804 | 2.751 | 1 | .097 | 3.791 | .785 | 18.311 |
| | Constant | -2.586 | 2.246 | 1.325 | 1 | .250 | .075 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 13[a] | ENTRY | | | 23.436 | 3 | .000 | | | |
| | ENTRY(1) | -1.799 | 1.057 | 2.899 | 1 | .089 | .166 | .021 | 1.312 |
| | ENTRY(2) | 2.762 | .997 | 7.671 | 1 | .006 | 15.825 | 2.242 | 111.711 |
| | ENTRY(3) | -1.843 | 1.418 | 1.689 | 1 | .194 | .158 | .010 | 2.551 |
| | ENTRYDUR | .254 | .104 | 6.003 | 1 | .014 | 1.289 | 1.052 | 1.579 |
| | PLACE2RE | | | 5.201 | 3 | .158 | | | |
| | PLACE2RE(1) | -1.217 | 1.553 | .614 | 1 | .433 | .296 | .014 | 6.213 |
| | PLACE2RE(2) | 1.022 | 1.245 | .674 | 1 | .412 | 2.779 | .242 | 31.870 |
| | PLACE2RE(3) | -.085 | 1.206 | .005 | 1 | .944 | .918 | .086 | 9.768 |
| | TOTALDUR | -.125 | .073 | 2.922 | 1 | .087 | .882 | .765 | 1.018 |
| | REGATTRA | | | 3.011 | 2 | .222 | | | |
| | REGATTRA(1) | -1.576 | 1.274 | 1.531 | 1 | .216 | .207 | .017 | 2.511 |
| | REGATTRA(2) | -.538 | 1.334 | .163 | 1 | .687 | .584 | .043 | 7.982 |
| | ETHNIC(1) | 1.970 | .766 | 6.614 | 1 | .010 | 7.174 | 1.598 | 32.207 |
| | REGAGE(1) | 1.458 | .785 | 3.445 | 1 | .063 | 4.296 | .922 | 20.019 |
| | Constant | -2.445 | 2.049 | 1.423 | 1 | .233 | .087 | | |
| Step 14[a] | ENTRY | | | 23.512 | 3 | .000 | | | |
| | ENTRY(1) | -1.839 | 1.039 | 3.131 | 1 | .077 | .159 | .021 | 1.219 |
| | ENTRY(2) | 2.470 | .920 | 7.209 | 1 | .007 | 11.825 | 1.948 | 71.768 |
| | ENTRY(3) | -1.973 | 1.390 | 2.016 | 1 | .156 | .139 | .009 | 2.118 |
| | ENTRYDUR | .285 | .107 | 7.051 | 1 | .008 | 1.330 | 1.078 | 1.642 |
| | PLACE2RE | | | 3.935 | 3 | .269 | | | |
| | PLACE2RE(1) | -.945 | 1.505 | .394 | 1 | .530 | .389 | .020 | 7.422 |
| | PLACE2RE(2) | .952 | 1.242 | .587 | 1 | .443 | 2.591 | .227 | 29.569 |
| | PLACE2RE(3) | .228 | 1.180 | .037 | 1 | .847 | 1.257 | .124 | 12.702 |
| | TOTALDUR | -.137 | .076 | 3.229 | 1 | .072 | .872 | .751 | 1.012 |
| | ETHNIC(1) | 1.919 | .740 | 6.724 | 1 | .010 | 6.816 | 1.598 | 29.079 |
| | REGAGE(1) | 1.293 | .759 | 2.902 | 1 | .088 | 3.642 | .823 | 16.117 |
| | Constant | -3.600 | 1.591 | 5.118 | 1 | .024 | .027 | | |
| Step 15[a] | ENTRY | | | 25.129 | 3 | .000 | | | |
| | ENTRY(1) | -2.453 | 1.014 | 5.852 | 1 | .016 | .086 | .012 | .628 |
| | ENTRY(2) | 1.993 | .852 | 5.468 | 1 | .019 | 7.337 | 1.381 | 38.986 |
| | ENTRY(3) | -2.852 | 1.301 | 4.803 | 1 | .028 | .058 | .005 | .740 |
| | ENTRYDUR | .238 | .090 | 6.947 | 1 | .008 | 1.269 | 1.063 | 1.514 |
| | TOTALDUR | -.121 | .063 | 3.764 | 1 | .052 | .886 | .784 | 1.001 |
| | ETHNIC(1) | 1.541 | .686 | 5.043 | 1 | .025 | 4.669 | 1.217 | 17.920 |
| | REGAGE(1) | 1.109 | .724 | 2.345 | 1 | .126 | 3.031 | .733 | 12.527 |
| | Constant | -2.764 | .969 | 8.134 | 1 | .004 | .063 | | |
| Step 16[a] | ENTRY | | | 26.046 | 3 | .000 | | | |
| | ENTRY(1) | -2.257 | .980 | 5.302 | 1 | .021 | .105 | .015 | .715 |
| | ENTRY(2) | 1.700 | .786 | 4.673 | 1 | .031 | 5.473 | 1.172 | 25.557 |
| | ENTRY(3) | -2.508 | 1.270 | 3.897 | 1 | .048 | .081 | .007 | .982 |
| | ENTRYDUR | .253 | .093 | 7.453 | 1 | .006 | 1.288 | 1.074 | 1.544 |
| | TOTALDUR | -.131 | .061 | 4.639 | 1 | .031 | .877 | .779 | .988 |
| | ETHNIC(1) | 1.751 | .664 | 6.943 | 1 | .008 | 5.759 | 1.566 | 21.178 |
| | Constant | -2.294 | .849 | 7.303 | 1 | .007 | .101 | | |

a. Variable(s) entered on step 1: REDTRANS, REGGROUP, ENTRY, ENTRYDUR, PLACE2RE, TOTALDUR, REGATTRA, REGDISTA, REGORIGI, ETHNIC, GENDER, REGSPEND, REGEDUCA, REGINCOM, REGAGE, MARRIAGE, UNDER, HARMO, PREVIOUS.

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 1 | REDTRANS | -38.648 | .071 | 1 | .791 |
| | REGGROUP | -38.633 | .040 | 1 | .842 |
| | ENTRY | -54.239 | 31.251 | 3 | .000 |
| | ENTRYDUR | -41.185 | 5.144 | 1 | .023 |
| | PLACE2RE | -41.360 | 5.494 | 3 | .139 |
| | TOTALDUR | -40.852 | 4.477 | 1 | .034 |
| | REGATTRA | -41.817 | 6.407 | 2 | .041 |
| | REGDISTA | -38.916 | .606 | 2 | .739 |
| | REGORIGI | -39.255 | 1.284 | 3 | .733 |
| | ETHNIC | -41.076 | 4.926 | 1 | .026 |
| | GENDER | -38.998 | .769 | 1 | .381 |
| | REGSPEND | -39.501 | 1.776 | 2 | .411 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 1 | REGEDUCA | -39.109 | .992 | 2 | .609 |
| | REGINCOM | -39.767 | 2.308 | 2 | .315 |
| | REGAGE | -39.916 | 2.605 | 1 | .107 |
| | MARRIAGE | -38.647 | .067 | 1 | .795 |
| | UNDER | -39.171 | 1.115 | 1 | .291 |
| | HARMO | -38.621 | .015 | 1 | .901 |
| | PREVIOUS | -38.644 | .061 | 1 | .805 |
| Step 2 | REDTRANS | -38.653 | .065 | 1 | .799 |
| | REGGROUP | -38.649 | .055 | 1 | .814 |
| | ENTRY | -54.239 | 31.236 | 3 | .000 |
| | ENTRYDUR | -41.260 | 5.277 | 1 | .022 |
| | PLACE2RE | -41.374 | 5.505 | 3 | .138 |
| | TOTALDUR | -40.859 | 4.477 | 1 | .034 |
| | REGATTRA | -41.853 | 6.463 | 2 | .039 |
| | REGDISTA | -38.924 | .607 | 2 | .738 |
| | REGORIGI | -39.273 | 1.303 | 3 | .728 |
| | ETHNIC | -41.082 | 4.923 | 1 | .026 |
| | GENDER | -39.024 | .806 | 1 | .369 |
| | REGSPEND | -39.512 | 1.782 | 2 | .410 |
| | REGEDUCA | -39.177 | 1.112 | 2 | .574 |
| | REGINCOM | -39.836 | 2.429 | 2 | .297 |
| | REGAGE | -39.917 | 2.592 | 1 | .107 |
| | MARRIAGE | -38.659 | .075 | 1 | .784 |
| | UNDER | -39.173 | 1.104 | 1 | .293 |
| | PREVIOUS | -38.659 | .076 | 1 | .783 |
| Step 3 | REDTRANS | -38.669 | .040 | 1 | .841 |
| | ENTRY | -54.297 | 31.296 | 3 | .000 |
| | ENTRYDUR | -41.308 | 5.318 | 1 | .021 |
| | PLACE2RE | -41.542 | 5.787 | 3 | .122 |
| | TOTALDUR | -40.948 | 4.599 | 1 | .032 |
| | REGATTRA | -41.868 | 6.439 | 2 | .040 |
| | REGDISTA | -38.925 | .552 | 2 | .759 |
| | REGORIGI | -39.309 | 1.320 | 3 | .724 |
| | ETHNIC | -41.083 | 4.868 | 1 | .027 |
| | GENDER | -39.034 | .772 | 1 | .380 |
| | REGSPEND | -39.521 | 1.744 | 2 | .418 |
| | REGEDUCA | -39.182 | 1.066 | 2 | .587 |
| | REGINCOM | -39.891 | 2.485 | 2 | .289 |
| | REGAGE | -39.922 | 2.546 | 1 | .111 |
| | MARRIAGE | -38.677 | .056 | 1 | .813 |
| | UNDER | -39.173 | 1.049 | 1 | .306 |
| | PREVIOUS | -38.711 | .125 | 1 | .724 |
| Step 4 | ENTRY | -54.312 | 31.287 | 3 | .000 |
| | ENTRYDUR | -41.377 | 5.417 | 1 | .020 |
| | PLACE2RE | -41.544 | 5.751 | 3 | .124 |
| | TOTALDUR | -41.079 | 4.820 | 1 | .028 |
| | REGATTRA | -42.050 | 6.762 | 2 | .034 |
| | REGDISTA | -38.928 | .519 | 2 | .772 |
| | REGORIGI | -39.313 | 1.288 | 3 | .732 |
| | ETHNIC | -41.083 | 4.828 | 1 | .028 |
| | GENDER | -39.051 | .765 | 1 | .382 |
| | REGSPEND | -39.568 | 1.799 | 2 | .407 |
| | REGEDUCA | -39.228 | 1.119 | 2 | .571 |
| | REGINCOM | -40.145 | 2.953 | 2 | .228 |
| | REGAGE | -39.922 | 2.506 | 1 | .113 |
| | MARRIAGE | -38.691 | .045 | 1 | .832 |
| | UNDER | -39.224 | 1.111 | 1 | .292 |
| | PREVIOUS | -38.724 | .110 | 1 | .740 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 5 | ENTRY | -54.313 | 31.244 | 3 | .000 |
| | ENTRYDUR | -41.379 | 5.375 | 1 | .020 |
| | PLACE2RE | -41.655 | 5.927 | 3 | .115 |
| | TOTALDUR | -41.091 | 4.799 | 1 | .028 |
| | REGATTRA | -42.052 | 6.721 | 2 | .035 |
| | REGDISTA | -38.957 | .532 | 2 | .767 |
| | REGORIGI | -39.316 | 1.249 | 3 | .741 |
| | ETHNIC | -41.099 | 4.816 | 1 | .028 |
| | GENDER | -39.060 | .737 | 1 | .391 |
| | REGSPEND | -39.585 | 1.787 | 2 | .409 |
| | REGEDUCA | -39.244 | 1.105 | 2 | .576 |
| | REGINCOM | -40.205 | 3.027 | 2 | .220 |
| | REGAGE | -40.251 | 3.120 | 1 | .077 |
| | UNDER | -39.227 | 1.071 | 1 | .301 |
| | PREVIOUS | -38.747 | .111 | 1 | .739 |
| Step 6 | ENTRY | -54.434 | 30.954 | 3 | .000 |
| | ENTRYDUR | -41.518 | 5.123 | 1 | .024 |
| | PLACE2RE | -42.056 | 6.198 | 3 | .102 |
| | TOTALDUR | -41.250 | 4.586 | 1 | .032 |
| | REGATTRA | -42.332 | 6.750 | 2 | .034 |
| | REGORIGI | -39.620 | 1.326 | 3 | .723 |
| | ETHNIC | -41.146 | 4.378 | 1 | .036 |
| | GENDER | -39.318 | .721 | 1 | .396 |
| | REGSPEND | -39.923 | 1.931 | 2 | .381 |
| | REGEDUCA | -39.421 | .927 | 2 | .629 |
| | REGINCOM | -40.510 | 3.106 | 2 | .212 |
| | REGAGE | -40.620 | 3.326 | 1 | .068 |
| | UNDER | -39.427 | .940 | 1 | .332 |
| | PREVIOUS | -38.982 | .050 | 1 | .823 |
| Step 7 | ENTRY | -54.451 | 30.938 | 3 | .000 |
| | ENTRYDUR | -41.523 | 5.083 | 1 | .024 |
| | PLACE2RE | -42.058 | 6.152 | 3 | .104 |
| | TOTALDUR | -41.250 | 4.536 | 1 | .033 |
| | REGATTRA | -42.361 | 6.758 | 2 | .034 |
| | REGORIGI | -39.623 | 1.282 | 3 | .733 |
| | ETHNIC | -41.153 | 4.341 | 1 | .037 |
| | GENDER | -39.318 | .672 | 1 | .412 |
| | REGSPEND | -39.964 | 1.964 | 2 | .375 |
| | REGEDUCA | -39.438 | .912 | 2 | .634 |
| | REGINCOM | -40.517 | 3.069 | 2 | .216 |
| | REGAGE | -40.645 | 3.327 | 1 | .068 |
| | UNDER | -39.453 | .943 | 1 | .332 |
| Step 8 | ENTRY | -56.930 | 34.613 | 3 | .000 |
| | ENTRYDUR | -42.119 | 4.992 | 1 | .025 |
| | PLACE2RE | -42.453 | 5.659 | 3 | .129 |
| | TOTALDUR | -41.823 | 4.399 | 1 | .036 |
| | REGATTRA | -42.615 | 5.984 | 2 | .050 |
| | ETHNIC | -41.966 | 4.686 | 1 | .030 |
| | GENDER | -40.035 | .824 | 1 | .364 |
| | REGSPEND | -41.340 | 3.434 | 2 | .180 |
| | REGEDUCA | -40.332 | 1.418 | 2 | .492 |
| | REGINCOM | -41.121 | 2.996 | 2 | .224 |
| | REGAGE | -41.291 | 3.335 | 1 | .068 |
| | UNDER | -39.797 | .347 | 1 | .556 |
| Step 9 | ENTRY | -57.944 | 36.295 | 3 | .000 |
| | ENTRYDUR | -42.777 | 5.961 | 1 | .015 |
| | PLACE2RE | -42.565 | 5.537 | 3 | .136 |
| | TOTALDUR | -42.125 | 4.657 | 1 | .031 |
| | REGATTRA | -42.734 | 5.874 | 2 | .053 |
| | ETHNIC | -44.322 | 9.050 | 1 | .003 |
| | GENDER | -40.206 | .819 | 1 | .366 |
| | REGSPEND | -41.683 | 3.772 | 2 | .152 |
| | REGEDUCA | -40.378 | 1.162 | 2 | .559 |
| | REGINCOM | -41.421 | 3.249 | 2 | .197 |
| | REGAGE | -41.549 | 3.505 | 1 | .061 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 10 | ENTRY | -58.415 | 36.075 | 3 | .000 |
| | ENTRYDUR | -43.340 | 5.924 | 1 | .015 |
| | PLACE2RE | -43.064 | 5.373 | 3 | .146 |
| | TOTALDUR | -42.525 | 4.294 | 1 | .038 |
| | REGATTRA | -42.883 | 5.010 | 2 | .082 |
| | ETHNIC | -45.077 | 9.398 | 1 | .002 |
| | GENDER | -40.698 | .641 | 1 | .423 |
| | REGSPEND | -42.024 | 3.291 | 2 | .193 |
| | REGINCOM | -41.738 | 2.719 | 2 | .257 |
| | REGAGE | -42.129 | 3.502 | 1 | .061 |
| Step 11 | ENTRY | -58.416 | 35.435 | 3 | .000 |
| | ENTRYDUR | -43.831 | 6.265 | 1 | .012 |
| | PLACE2RE | -43.297 | 5.197 | 3 | .158 |
| | TOTALDUR | -42.813 | 4.229 | 1 | .040 |
| | REGATTRA | -42.964 | 4.531 | 2 | .104 |
| | ETHNIC | -45.854 | 10.311 | 1 | .001 |
| | REGSPEND | -42.104 | 2.812 | 2 | .245 |
| | REGINCOM | -41.758 | 2.120 | 2 | .346 |
| | REGAGE | -42.204 | 3.012 | 1 | .083 |
| Step 12 | ENTRY | -60.888 | 38.260 | 3 | .000 |
| | ENTRYDUR | -44.991 | 6.464 | 1 | .011 |
| | PLACE2RE | -44.357 | 5.197 | 3 | .158 |
| | TOTALDUR | -43.852 | 4.188 | 1 | .041 |
| | REGATTRA | -43.649 | 3.781 | 2 | .151 |
| | ETHNIC | -46.191 | 8.864 | 1 | .003 |
| | REGSPEND | -43.059 | 2.601 | 2 | .272 |
| | REGAGE | -43.222 | 2.928 | 1 | .087 |
| Step 13 | ENTRY | -63.260 | 40.402 | 3 | .000 |
| | ENTRYDUR | -46.720 | 7.323 | 1 | .007 |
| | PLACE2RE | -45.685 | 5.253 | 3 | .154 |
| | TOTALDUR | -45.488 | 4.858 | 1 | .028 |
| | REGATTRA | -44.556 | 2.994 | 2 | .224 |
| | ETHNIC | -46.770 | 7.422 | 1 | .006 |
| | REGAGE | -44.921 | 3.724 | 1 | .054 |
| Step 14 | ENTRY | -64.034 | 38.957 | 3 | .000 |
| | ENTRYDUR | -48.885 | 8.658 | 1 | .003 |
| | PLACE2RE | -46.513 | 3.914 | 3 | .271 |
| | TOTALDUR | -47.301 | 5.491 | 1 | .019 |
| | ETHNIC | -48.320 | 7.528 | 1 | .006 |
| | REGAGE | -46.107 | 3.102 | 1 | .078 |
| Step 15 | ENTRY | -68.014 | 43.003 | 3 | .000 |
| | ENTRYDUR | -50.500 | 7.976 | 1 | .005 |
| | TOTALDUR | -49.336 | 5.646 | 1 | .017 |
| | ETHNIC | -49.208 | 5.391 | 1 | .020 |
| | REGAGE | -47.739 | 2.452 | 1 | .117 |
| Step 16 | ENTRY | -68.362 | 41.246 | 3 | .000 |
| | ENTRYDUR | -51.927 | 8.376 | 1 | .004 |
| | TOTALDUR | -50.960 | 6.443 | 1 | .011 |
| | ETHNIC | -51.557 | 7.636 | 1 | .006 |

Variables not in the Equation[p]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 2[a] | Variables | HARMO | .016 | 1 | .898 |
| | Overall Statistics | | .016 | 1 | .898 |
| Step 3[b] | Variables | REGGROUP(1) | .055 | 1 | .814 |
| | | HARMO | .034 | 1 | .854 |
| | Overall Statistics | | .072 | 2 | .965 |
| Step 4[c] | Variables | REDTRANS(1) | .041 | 1 | .840 |
| | | REGGROUP(1) | .031 | 1 | .861 |
| | | HARMO | .021 | 1 | .884 |
| | Overall Statistics | | .111 | 3 | .990 |

Variables not in the Equation[p]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 5[d] | Variables | REDTRANS(1) | .029 | 1 | .864 |
| | | REGGROUP(1) | .021 | 1 | .885 |
| | | MARRIAGE(1) | .045 | 1 | .832 |
| | | HARMO | .027 | 1 | .869 |
| | Overall Statistics | | .156 | 4 | .997 |
| Step 6[e] | Variables | REDTRANS(1) | .003 | 1 | .957 |
| | | REGGROUP(1) | .004 | 1 | .948 |
| | | REGDISTA | .522 | 2 | .770 |
| | | REGDISTA(1) | .486 | 1 | .486 |
| | | REGDISTA(2) | .214 | 1 | .644 |
| | | MARRIAGE(1) | .058 | 1 | .809 |
| | | HARMO | .017 | 1 | .895 |
| | Overall Statistics | | .672 | 6 | .995 |
| Step 7[f] | Variables | REDTRANS(1) | .001 | 1 | .974 |
| | | REGGROUP(1) | .000 | 1 | .996 |
| | | REGDISTA | .467 | 2 | .792 |
| | | REGDISTA(1) | .448 | 1 | .503 |
| | | REGDISTA(2) | .217 | 1 | .642 |
| | | MARRIAGE(1) | .057 | 1 | .812 |
| | | HARMO | .039 | 1 | .844 |
| | | PREVIOUS | .051 | 1 | .821 |
| | Overall Statistics | | .719 | 7 | .998 |
| Step 8[g] | Variables | REDTRANS(1) | .001 | 1 | .978 |
| | | REGGROUP(1) | .003 | 1 | .953 |
| | | REGDISTA | .572 | 2 | .751 |
| | | REGDISTA(1) | .532 | 1 | .466 |
| | | REGDISTA(2) | .257 | 1 | .612 |
| | | REGORIGI | 1.282 | 3 | .733 |
| | | REGORIGI(1) | .070 | 1 | .791 |
| | | REGORIGI(2) | .869 | 1 | .351 |
| | | REGORIGI(3) | .031 | 1 | .860 |
| | | MARRIAGE(1) | .025 | 1 | .874 |
| | | HARMO | .013 | 1 | .908 |
| | | PREVIOUS | .007 | 1 | .936 |
| | Overall Statistics | | 2.013 | 10 | .996 |
| Step 9[h] | Variables | REDTRANS(1) | .006 | 1 | .940 |
| | | REGGROUP(1) | .003 | 1 | .955 |
| | | REGDISTA | .354 | 2 | .838 |
| | | REGDISTA(1) | .285 | 1 | .594 |
| | | REGDISTA(2) | .104 | 1 | .747 |
| | | REGORIGI | .694 | 3 | .875 |
| | | REGORIGI(1) | .118 | 1 | .732 |
| | | REGORIGI(2) | .544 | 1 | .461 |
| | | REGORIGI(3) | .003 | 1 | .960 |
| | | MARRIAGE(1) | .006 | 1 | .936 |
| | | UNDER | .346 | 1 | .556 |
| | | HARMO | .005 | 1 | .943 |
| | | PREVIOUS | .015 | 1 | .902 |
| | Overall Statistics | | 2.373 | 11 | .997 |
| Step 10[i] | Variables | REDTRANS(1) | .033 | 1 | .856 |
| | | REGGROUP(1) | .020 | 1 | .888 |
| | | REGDISTA | .363 | 2 | .834 |
| | | REGDISTA(1) | .290 | 1 | .590 |
| | | REGDISTA(2) | .098 | 1 | .755 |
| | | REGORIGI | 1.190 | 3 | .755 |
| | | REGORIGI(1) | .120 | 1 | .729 |
| | | REGORIGI(2) | 1.071 | 1 | .301 |
| | | REGORIGI(3) | .131 | 1 | .717 |
| | | REGEDUCA | 1.197 | 2 | .550 |
| | | REGEDUCA(1) | .163 | 1 | .686 |
| | | REGEDUCA(2) | .333 | 1 | .564 |
| | | MARRIAGE(1) | .026 | 1 | .873 |
| | | UNDER | .091 | 1 | .763 |
| | | HARMO | .077 | 1 | .781 |
| | | PREVIOUS | .003 | 1 | .954 |
| | Overall Statistics | | 3.652 | 13 | .994 |

Variables not in the Equation[p]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 11[j] | Variables | REDTRANS(1) | .050 | 1 | .822 |
| | | REGGROUP(1) | .063 | 1 | .802 |
| | | REGDISTA | .453 | 2 | .797 |
| | | REGDISTA(1) | .348 | 1 | .555 |
| | | REGDISTA(2) | .101 | 1 | .750 |
| | | REGORIGI | 1.236 | 3 | .744 |
| | | REGORIGI(1) | .099 | 1 | .753 |
| | | REGORIGI(2) | 1.137 | 1 | .286 |
| | | REGORIGI(3) | .210 | 1 | .647 |
| | | GENDER(1) | .631 | 1 | .427 |
| | | REGEDUCA | 1.011 | 2 | .603 |
| | | REGEDUCA(1) | .144 | 1 | .704 |
| | | REGEDUCA(2) | .269 | 1 | .604 |
| | | MARRIAGE(1) | .009 | 1 | .922 |
| | | UNDER | .098 | 1 | .755 |
| | | HARMO | .049 | 1 | .825 |
| | | PREVIOUS | .012 | 1 | .915 |
| | Overall Statistics | | 4.335 | 14 | .993 |
| Step 12[k] | Variables | REDTRANS(1) | .423 | 1 | .515 |
| | | REGGROUP(1) | .103 | 1 | .749 |
| | | REGDISTA | .513 | 2 | .774 |
| | | REGDISTA(1) | .274 | 1 | .600 |
| | | REGDISTA(2) | .032 | 1 | .859 |
| | | REGORIGI | 1.055 | 3 | .788 |
| | | REGORIGI(1) | .469 | 1 | .493 |
| | | REGORIGI(2) | .879 | 1 | .348 |
| | | REGORIGI(3) | .000 | 1 | .987 |
| | | GENDER(1) | .042 | 1 | .838 |
| | | REGEDUCA | .616 | 2 | .735 |
| | | REGEDUCA(1) | .003 | 1 | .958 |
| | | REGEDUCA(2) | .373 | 1 | .541 |
| | | REGINCOM | 2.030 | 2 | .362 |
| | | REGINCOM(1) | .720 | 1 | .396 |
| | | REGINCOM(2) | .602 | 1 | .438 |
| | | MARRIAGE(1) | .035 | 1 | .852 |
| | | UNDER | .293 | 1 | .588 |
| | | HARMO | .095 | 1 | .758 |
| | | PREVIOUS | .023 | 1 | .881 |
| | Overall Statistics | | 5.935 | 16 | .989 |
| Step 13[l] | Variables | REDTRANS(1) | .504 | 1 | .478 |
| | | REGGROUP(1) | .414 | 1 | .520 |
| | | REGDISTA | .468 | 2 | .791 |
| | | REGDISTA(1) | .141 | 1 | .708 |
| | | REGDISTA(2) | .000 | 1 | .988 |
| | | REGORIGI | 1.735 | 3 | .629 |
| | | REGORIGI(1) | .498 | 1 | .480 |
| | | REGORIGI(2) | .922 | 1 | .337 |
| | | REGORIGI(3) | .114 | 1 | .735 |
| | | GENDER(1) | .029 | 1 | .865 |
| | | REGSPEND | 2.757 | 2 | .252 |
| | | REGSPEND(1) | .718 | 1 | .397 |
| | | REGSPEND(2) | 2.648 | 1 | .104 |
| | | REGEDUCA | .330 | 2 | .848 |
| | | REGEDUCA(1) | .009 | 1 | .926 |
| | | REGEDUCA(2) | .164 | 1 | .685 |
| | | REGINCOM | 1.834 | 2 | .400 |
| | | REGINCOM(1) | 1.032 | 1 | .310 |
| | | REGINCOM(2) | .222 | 1 | .637 |
| | | MARRIAGE(1) | .032 | 1 | .858 |
| | | UNDER | .514 | 1 | .474 |
| | | HARMO | .195 | 1 | .659 |
| | | PREVIOUS | .021 | 1 | .884 |
| | Overall Statistics | | 8.500 | 18 | .970 |

Variables not in the Equation[p]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 14[m] | Variables | REDTRANS(1) | .726 | 1 | .394 |
| | | REGGROUP(1) | .679 | 1 | .410 |
| | | REGATTRA | 3.197 | 2 | .202 |
| | | REGATTRA(1) | 3.003 | 1 | .083 |
| | | REGATTRA(2) | 1.741 | 1 | .187 |
| | | REGDISTA | .127 | 2 | .939 |
| | | REGDISTA(1) | .075 | 1 | .785 |
| | | REGDISTA(2) | .010 | 1 | .919 |
| | | REGORIGI | 1.027 | 3 | .795 |
| | | REGORIGI(1) | .644 | 1 | .422 |
| | | REGORIGI(2) | .377 | 1 | .539 |
| | | REGORIGI(3) | .235 | 1 | .628 |
| | | GENDER(1) | .116 | 1 | .733 |
| | | REGSPEND | 1.927 | 2 | .382 |
| | | REGSPEND(1) | .147 | 1 | .701 |
| | | REGSPEND(2) | 1.910 | 1 | .167 |
| | | REGEDUCA | .162 | 2 | .922 |
| | | REGEDUCA(1) | .008 | 1 | .930 |
| | | REGEDUCA(2) | .073 | 1 | .787 |
| | | REGINCOM | 1.415 | 2 | .493 |
| | | REGINCOM(1) | .630 | 1 | .427 |
| | | REGINCOM(2) | .277 | 1 | .599 |
| | | MARRIAGE(1) | .002 | 1 | .967 |
| | | UNDER | .441 | 1 | .507 |
| | | HARMO | .125 | 1 | .724 |
| | | PREVIOUS | .048 | 1 | .826 |
| | Overall Statistics | | 11.477 | 20 | .933 |
| Step 15[n] | Variables | REDTRANS(1) | .130 | 1 | .719 |
| | | REGGROUP(1) | 1.493 | 1 | .222 |
| | | PLACE2RE | 4.131 | 3 | .248 |
| | | PLACE2RE(1) | 2.755 | 1 | .097 |
| | | PLACE2RE(2) | 2.834 | 1 | .092 |
| | | PLACE2RE(3) | .037 | 1 | .848 |
| | | REGATTRA | 1.775 | 2 | .412 |
| | | REGATTRA(1) | 1.600 | 1 | .206 |
| | | REGATTRA(2) | .845 | 1 | .358 |
| | | REGDISTA | .442 | 2 | .802 |
| | | REGDISTA(1) | .002 | 1 | .969 |
| | | REGDISTA(2) | .120 | 1 | .729 |
| | | REGORIGI | 1.378 | 3 | .711 |
| | | REGORIGI(1) | .846 | 1 | .358 |
| | | REGORIGI(2) | .101 | 1 | .751 |
| | | REGORIGI(3) | .776 | 1 | .378 |
| | | GENDER(1) | .100 | 1 | .752 |
| | | REGSPEND | 1.815 | 2 | .404 |
| | | REGSPEND(1) | .625 | 1 | .429 |
| | | REGSPEND(2) | 1.733 | 1 | .188 |
| | | REGEDUCA | .257 | 2 | .879 |
| | | REGEDUCA(1) | .058 | 1 | .809 |
| | | REGEDUCA(2) | .255 | 1 | .613 |
| | | REGINCOM | 1.505 | 2 | .471 |
| | | REGINCOM(1) | .559 | 1 | .455 |
| | | REGINCOM(2) | .354 | 1 | .552 |
| | | MARRIAGE(1) | .053 | 1 | .818 |
| | | UNDER | .407 | 1 | .524 |
| | | HARMO | .000 | 1 | .996 |
| | | PREVIOUS | .026 | 1 | .871 |
| | Overall Statistics | | 14.678 | 23 | .906 |

Variables not in the Equation[p]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 16[o] | Variables | REDTRANS(1) | .025 | 1 | .875 |
| | | REGGROUP(1) | 1.482 | 1 | .223 |
| | | PLACE2RE | 3.367 | 3 | .338 |
| | | PLACE2RE(1) | 2.692 | 1 | .101 |
| | | PLACE2RE(2) | 1.609 | 1 | .205 |
| | | PLACE2RE(3) | .026 | 1 | .871 |
| | | REGATTRA | 1.760 | 2 | .415 |
| | | REGATTRA(1) | 1.492 | 1 | .222 |
| | | REGATTRA(2) | .626 | 1 | .429 |
| | | REGDISTA | .617 | 2 | .735 |
| | | REGDISTA(1) | .000 | 1 | .987 |
| | | REGDISTA(2) | .178 | 1 | .673 |
| | | REGORIGI | 1.470 | 3 | .689 |
| | | REGORIGI(1) | .975 | 1 | .323 |
| | | REGORIGI(2) | .163 | 1 | .687 |
| | | REGORIGI(3) | .732 | 1 | .392 |
| | | GENDER(1) | .412 | 1 | .521 |
| | | REGSPEND | 2.277 | 2 | .320 |
| | | REGSPEND(1) | .306 | 1 | .580 |
| | | REGSPEND(2) | 2.276 | 1 | .131 |
| | | REGEDUCA | .148 | 2 | .929 |
| | | REGEDUCA(1) | .001 | 1 | .977 |
| | | REGEDUCA(2) | .093 | 1 | .760 |
| | | REGINCOM | 1.894 | 2 | .388 |
| | | REGINCOM(1) | .894 | 1 | .344 |
| | | REGINCOM(2) | .296 | 1 | .587 |
| | | REGAGE(1) | 2.446 | 1 | .118 |
| | | MARRIAGE(1) | .720 | 1 | .396 |
| | | UNDER | .395 | 1 | .530 |
| | | HARMO | .017 | 1 | .898 |
| | | PREVIOUS | .003 | 1 | .958 |
| | Overall Statistics | | 16.125 | 24 | .884 |

a. Variable(s) removed on step 2: HARMO.

b. Variable(s) removed on step 3: REGGROUP.

c. Variable(s) removed on step 4: REDTRANS.

d. Variable(s) removed on step 5: MARRIAGE.

e. Variable(s) removed on step 6: REGDISTA.

f. Variable(s) removed on step 7: PREVIOUS.

g. Variable(s) removed on step 8: REGORIGI.

h. Variable(s) removed on step 9: UNDER.

i. Variable(s) removed on step 10: REGEDUCA.

j. Variable(s) removed on step 11: GENDER.

k. Variable(s) removed on step 12: REGINCOM.

l. Variable(s) removed on step 13: REGSPEND.

m. Variable(s) removed on step 14: REGATTRA.

n. Variable(s) removed on step 15: PLACE2RE.

o. Variable(s) removed on step 16: REGAGE.

p. Adding the most significant variable will result in a model which duplicates a prior model.

```
        Step number: 1

        Observed Groups and Predicted Probabilities

 160 ô                                                      ô
     ó                                                      ó
     ó                                                      ó
     ó                                                      ó
 120 ô                                                      ô
     ó                                                      ó
     óO                                                     ó
     óO                                                     ó
  80 ôO                                                     ô
     óO                                                     ó
     óO                                                     ó
     óO                                                     ó
  40 ôO                                                     ô
     óO                                                     ó
     óOO                                                    ó
     óOOOOO O                                               ó
```

```
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75        1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.



             Step number: 2

             Observed Groups and Predicted Probabilities

       160 ô                                                            ô
           ó                                                            ó
           ó                                                            ó
F          ó                                                            ó
R      120 ô                                                            ô
E          ó                                                            ó
Q          óO                                                           ó
U          óO                                                           ó
E       80 ôO                                                           ô
N          óO                                                           ó
C          óO                                                           ó
Y          óO                                                           ó
        40 ôO                                                           ô
           óO                                                           ó
           óOO                                                          ó
           óOOOOO O                                                     ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75        1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.



             Step number: 3

             Observed Groups and Predicted Probabilities

       160 ô                                                            ô
           ó                                                            ó
           ó                                                            ó
F          ó                                                            ó
R      120 ô                                                            ô
E          ó                                                            ó
Q          óO                                                           ó
U          óO                                                           ó
E       80 ôO                                                           ô
N          óO                                                           ó
C          óO                                                           ó
Y          óO                                                           ó
        40 ôO                                                           ô
           óO                                                           ó
           óOO                                                          ó
           óOOOOO O          S                                          ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75        1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.



             Step number: 4

             Observed Groups and Predicted Probabilities

       160 ô                                                            ô
           ó                                                            ó
           ó                                                            ó
F          ó                                                            ó
R      120 ô                                                            ô
E          ó                                                            ó
Q          óO                                                           ó
U          óO                                                           ó
E       80 ôO                                                           ô
N          óO                                                           ó
C          óO                                                           ó
```

```
Y        ó0                                                                  ó
      40 ô0                                                                  ô
         ó0                                                                  ó
         ó00                                                                 ó
         ó00000                                                              ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75        1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.
```

```
            Step number: 5

            Observed Groups and Predicted Probabilities

     160 ô                                                                   ô
         ó                                                                   ó
         ó                                                                   ó
F        ó                                                                   ó
R    120 ô                                                                   ô
E        ó                                                                   ó
Q        ó0                                                                  ó
U        ó0                                                                  ó
E     80 ô0                                                                  ô
N        ó0                                                                  ó
C        ó0                                                                  ó
Y        ó0                                                                  ó
      40 ô0                                                                  ô
         ó0                                                                  ó
         ó00                                                                 ó
         ó00000                                                              ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75        1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.
```

```
            Step number: 6

            Observed Groups and Predicted Probabilities

     160 ô                                                                   ô
         ó                                                                   ó
         ó                                                                   ó
F        ó                                                                   ó
R    120 ô                                                                   ô
E        ó                                                                   ó
Q        ó0                                                                  ó
U        ó0                                                                  ó
E     80 ô0                                                                  ô
N        ó0                                                                  ó
C        ó0                                                                  ó
Y        ó0                                                                  ó
      40 ô0                                                                  ô
         ó0                                                                  ó
         ó00                                                                 ó
         ó000000                                                             ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75        1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.
```

```
            Step number: 7

            Observed Groups and Predicted Probabilities

     160 ô                                                                   ô
         ó                                                                   ó
         ó                                                                   ó
F        ó                                                                   ó
R    120 ô                                                                   ô
E        ó                                                                   ó
```

```
Q        óO                                                          ó
U        óO                                                          ó
E     80 ôO                                                          ô
N        óO                                                          ó
C        óO                                                          ó
Y        óO                                                          ó
      40 ôO                                                          ô
         óO                                                          ó
         óOO                                                         ó
         óOOOOO  O                                                   ó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5            .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.


             Step number: 8

             Observed Groups and Predicted Probabilities

     160 ô                                                           ô
         ó                                                           ó
         ó                                                           ó
F        ó                                                           ó
R    120 ô                                                           ô
E        ó                                                           ó
Q        óO                                                          ó
U        óO                                                          ó
E     80 ôO                                                          ô
N        óO                                                          ó
C        óO                                                          ó
Y        óO                                                          ó
      40 ôO                                                          ô
         óO                                                          ó
         óOOO                                                        ó
         óOOOOOOO O                                                  ó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5            .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.


             Step number: 9

             Observed Groups and Predicted Probabilities

     160 ô                                                           ô
         ó                                                           ó
         ó                                                           ó
F        ó                                                           ó
R    120 ô                                                           ô
E        ó                                                           ó
Q        óO                                                          ó
U        óO                                                          ó
E     80 ôO                                                          ô
N        óO                                                          ó
C        óO                                                          ó
Y        óO                                                          ó
      40 ôO                                                          ô
         óO                                                          ó
         óOO                                                         ó
         óOOOOOSO                                                    ó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0            .25            .5            .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.


             Step number: 10

             Observed Groups and Predicted Probabilities

     160 ô                                                           ô
```

```
            ó                                                            ó
            ó                                                            ó
F           ó                                                            ó
R      120  ô                                                            ô
E           ó                                                            ó
Q           óO                                                           ó
U           óO                                                           ó
E       80  ôO                                                           ô
N           óO                                                           ó
C           óO                                                           ó
Y           óO                                                           ó
        40  ôO                                                           ô
            óO                                                           ó
            óOOO                                                         ó
            óOOOO O O                                                    ó
Predicted   òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:     0            .25            .5            .75            1
  Group:    OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

            Predicted Probability is of Membership for Shanghai
            The Cut Value is .50
            Symbols: O - Others
                     S - Shanghai
            Each Symbol Represents 10 Cases.
```

```
               Step number: 11

               Observed Groups and Predicted Probabilities

       160  ô                                                            ô
            ó                                                            ó
            ó                                                            ó
F           ó                                                            ó
R      120  ô                                                            ô
E           ó                                                            ó
Q           óS                                                           ó
U           óO                                                           ó
E       80  ôO                                                           ô
N           óO                                                           ó
C           óO                                                           ó
Y           óO                                                           ó
        40  ôO                                                           ô
            óO                                                           ó
            óOOO                                                         ó
            óOOOO OO O                                                   ó
Predicted   òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:     0            .25            .5            .75            1
  Group:    OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

            Predicted Probability is of Membership for Shanghai
            The Cut Value is .50
            Symbols: O - Others
                     S - Shanghai
            Each Symbol Represents 10 Cases.
```

```
               Step number: 12

               Observed Groups and Predicted Probabilities

       160  ô                                                            ô
            ó                                                            ó
            ó                                                            ó
F           ó                                                            ó
R      120  ô                                                            ô
E           ó                                                            ó
Q           ó                                                            ó
U           óO                                                           ó
E       80  ôO                                                           ô
N           óO                                                           ó
C           óO                                                           ó
Y           óO                                                           ó
        40  ôO                                                           ô
            óOO                                                          ó
            óOO                                                          ó
            óOOOOOOO                                                     ó
Predicted   òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:     0            .25            .5            .75            1
  Group:    OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

            Predicted Probability is of Membership for Shanghai
            The Cut Value is .50
            Symbols: O - Others
                     S - Shanghai
            Each Symbol Represents 10 Cases.
```

```
          Step number: 13

          Observed Groups and Predicted Probabilities

    160 ô                                                            ô
        ó                                                            ó
        ó                                                            ó
F       ó                                                            ó
R   120 ô                                                            ô
E       ó                                                            ó
Q       ó                                                            ó
U       óO                                                           ó
E    80 ôO                                                           ô
N       óO                                                           ó
C       óO                                                           ó
Y       óO                                                           ó
     40 ôO                                                           ô
        óO                                                           ó
        óOOO  O                                                      ó
        óOOOOOO O                                                    ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75        1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.
```

```
          Step number: 14

          Observed Groups and Predicted Probabilities

    160 ô                                                            ô
        ó                                                            ó
        ó                                                            ó
F       ó                                                            ó
R   120 ô                                                            ô
E       ó                                                            ó
Q       ó                                                            ó
U       ó                                                            ó
E    80 ôO                                                           ô
N       óO                                                           ó
C       óO                                                           ó
Y       óO                                                           ó
     40 ôO                                                           ô
        óOO                                                          ó
        óOO O                                                        ó
        óOOOOOO OS                                                   ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75        1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.
```

```
          Step number: 15

          Observed Groups and Predicted Probabilities

     80 ôS                                                           ô
        óO                                                           ó
        óO                                                           ó
F       óO                                                           ó
R    60 ôO                                                           ô
E       óO                                                           ó
Q       óO                                                           ó
U       óO                                                           ó
E    40 ôO                                                           ô
N       óO                                                           ó
C       óO                                                           ó
Y       óO                                                           ó
     20 ôOO   O                                                      ô
        óOOO O                                                       ó
        óOOOOO  OO                                                   ó
        óOOOOOO OO  O  O   S   S                                     ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0         .25        .5         .75        1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 5 Cases.
```

```
          Step number: 16

          Observed Groups and Predicted Probabilities

     80 ô                                                            ô
        óS                                                           ó
        óO                                                           ó
F       óO                                                           ó
R    60 ôO                                                           ô
E       óO                                                           ó
Q       óO                                                           ó
U       óO                                                           ó
E    40 ôO                                                           ô
N       óO                                                           ó
C       óO                                                           ó
Y       óOO                                                          ó
     20 ôOO O                                                        ô
        óOO O  O                                                     ó
        óOOOOO O  O                                                  ó
        óOOOOO O OO   S    O                                         ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0           .25           .5           .75           1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 5 Cases.
```

Casewise List[b]

| Case | Selected Status[a] | Observed | Predicted | Predicted Group | Temporary Variable | |
|---|---|---|---|---|---|---|
| | | Shanghai vs. Others | | | Resid | ZResid |
| 4 | S | S** | .009 | O | .991 | 10.526 |
| 95 | S | S** | .027 | O | .973 | 6.024 |
| 124 | S | S** | .016 | O | .984 | 7.789 |
| 194 | S | S** | .005 | O | .995 | 14.660 |
| 195 | S | S** | .129 | O | .871 | 2.600 |

a. S = Selected, U = Unselected cases, and ** = Misclassified cases.

b. Cases with studentized residuals greater than 2.000 are listed.

# b. Logit II (2): Shanghai vs. Others (deleted case 95,124)

Case Processing Summary

| Unweighted Cases[a] | | N | Percent |
|---|---|---|---|
| Selected Cases | Included in Analysis | 209 | 99.1 |
| | Missing Cases | 2 | .9 |
| | Total | 211 | 100.0 |
| Unselected Cases | | 0 | .0 |
| Total | | 211 | 100.0 |

a. If weight is in effect, see classification table for the total number of cases.

## Dependent Variable Encoding

| Original Value | Internal Value |
|---|---|
| Others | 0 |
| Shanghai | 1 |

Categorical Variables Codings

| | | | Parameter coding | | |
|---|---|---|---|---|---|
| | | Frequency | (1) | (2) | (3) |
| Place of origins, regrouped | Americas | 55 | 1.000 | .000 | .000 |
| | UK | 47 | .000 | 1.000 | .000 |
| | Japan | 60 | .000 | .000 | 1.000 |
| | GCR | 47 | .000 | .000 | .000 |
| Entry point | Beijing | 104 | 1.000 | .000 | .000 |
| | Shanghai | 52 | .000 | 1.000 | .000 |
| | Guangzhou | 23 | .000 | .000 | 1.000 |
| | Others | 30 | .000 | .000 | .000 |
| 2nd place visited, region | No 2nd place | 62 | 1.000 | .000 | .000 |
| | Gateways | 39 | .000 | 1.000 | .000 |
| | Same region | 89 | .000 | .000 | 1.000 |
| | Other region | 19 | .000 | .000 | .000 |
| Income level, regrouped | Below US$30000 | 84 | 1.000 | .000 | |
| | US$30000-40000 | 26 | .000 | 1.000 | |
| | Above US$40000 | 99 | .000 | .000 | |
| Final level of education, regrouped | high school and below | 47 | 1.000 | .000 | |
| | Undergraduate/College | 89 | .000 | 1.000 | |
| | Postgraduate and above | 73 | .000 | .000 | |
| Trip expense, regrouped | below US$800 | 60 | 1.000 | .000 | |
| | US$800-1000 | 29 | .000 | 1.000 | |
| | above US$1000 | 120 | .000 | .000 | |
| Attractiveness of main destination, regrouped | very much | 157 | 1.000 | .000 | |
| | neutral | 39 | .000 | 1.000 | |
| | not much | 13 | .000 | .000 | |
| Geographic distance, regrouped | far | 87 | 1.000 | .000 | |
| | medium | 110 | .000 | 1.000 | |
| | not far | 12 | .000 | .000 | |
| Type of travel group, regrouped | Package | 129 | 1.000 | | |
| | Family/Friends/alone | 80 | .000 | | |
| Marital status | Single | 67 | 1.000 | | |
| | Married | 142 | .000 | | |
| Age categories, regrouped | Below 44 | 87 | 1.000 | | |
| | above 45 | 122 | .000 | | |
| Gender | Male | 119 | 1.000 | | |
| | Female | 90 | .000 | | |
| Ethnic Chinese | Yes | 54 | 1.000 | | |
| | No | 155 | .000 | | |
| Transport of arrival, regrouped | Air | 188 | 1.000 | | |
| | Rail/Sea/Motor/Foot | 21 | .000 | | |

# Block 0: Beginning Block

Iteration History[a,b,c]

| Iteration | | -2 Log likelihood | Coefficients Constant |
|---|---|---|---|
| Step 0 | 1 | 144.125 | -1.598 |
| | 2 | 136.557 | -2.082 |
| | 3 | 136.324 | -2.187 |
| | 4 | 136.324 | -2.192 |

a. Constant is included in the model.

b. Initial -2 Log Likelihood: 136.324

c. Estimation terminated at iteration number 4 because log-likelihood decreased by less than .010 percent.

Classification Table[a,b]

| | Observed | | Predicted: Shanghai vs. Others: Others | Predicted: Shanghai vs. Others: Shanghai | Percentage Correct |
|---|---|---|---|---|---|
| Step 0 | Shanghai vs. Others | Others | 188 | 0 | 100.0 |
| | | Shanghai | 21 | 0 | .0 |
| | Overall Percentage | | | | 90.0 |

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 0 | Constant | -2.192 | .230 | 90.757 | 1 | .000 | .112 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 0 | Variables | REDTRANS(1) | .007 | 1 | .933 |
| | | PREVIOUS | .831 | 1 | .362 |
| | | REGGROUP(1) | .862 | 1 | .353 |
| | | ENTRY | 34.868 | 3 | .000 |
| | | ENTRY(1) | 15.119 | 1 | .000 |
| | | ENTRY(2) | 32.885 | 1 | .000 |
| | | ENTRY(3) | 2.887 | 1 | .089 |
| | | ENTRYDUR | 1.769 | 1 | .183 |
| | | PLACE2RE | .823 | 3 | .844 |
| | | PLACE2RE(1) | .013 | 1 | .908 |
| | | PLACE2RE(2) | .408 | 1 | .523 |
| | | PLACE2RE(3) | .001 | 1 | .979 |
| | | TOTALDUR | .874 | 1 | .350 |
| | | REGATTRA | 3.316 | 2 | .191 |
| | | REGATTRA(1) | 2.182 | 1 | .140 |
| | | REGATTRA(2) | 3.311 | 1 | .069 |
| | | REGDISTA | 5.360 | 2 | .069 |
| | | REGDISTA(1) | 4.898 | 1 | .027 |
| | | REGDISTA(2) | 5.197 | 1 | .023 |
| | | REGORIGI | 8.949 | 3 | .030 |
| | | REGORIGI(1) | 5.593 | 1 | .018 |
| | | REGORIGI(2) | .901 | 1 | .342 |
| | | REGORIGI(3) | 4.079 | 1 | .043 |
| | | ETHNIC(1) | 5.780 | 1 | .016 |
| | | GENDER(1) | .198 | 1 | .657 |
| | | REGSPEND | 4.219 | 2 | .121 |
| | | REGSPEND(1) | .274 | 1 | .601 |
| | | REGSPEND(2) | 4.219 | 1 | .040 |
| | | REGEDUCA | .427 | 2 | .808 |
| | | REGEDUCA(1) | .023 | 1 | .878 |
| | | REGEDUCA(2) | .242 | 1 | .623 |
| | | REGINCOM | 7.939 | 2 | .019 |
| | | REGINCOM(1) | .536 | 1 | .464 |
| | | REGINCOM(2) | 5.577 | 1 | .018 |
| | | REGAGE(1) | .015 | 1 | .904 |
| | | MARRIAGE(1) | .017 | 1 | .895 |
| | | UNDER | 10.007 | 1 | .002 |
| | | HARMO | .017 | 1 | .896 |
| | Overall Statistics | | 76.407 | 30 | .000 |

# Block 1: Method = Backward Stepwise (Likelihood Ratio)

Omnibus Tests of Model Coefficients

| | | Chi-square | df | Sig. |
|---|---|---|---|---|
| Step 1 | Step | 87.406 | 30 | .000 |
| | Block | 87.406 | 30 | .000 |
| | Model | 87.406 | 30 | .000 |
| Step 2[a] | Step | -.222 | 1 | .638 |
| | Block | 87.184 | 29 | .000 |
| | Model | 87.184 | 29 | .000 |
| Step 3[a] | Step | -1.236 | 2 | .539 |
| | Block | 85.948 | 27 | .000 |
| | Model | 85.948 | 28 | .000 |
| Step 4[a] | Step | -.820 | 1 | .365 |
| | Block | 85.128 | 26 | .000 |
| | Model | 85.128 | 26 | .000 |
| Step 5[a] | Step | -2.772 | 3 | .428 |
| | Block | 82.356 | 23 | .000 |
| | Model | 82.356 | 25 | .000 |
| Step 6[a] | Step | -.417 | 1 | .518 |
| | Block | 81.939 | 22 | .000 |
| | Model | 81.939 | 22 | .000 |
| Step 7[a] | Step | -.728 | 1 | .393 |
| | Block | 81.211 | 21 | .000 |
| | Model | 81.211 | 21 | .000 |
| Step 8[a] | Step | -.919 | 1 | .338 |
| | Block | 80.292 | 20 | .000 |
| | Model | 80.292 | 20 | .000 |
| Step 9[a] | Step | -2.273 | 2 | .321 |
| | Block | 78.019 | 18 | .000 |
| | Model | 78.019 | 19 | .000 |
| Step 10[a] | Step | -1.843 | 2 | .398 |
| | Block | 76.175 | 16 | .000 |
| | Model | 76.175 | 17 | .000 |
| Step 11[a] | Step | -.945 | 1 | .331 |
| | Block | 75.230 | 15 | .000 |
| | Model | 75.230 | 15 | .000 |
| Step 12[a] | Step | -3.487 | 3 | .322 |
| | Block | 71.743 | 12 | .000 |
| | Model | 71.743 | 14 | .000 |
| Step 13[a] | Step | -.557 | 1 | .456 |
| | Block | 71.187 | 11 | .000 |
| | Model | 71.187 | 11 | .000 |
| Step 14[a] | Step | -2.709 | 2 | .258 |
| | Block | 68.478 | 9 | .000 |
| | Model | 68.478 | 10 | .000 |

a. A negative Chi-squares value indicates that the Chi-squares value has decreased from the previous step.

Model Summary

| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|---|
| 1 | 48.918 | .342 | .713 |
| 2 | 49.139 | .341 | .712 |
| 3 | 50.376 | .337 | .704 |
| 4 | 51.196 | .335 | .698 |
| 5 | 53.967 | .326 | .680 |
| 6 | 54.385 | .324 | .677 |
| 7 | 55.113 | .322 | .672 |
| 8 | 56.032 | .319 | .666 |
| 9 | 58.305 | .312 | .650 |
| 10 | 60.148 | .305 | .637 |
| 11 | 61.094 | .302 | .631 |
| 12 | 64.580 | .291 | .606 |
| 13 | 65.137 | .289 | .602 |
| 14 | 67.845 | .279 | .583 |

Hosmer and Lemeshow Test

| Step | Chi-square | df | Sig. |
|---|---|---|---|
| 1 | 1.844 | 8 | .985 |
| 2 | 2.893 | 8 | .941 |
| 3 | 2.414 | 8 | .966 |
| 4 | 10.664 | 8 | .221 |
| 5 | 10.678 | 8 | .221 |
| 6 | 26.588 | 8 | .001 |
| 7 | 27.613 | 8 | .001 |
| 8 | 27.870 | 8 | .000 |
| 9 | 30.977 | 8 | .000 |
| 10 | 28.910 | 8 | .000 |
| 11 | 23.028 | 8 | .003 |
| 12 | 21.248 | 8 | .007 |
| 13 | 55.453 | 8 | .000 |
| 14 | 48.783 | 8 | .000 |

Contingency Table for Hosmer and Lemeshow Test

| | | Shanghai vs. Others = Others | | Shanghai vs. Others = Shanghai | | Total |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | |
| Step 1 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 21.000 | 0 | .000 | 21 |
| | 3 | 21 | 21.000 | 0 | .000 | 21 |
| | 4 | 21 | 21.000 | 0 | .000 | 21 |
| | 5 | 21 | 20.996 | 0 | .004 | 21 |
| | 6 | 21 | 20.978 | 0 | .022 | 21 |
| | 7 | 21 | 20.875 | 0 | .125 | 21 |
| | 8 | 19 | 20.102 | 2 | .898 | 21 |
| | 9 | 16 | 16.067 | 5 | 4.933 | 21 |
| | 10 | 6 | 4.982 | 14 | 15.018 | 20 |
| Step 2 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 21.000 | 0 | .000 | 21 |
| | 3 | 21 | 20.999 | 0 | .001 | 21 |
| | 4 | 21 | 20.997 | 0 | .003 | 21 |
| | 5 | 21 | 20.987 | 0 | .013 | 21 |
| | 6 | 21 | 20.938 | 0 | .062 | 21 |
| | 7 | 20 | 20.774 | 1 | .226 | 21 |
| | 8 | 20 | 19.749 | 1 | 1.251 | 21 |
| | 9 | 17 | 16.482 | 4 | 4.518 | 21 |
| | 10 | 5 | 5.072 | 15 | 14.928 | 20 |
| Step 3 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 21.000 | 0 | .000 | 21 |
| | 3 | 21 | 20.999 | 0 | .001 | 21 |
| | 4 | 21 | 20.996 | 0 | .004 | 21 |
| | 5 | 21 | 20.984 | 0 | .016 | 21 |
| | 6 | 21 | 20.931 | 0 | .069 | 21 |
| | 7 | 20 | 20.743 | 1 | .257 | 21 |
| | 8 | 20 | 19.760 | 1 | 1.240 | 21 |
| | 9 | 17 | 16.422 | 4 | 4.578 | 21 |
| | 10 | 5 | 5.164 | 15 | 14.836 | 20 |
| Step 4 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 21.000 | 0 | .000 | 21 |
| | 3 | 21 | 20.999 | 0 | .001 | 21 |
| | 4 | 21 | 20.995 | 0 | .005 | 21 |
| | 5 | 21 | 20.982 | 0 | .018 | 21 |
| | 6 | 21 | 21.917 | 1 | .083 | 22 |
| | 7 | 21 | 20.741 | 0 | .259 | 21 |
| | 8 | 20 | 19.556 | 1 | 1.444 | 21 |
| | 9 | 16 | 16.012 | 5 | 4.988 | 21 |
| | 10 | 5 | 4.798 | 14 | 14.202 | 19 |

Contingency Table for Hosmer and Lemeshow Test

| | | Shanghai vs. Others = Others | | Shanghai vs. Others = Shanghai | | |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | Total |
| Step 5 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 21.000 | 0 | .000 | 21 |
| | 3 | 21 | 20.999 | 0 | .001 | 21 |
| | 4 | 21 | 20.995 | 0 | .005 | 21 |
| | 5 | 21 | 20.981 | 0 | .019 | 21 |
| | 6 | 21 | 21.917 | 1 | .083 | 22 |
| | 7 | 21 | 20.742 | 0 | .258 | 21 |
| | 8 | 20 | 19.563 | 1 | 1.437 | 21 |
| | 9 | 16 | 16.000 | 5 | 5.000 | 21 |
| | 10 | 5 | 4.802 | 14 | 14.198 | 19 |
| Step 6 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 20.999 | 0 | .001 | 21 |
| | 3 | 21 | 20.997 | 0 | .003 | 21 |
| | 4 | 21 | 20.985 | 0 | .015 | 21 |
| | 5 | 20 | 20.963 | 1 | .037 | 21 |
| | 6 | 21 | 20.855 | 0 | .145 | 21 |
| | 7 | 21 | 20.569 | 0 | .431 | 21 |
| | 8 | 19 | 19.479 | 2 | 1.521 | 21 |
| | 9 | 18 | 16.433 | 3 | 4.567 | 21 |
| | 10 | 5 | 5.719 | 15 | 14.281 | 20 |
| Step 7 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 20.999 | 0 | .001 | 21 |
| | 3 | 21 | 20.996 | 0 | .004 | 21 |
| | 4 | 21 | 20.983 | 0 | .017 | 21 |
| | 5 | 20 | 20.961 | 1 | .039 | 21 |
| | 6 | 21 | 20.851 | 0 | .149 | 21 |
| | 7 | 20 | 20.562 | 1 | .438 | 21 |
| | 8 | 21 | 19.475 | 0 | 1.525 | 21 |
| | 9 | 18 | 16.498 | 3 | 4.502 | 21 |
| | 10 | 4 | 5.673 | 16 | 14.327 | 20 |
| Step 8 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 21.000 | 0 | .000 | 21 |
| | 3 | 21 | 20.997 | 0 | .003 | 21 |
| | 4 | 21 | 20.986 | 0 | .014 | 21 |
| | 5 | 20 | 20.963 | 1 | .037 | 21 |
| | 6 | 21 | 20.859 | 0 | .141 | 21 |
| | 7 | 20 | 20.555 | 1 | .445 | 21 |
| | 8 | 21 | 19.473 | 0 | 1.527 | 21 |
| | 9 | 17 | 16.380 | 4 | 4.620 | 21 |
| | 10 | 5 | 5.788 | 15 | 14.212 | 20 |
| Step 9 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 20.999 | 0 | .001 | 21 |
| | 3 | 21 | 20.997 | 0 | .003 | 21 |
| | 4 | 21 | 20.986 | 0 | .014 | 21 |
| | 5 | 20 | 20.965 | 1 | .035 | 21 |
| | 6 | 21 | 20.857 | 0 | .143 | 21 |
| | 7 | 20 | 20.535 | 1 | .465 | 21 |
| | 8 | 21 | 19.492 | 0 | 1.508 | 21 |
| | 9 | 18 | 16.324 | 3 | 4.676 | 21 |
| | 10 | 4 | 5.843 | 16 | 14.157 | 20 |
| Step 10 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 20.999 | 0 | .001 | 21 |
| | 3 | 21 | 20.996 | 0 | .004 | 21 |
| | 4 | 21 | 20.983 | 0 | .017 | 21 |
| | 5 | 20 | 20.957 | 1 | .043 | 21 |
| | 6 | 20 | 20.852 | 1 | .148 | 21 |
| | 7 | 21 | 20.525 | 0 | .475 | 21 |
| | 8 | 21 | 19.494 | 0 | 1.506 | 21 |
| | 9 | 17 | 16.055 | 4 | 4.945 | 21 |
| | 10 | 5 | 6.137 | 15 | 13.863 | 20 |

Contingency Table for Hosmer and Lemeshow Test

| | | Shanghai vs. Others = Others | | Shanghai vs. Others = Shanghai | | |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | Total |
| Step 11 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 20.999 | 0 | .001 | 21 |
| | 3 | 21 | 20.996 | 0 | .004 | 21 |
| | 4 | 21 | 20.979 | 0 | .021 | 21 |
| | 5 | 21 | 20.939 | 0 | .061 | 21 |
| | 6 | 19 | 20.832 | 2 | .168 | 21 |
| | 7 | 21 | 20.475 | 0 | .525 | 21 |
| | 8 | 21 | 19.557 | 0 | 1.443 | 21 |
| | 9 | 17 | 15.859 | 4 | 5.141 | 21 |
| | 10 | 5 | 6.362 | 15 | 13.638 | 20 |
| Step 12 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 22 | 21.999 | 0 | .001 | 22 |
| | 3 | 21 | 20.996 | 0 | .004 | 21 |
| | 4 | 21 | 20.974 | 0 | .026 | 21 |
| | 5 | 21 | 20.934 | 0 | .066 | 21 |
| | 6 | 19 | 20.810 | 2 | .190 | 21 |
| | 7 | 21 | 20.454 | 0 | .546 | 21 |
| | 8 | 21 | 19.496 | 0 | 1.504 | 21 |
| | 9 | 17 | 15.387 | 4 | 5.613 | 21 |
| | 10 | 4 | 5.949 | 15 | 13.051 | 19 |
| Step 13 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 20.998 | 0 | .002 | 21 |
| | 3 | 21 | 20.994 | 0 | .006 | 21 |
| | 4 | 21 | 20.980 | 0 | .020 | 21 |
| | 5 | 19 | 20.929 | 2 | .071 | 21 |
| | 6 | 21 | 20.777 | 0 | .223 | 21 |
| | 7 | 21 | 20.414 | 0 | .586 | 21 |
| | 8 | 20 | 19.207 | 1 | 1.793 | 21 |
| | 9 | 18 | 15.946 | 3 | 5.054 | 21 |
| | 10 | 5 | 6.756 | 15 | 13.244 | 20 |
| Step 14 | 1 | 20 | 20.000 | 0 | .000 | 20 |
| | 2 | 21 | 20.996 | 0 | .004 | 21 |
| | 3 | 21 | 20.989 | 0 | .011 | 21 |
| | 4 | 20 | 20.975 | 1 | .025 | 21 |
| | 5 | 21 | 21.884 | 1 | .116 | 22 |
| | 6 | 21 | 20.736 | 0 | .264 | 21 |
| | 7 | 21 | 20.171 | 0 | .829 | 21 |
| | 8 | 20 | 18.985 | 1 | 2.015 | 21 |
| | 9 | 18 | 16.130 | 3 | 4.870 | 21 |
| | 10 | 5 | 7.132 | 15 | 12.868 | 20 |

Classification Table[a]

| Observed | | | Predicted: Shanghai vs. Others: Others | Shanghai | Percentage Correct |
|---|---|---|---|---|---|
| Step 1 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 7 | 14 | 66.7 |
| | Overall Percentage | | | | 95.7 |
| Step 2 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 7 | 14 | 66.7 |
| | Overall Percentage | | | | 95.7 |
| Step 3 | Shanghai vs. Others | Others | 185 | 3 | 98.4 |
| | | Shanghai | 7 | 14 | 66.7 |
| | Overall Percentage | | | | 95.2 |
| Step 4 | Shanghai vs. Others | Others | 184 | 4 | 97.9 |
| | | Shanghai | 6 | 15 | 71.4 |
| | Overall Percentage | | | | 95.2 |
| Step 5 | Shanghai vs. Others | Others | 185 | 3 | 98.4 |
| | | Shanghai | 7 | 14 | 66.7 |
| | Overall Percentage | | | | 95.2 |
| Step 6 | Shanghai vs. Others | Others | 184 | 4 | 97.9 |
| | | Shanghai | 7 | 14 | 66.7 |
| | Overall Percentage | | | | 94.7 |
| Step 7 | Shanghai vs. Others | Others | 183 | 5 | 97.3 |
| | | Shanghai | 6 | 15 | 71.4 |
| | Overall Percentage | | | | 94.7 |
| Step 8 | Shanghai vs. Others | Others | 185 | 3 | 98.4 |
| | | Shanghai | 6 | 15 | 71.4 |
| | Overall Percentage | | | | 95.7 |
| Step 9 | Shanghai vs. Others | Others | 185 | 3 | 98.4 |
| | | Shanghai | 9 | 12 | 57.1 |
| | Overall Percentage | | | | 94.3 |
| Step 10 | Shanghai vs. Others | Others | 185 | 3 | 98.4 |
| | | Shanghai | 9 | 12 | 57.1 |
| | Overall Percentage | | | | 94.3 |
| Step 11 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 9 | 12 | 57.1 |
| | Overall Percentage | | | | 94.7 |
| Step 12 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 8 | 13 | 61.9 |
| | Overall Percentage | | | | 95.2 |
| Step 13 | Shanghai vs. Others | Others | 187 | 1 | 99.5 |
| | | Shanghai | 9 | 12 | 57.1 |
| | Overall Percentage | | | | 95.2 |
| Step 14 | Shanghai vs. Others | Others | 186 | 2 | 98.9 |
| | | Shanghai | 9 | 12 | 57.1 |
| | Overall Percentage | | | | 94.7 |

a. The cut value is .500

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 1[a] | REDTRANS(1) | -3.172 | 2.599 | 1.490 | 1 | .222 | .042 |
| | PREVIOUS | -.031 | .069 | .200 | 1 | .654 | .969 |
| | REGGROUP(1) | 1.703 | 1.559 | 1.193 | 1 | .275 | 5.490 |
| | ENTRY | | | 12.448 | 3 | .006 | |
| | ENTRY(1) | -2.763 | 2.417 | 1.307 | 1 | .253 | .063 |
| | ENTRY(2) | 5.632 | 2.159 | 6.807 | 1 | .009 | 279.348 |
| | ENTRY(3) | -18.803 | 37.665 | .249 | 1 | .618 | .000 |
| | ENTRYDUR | .345 | .230 | 2.251 | 1 | .134 | 1.413 |
| | PLACE2RE | | | 2.969 | 3 | .396 | |
| | PLACE2RE(1) | -.732 | 3.019 | .059 | 1 | .808 | .481 |
| | PLACE2RE(2) | 2.183 | 2.555 | .730 | 1 | .393 | 8.875 |
| | PLACE2RE(3) | 2.218 | 2.430 | .833 | 1 | .361 | 9.192 |
| | TOTALDUR | -.258 | .175 | 2.165 | 1 | .141 | .773 |
| | REGATTRA | | | 3.687 | 2 | .158 | |
| | REGATTRA(1) | -1.712 | 3.932 | .189 | 1 | .663 | .181 |
| | REGATTRA(2) | 1.413 | 3.788 | .139 | 1 | .709 | 4.107 |
| | REGDISTA | | | 5.065 | 2 | .079 | |
| | REGDISTA(1) | -3.806 | 2.742 | 1.928 | 1 | .165 | .022 |
| | REGDISTA(2) | -5.776 | 2.715 | 4.526 | 1 | .033 | .003 |
| | REGORIGI | | | 5.336 | 3 | .149 | |
| | REGORIGI(1) | .938 | 3.078 | .093 | 1 | .761 | 2.555 |
| | REGORIGI(2) | 6.089 | 3.940 | 2.388 | 1 | .122 | 440.819 |
| | REGORIGI(3) | 6.099 | 2.862 | 4.543 | 1 | .033 | 445.542 |
| | ETHNIC(1) | 6.074 | 2.353 | 6.665 | 1 | .010 | 434.204 |
| | GENDER(1) | 1.231 | 1.215 | 1.028 | 1 | .311 | 3.426 |
| | REGSPEND | | | 1.257 | 2 | .533 | |
| | REGSPEND(1) | -.037 | 2.048 | .000 | 1 | .986 | .964 |
| | REGSPEND(2) | 1.585 | 1.414 | 1.257 | 1 | .262 | 4.879 |
| | REGEDUCA | | | 2.294 | 2 | .318 | |
| | REGEDUCA(1) | -2.493 | 1.841 | 1.833 | 1 | .176 | .083 |
| | REGEDUCA(2) | -2.905 | 1.940 | 2.241 | 1 | .134 | .055 |
| | REGINCOM | | | 3.403 | 2 | .182 | |
| | REGINCOM(1) | 4.182 | 2.276 | 3.378 | 1 | .066 | 65.513 |
| | REGINCOM(2) | 1.862 | 1.739 | 1.145 | 1 | .285 | 6.434 |
| | REGAGE(1) | 2.759 | 1.682 | 2.689 | 1 | .101 | 15.782 |
| | MARRIAGE(1) | 1.938 | 1.578 | 1.509 | 1 | .219 | 6.942 |
| | UNDER | -1.535 | .903 | 2.891 | 1 | .089 | .216 |
| | HARMO | -2.014 | 1.332 | 2.288 | 1 | .130 | .133 |
| | Constant | -6.619 | 5.770 | 1.316 | 1 | .251 | .001 |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 2[a] | REDTRANS(1) | -2.752 | 2.267 | 1.473 | 1 | .225 | .064 |
| | REGGROUP(1) | 1.608 | 1.512 | 1.130 | 1 | .288 | 4.992 |
| | ENTRY | | | 12.580 | 3 | .006 | |
| | ENTRY(1) | -3.067 | 2.313 | 1.758 | 1 | .185 | .047 |
| | ENTRY(2) | 5.430 | 2.033 | 7.136 | 1 | .008 | 228.157 |
| | ENTRY(3) | -18.696 | 37.565 | .248 | 1 | .619 | .000 |
| | ENTRYDUR | .328 | .214 | 2.355 | 1 | .125 | 1.389 |
| | PLACE2RE | | | 2.996 | 3 | .392 | |
| | PLACE2RE(1) | -.573 | 3.017 | .036 | 1 | .849 | .564 |
| | PLACE2RE(2) | 2.136 | 2.594 | .678 | 1 | .410 | 8.466 |
| | PLACE2RE(3) | 2.300 | 2.477 | .862 | 1 | .353 | 9.975 |
| | TOTALDUR | -.254 | .165 | 2.352 | 1 | .125 | .776 |
| | REGATTRA | | | 3.929 | 2 | .140 | |
| | REGATTRA(1) | -2.113 | 3.719 | .323 | 1 | .570 | .121 |
| | REGATTRA(2) | 1.150 | 3.622 | .101 | 1 | .751 | 3.160 |
| | REGDISTA | | | 5.017 | 2 | .081 | |
| | REGDISTA(1) | -3.581 | 2.695 | 1.767 | 1 | .184 | .028 |
| | REGDISTA(2) | -5.511 | 2.621 | 4.421 | 1 | .036 | .004 |
| | REGORIGI | | | 5.831 | 3 | .120 | |
| | REGORIGI(1) | 1.157 | 2.996 | .149 | 1 | .699 | 3.181 |
| | REGORIGI(2) | 6.306 | 3.841 | 2.694 | 1 | .101 | 547.607 |
| | REGORIGI(3) | 6.351 | 2.783 | 5.209 | 1 | .022 | 573.250 |
| | ETHNIC(1) | 5.967 | 2.284 | 6.827 | 1 | .009 | 390.525 |
| | GENDER(1) | 1.416 | 1.173 | 1.457 | 1 | .227 | 4.122 |
| | REGSPEND | | | 1.182 | 2 | .554 | |
| | REGSPEND(1) | -.198 | 1.912 | .011 | 1 | .917 | .820 |
| | REGSPEND(2) | 1.446 | 1.335 | 1.174 | 1 | .279 | 4.246 |
| | REGEDUCA | | | 2.572 | 2 | .276 | |
| | REGEDUCA(1) | -2.474 | 1.804 | 1.879 | 1 | .170 | .084 |
| | REGEDUCA(2) | -2.954 | 1.849 | 2.553 | 1 | .110 | .052 |
| | REGINCOM | | | 4.216 | 2 | .121 | |
| | REGINCOM(1) | 4.516 | 2.200 | 4.214 | 1 | .040 | 91.497 |
| | REGINCOM(2) | 1.942 | 1.733 | 1.256 | 1 | .262 | 6.972 |
| | REGAGE(1) | 2.697 | 1.605 | 2.823 | 1 | .093 | 14.836 |
| | MARRIAGE(1) | 1.949 | 1.492 | 1.707 | 1 | .191 | 7.020 |
| | UNDER | -1.539 | .899 | 2.928 | 1 | .087 | .215 |
| | HARMO | -2.232 | 1.283 | 3.027 | 1 | .082 | .107 |
| | Constant | -7.176 | 5.641 | 1.618 | 1 | .203 | .001 |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 3[a] | REDTRANS(1) | -2.407 | 1.943 | 1.534 | 1 | .216 | .090 |
| | REGGROUP(1) | 1.063 | 1.208 | .775 | 1 | .379 | 2.896 |
| | ENTRY | | | 12.600 | 3 | .006 | |
| | ENTRY(1) | -3.458 | 2.151 | 2.584 | 1 | .108 | .032 |
| | ENTRY(2) | 5.073 | 1.882 | 7.262 | 1 | .007 | 159.638 |
| | ENTRY(3) | -19.067 | 37.743 | .255 | 1 | .613 | .000 |
| | ENTRYDUR | .362 | .220 | 2.703 | 1 | .100 | 1.436 |
| | PLACE2RE | | | 2.791 | 3 | .425 | |
| | PLACE2RE(1) | -1.513 | 2.759 | .301 | 1 | .583 | .220 |
| | PLACE2RE(2) | 1.346 | 2.339 | .331 | 1 | .565 | 3.842 |
| | PLACE2RE(3) | 1.497 | 2.239 | .447 | 1 | .504 | 4.468 |
| | TOTALDUR | -.276 | .170 | 2.632 | 1 | .105 | .759 |
| | REGATTRA | | | 4.347 | 2 | .114 | |
| | REGATTRA(1) | -2.247 | 3.257 | .476 | 1 | .490 | .106 |
| | REGATTRA(2) | .893 | 3.204 | .078 | 1 | .780 | 2.443 |
| | REGDISTA | | | 5.179 | 2 | .075 | |
| | REGDISTA(1) | -4.018 | 2.722 | 2.179 | 1 | .140 | .018 |
| | REGDISTA(2) | -5.543 | 2.579 | 4.621 | 1 | .032 | .004 |
| | REGORIGI | | | 6.945 | 3 | .074 | |
| | REGORIGI(1) | 1.999 | 2.692 | .551 | 1 | .458 | 7.382 |
| | REGORIGI(2) | 7.465 | 3.628 | 4.233 | 1 | .040 | 1745.532 |
| | REGORIGI(3) | 6.852 | 2.669 | 6.594 | 1 | .010 | 946.209 |
| | ETHNIC(1) | 6.347 | 2.362 | 7.219 | 1 | .007 | 570.897 |
| | GENDER(1) | 1.014 | 1.071 | .897 | 1 | .344 | 2.758 |
| | REGEDUCA | | | 2.332 | 2 | .312 | |
| | REGEDUCA(1) | -2.229 | 1.735 | 1.651 | 1 | .199 | .108 |
| | REGEDUCA(2) | -2.519 | 1.656 | 2.312 | 1 | .128 | .081 |
| | REGINCOM | | | 5.052 | 2 | .080 | |
| | REGINCOM(1) | 4.712 | 2.102 | 5.027 | 1 | .025 | 111.272 |
| | REGINCOM(2) | 1.781 | 1.658 | 1.153 | 1 | .283 | 5.935 |
| | REGAGE(1) | 2.598 | 1.535 | 2.864 | 1 | .091 | 13.437 |
| | MARRIAGE(1) | 1.972 | 1.449 | 1.854 | 1 | .173 | 7.188 |
| | UNDER | -1.561 | .847 | 3.400 | 1 | .065 | .210 |
| | HARMO | -2.123 | 1.211 | 3.073 | 1 | .080 | .120 |
| | Constant | -6.246 | 4.910 | 1.618 | 1 | .203 | .002 |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 4[a] | REDTRANS(1) | -2.080 | 1.852 | 1.262 | 1 | .261 | .125 |
| | ENTRY | | | 12.715 | 3 | .005 | |
| | ENTRY(1) | -3.032 | 1.989 | 2.324 | 1 | .127 | .048 |
| | ENTRY(2) | 4.963 | 1.884 | 6.941 | 1 | .008 | 142.990 |
| | ENTRY(3) | -18.601 | 38.030 | .239 | 1 | .625 | .000 |
| | ENTRYDUR | .369 | .219 | 2.831 | 1 | .092 | 1.446 |
| | PLACE2RE | | | 2.463 | 3 | .482 | |
| | PLACE2RE(1) | -1.904 | 2.625 | .526 | 1 | .468 | .149 |
| | PLACE2RE(2) | .562 | 2.067 | .074 | 1 | .786 | 1.754 |
| | PLACE2RE(3) | .973 | 2.032 | .229 | 1 | .632 | 2.647 |
| | TOTALDUR | -.275 | .174 | 2.518 | 1 | .113 | .759 |
| | REGATTRA | | | 4.393 | 2 | .111 | |
| | REGATTRA(1) | -1.511 | 2.915 | .268 | 1 | .604 | .221 |
| | REGATTRA(2) | 1.569 | 2.920 | .289 | 1 | .591 | 4.800 |
| | REGDISTA | | | 4.201 | 2 | .122 | |
| | REGDISTA(1) | -4.165 | 2.759 | 2.279 | 1 | .131 | .016 |
| | REGDISTA(2) | -5.201 | 2.624 | 3.930 | 1 | .047 | .006 |
| | REGORIGI | | | 6.536 | 3 | .088 | |
| | REGORIGI(1) | 2.239 | 2.616 | .732 | 1 | .392 | 9.385 |
| | REGORIGI(2) | 7.316 | 3.497 | 4.376 | 1 | .036 | 1503.845 |
| | REGORIGI(3) | 6.345 | 2.587 | 6.015 | 1 | .014 | 569.743 |
| | ETHNIC(1) | 6.243 | 2.358 | 7.008 | 1 | .008 | 514.247 |
| | GENDER(1) | .814 | 1.014 | .645 | 1 | .422 | 2.258 |
| | REGEDUCA | | | 2.167 | 2 | .338 | |
| | REGEDUCA(1) | -2.116 | 1.712 | 1.526 | 1 | .217 | .121 |
| | REGEDUCA(2) | -2.353 | 1.608 | 2.141 | 1 | .143 | .095 |
| | REGINCOM | | | 4.824 | 2 | .090 | |
| | REGINCOM(1) | 4.471 | 2.036 | 4.823 | 1 | .028 | 87.440 |
| | REGINCOM(2) | 1.942 | 1.624 | 1.430 | 1 | .232 | 6.970 |
| | REGAGE(1) | 2.704 | 1.553 | 3.032 | 1 | .082 | 14.945 |
| | MARRIAGE(1) | 1.708 | 1.387 | 1.518 | 1 | .218 | 5.520 |
| | UNDER | -1.334 | .792 | 2.837 | 1 | .092 | .263 |
| | HARMO | -1.756 | 1.139 | 2.379 | 1 | .123 | .173 |
| | Constant | -5.818 | 4.678 | 1.547 | 1 | .214 | .003 |
| Step 5[a] | REDTRANS(1) | -1.220 | 1.748 | .487 | 1 | .485 | .295 |
| | ENTRY | | | 13.501 | 3 | .004 | |
| | ENTRY(1) | -3.941 | 1.877 | 4.407 | 1 | .036 | .019 |
| | ENTRY(2) | 4.238 | 1.669 | 6.452 | 1 | .011 | 69.287 |
| | ENTRY(3) | -18.611 | 38.776 | .230 | 1 | .631 | .000 |
| | ENTRYDUR | .175 | .138 | 1.593 | 1 | .207 | 1.191 |
| | TOTALDUR | -.159 | .111 | 2.053 | 1 | .152 | .853 |
| | REGATTRA | | | 4.634 | 2 | .099 | |
| | REGATTRA(1) | -1.555 | 2.389 | .424 | 1 | .515 | .211 |
| | REGATTRA(2) | 1.142 | 2.387 | .229 | 1 | .632 | 3.133 |
| | REGDISTA | | | 2.984 | 2 | .225 | |
| | REGDISTA(1) | -3.114 | 2.588 | 1.448 | 1 | .229 | .044 |
| | REGDISTA(2) | -4.013 | 2.418 | 2.754 | 1 | .097 | .018 |
| | REGORIGI | | | 5.814 | 3 | .121 | |
| | REGORIGI(1) | 1.642 | 2.386 | .474 | 1 | .491 | 5.166 |
| | REGORIGI(2) | 5.431 | 3.013 | 3.248 | 1 | .072 | 228.292 |
| | REGORIGI(3) | 5.546 | 2.392 | 5.377 | 1 | .020 | 256.278 |
| | ETHNIC(1) | 4.886 | 2.116 | 5.333 | 1 | .021 | 132.378 |
| | GENDER(1) | .604 | .943 | .410 | 1 | .522 | 1.829 |
| | REGEDUCA | | | 2.963 | 2 | .227 | |
| | REGEDUCA(1) | -2.210 | 1.595 | 1.920 | 1 | .166 | .110 |
| | REGEDUCA(2) | -2.658 | 1.545 | 2.957 | 1 | .086 | .070 |
| | REGINCOM | | | 4.699 | 2 | .095 | |
| | REGINCOM(1) | 3.889 | 1.795 | 4.692 | 1 | .030 | 48.848 |
| | REGINCOM(2) | 1.243 | 1.336 | .865 | 1 | .352 | 3.466 |
| | REGAGE(1) | 2.640 | 1.433 | 3.394 | 1 | .065 | 14.013 |
| | MARRIAGE(1) | 1.247 | 1.261 | .978 | 1 | .323 | 3.479 |
| | UNDER | -1.280 | .797 | 2.576 | 1 | .109 | .278 |
| | HARMO | -1.805 | 1.078 | 2.804 | 1 | .094 | .164 |
| | Constant | -4.758 | 3.786 | 1.579 | 1 | .209 | .009 |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 6[a] | REDTRANS(1) | -1.479 | 1.753 | .713 | 1 | .399 | .228 |
| | ENTRY | | | 14.901 | 3 | .002 | |
| | ENTRY(1) | -3.814 | 1.800 | 4.492 | 1 | .034 | .022 |
| | ENTRY(2) | 3.960 | 1.598 | 6.141 | 1 | .013 | 52.443 |
| | ENTRY(3) | -18.256 | 39.326 | .216 | 1 | .642 | .000 |
| | ENTRYDUR | .190 | .134 | 2.009 | 1 | .156 | 1.210 |
| | TOTALDUR | -.163 | .113 | 2.089 | 1 | .148 | .850 |
| | REGATTRA | | | 4.684 | 2 | .096 | |
| | REGATTRA(1) | -1.227 | 2.327 | .278 | 1 | .598 | .293 |
| | REGATTRA(2) | 1.286 | 2.393 | .289 | 1 | .591 | 3.617 |
| | REGDISTA | | | 2.863 | 2 | .239 | |
| | REGDISTA(1) | -2.915 | 2.483 | 1.378 | 1 | .240 | .054 |
| | REGDISTA(2) | -3.759 | 2.302 | 2.667 | 1 | .102 | .023 |
| | REGORIGI | | | 5.709 | 3 | .127 | |
| | REGORIGI(1) | 1.771 | 2.374 | .556 | 1 | .456 | 5.878 |
| | REGORIGI(2) | 5.365 | 2.986 | 3.228 | 1 | .072 | 213.695 |
| | REGORIGI(3) | 5.218 | 2.294 | 5.172 | 1 | .023 | 184.518 |
| | ETHNIC(1) | 4.772 | 2.123 | 5.051 | 1 | .025 | 118.135 |
| | REGEDUCA | | | 2.824 | 2 | .244 | |
| | REGEDUCA(1) | -1.996 | 1.511 | 1.745 | 1 | .187 | .136 |
| | REGEDUCA(2) | -2.417 | 1.440 | 2.816 | 1 | .093 | .089 |
| | REGINCOM | | | 4.841 | 2 | .089 | |
| | REGINCOM(1) | 3.427 | 1.567 | 4.786 | 1 | .029 | 30.788 |
| | REGINCOM(2) | 1.129 | 1.333 | .717 | 1 | .397 | 3.091 |
| | REGAGE(1) | 2.449 | 1.401 | 3.055 | 1 | .080 | 11.572 |
| | MARRIAGE(1) | 1.129 | 1.203 | .880 | 1 | .348 | 3.093 |
| | UNDER | -1.217 | .770 | 2.496 | 1 | .114 | .296 |
| | HARMO | -1.658 | .996 | 2.774 | 1 | .096 | .190 |
| | Constant | -4.137 | 3.677 | 1.265 | 1 | .261 | .016 |
| Step 7[a] | ENTRY | | | 15.211 | 3 | .002 | |
| | ENTRY(1) | -4.309 | 1.733 | 6.179 | 1 | .013 | .013 |
| | ENTRY(2) | 3.421 | 1.364 | 6.291 | 1 | .012 | 30.588 |
| | ENTRY(3) | -16.882 | 40.230 | .176 | 1 | .675 | .000 |
| | ENTRYDUR | .181 | .139 | 1.697 | 1 | .193 | 1.198 |
| | TOTALDUR | -.157 | .116 | 1.810 | 1 | .179 | .855 |
| | REGATTRA | | | 5.149 | 2 | .076 | |
| | REGATTRA(1) | -1.410 | 2.146 | .432 | 1 | .511 | .244 |
| | REGATTRA(2) | 1.137 | 2.196 | .268 | 1 | .604 | 3.118 |
| | REGDISTA | | | 2.550 | 2 | .279 | |
| | REGDISTA(1) | -2.574 | 2.372 | 1.178 | 1 | .278 | .076 |
| | REGDISTA(2) | -3.333 | 2.160 | 2.381 | 1 | .123 | .036 |
| | REGORIGI | | | 5.459 | 3 | .141 | |
| | REGORIGI(1) | 1.645 | 2.329 | .499 | 1 | .480 | 5.180 |
| | REGORIGI(2) | 5.149 | 2.934 | 3.080 | 1 | .079 | 172.272 |
| | REGORIGI(3) | 4.990 | 2.254 | 4.901 | 1 | .027 | 146.905 |
| | ETHNIC(1) | 4.856 | 2.137 | 5.165 | 1 | .023 | 128.495 |
| | REGEDUCA | | | 2.717 | 2 | .257 | |
| | REGEDUCA(1) | -1.899 | 1.508 | 1.587 | 1 | .208 | .150 |
| | REGEDUCA(2) | -2.317 | 1.406 | 2.717 | 1 | .099 | .099 |
| | REGINCOM | | | 5.999 | 2 | .050 | |
| | REGINCOM(1) | 3.792 | 1.552 | 5.971 | 1 | .015 | 44.352 |
| | REGINCOM(2) | 1.415 | 1.326 | 1.138 | 1 | .286 | 4.115 |
| | REGAGE(1) | 2.071 | 1.230 | 2.834 | 1 | .092 | 7.936 |
| | MARRIAGE(1) | 1.111 | 1.185 | .879 | 1 | .349 | 3.037 |
| | UNDER | -1.174 | .742 | 2.505 | 1 | .113 | .309 |
| | HARMO | -1.599 | .991 | 2.603 | 1 | .107 | .202 |
| | Constant | -5.362 | 3.322 | 2.606 | 1 | .106 | .005 |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 8[a] | ENTRY | | | 15.954 | 3 | .001 | |
| | ENTRY(1) | -3.796 | 1.554 | 5.968 | 1 | .015 | .022 |
| | ENTRY(2) | 3.500 | 1.359 | 6.636 | 1 | .010 | 33.117 |
| | ENTRY(3) | -16.291 | 40.460 | .162 | 1 | .687 | .000 |
| | ENTRYDUR | .171 | .136 | 1.582 | 1 | .208 | 1.187 |
| | TOTALDUR | -.140 | .108 | 1.683 | 1 | .194 | .870 |
| | REGATTRA | | | 4.984 | 2 | .083 | |
| | REGATTRA(1) | -.805 | 2.290 | .124 | 1 | .725 | .447 |
| | REGATTRA(2) | 1.651 | 2.378 | .482 | 1 | .488 | 5.210 |
| | REGDISTA | | | 2.272 | 2 | .321 | |
| | REGDISTA(1) | -2.165 | 2.276 | .904 | 1 | .342 | .115 |
| | REGDISTA(2) | -3.050 | 2.126 | 2.057 | 1 | .152 | .047 |
| | REGORIGI | | | 5.154 | 3 | .161 | |
| | REGORIGI(1) | 1.290 | 2.272 | .322 | 1 | .570 | 3.632 |
| | REGORIGI(2) | 4.429 | 2.710 | 2.672 | 1 | .102 | 83.887 |
| | REGORIGI(3) | 4.561 | 2.138 | 4.551 | 1 | .033 | 95.666 |
| | ETHNIC(1) | 4.541 | 2.027 | 5.020 | 1 | .025 | 93.818 |
| | REGEDUCA | | | 2.938 | 2 | .230 | |
| | REGEDUCA(1) | -1.915 | 1.506 | 1.617 | 1 | .203 | .147 |
| | REGEDUCA(2) | -2.480 | 1.447 | 2.936 | 1 | .087 | .084 |
| | REGINCOM | | | 6.048 | 2 | .049 | |
| | REGINCOM(1) | 3.713 | 1.513 | 6.024 | 1 | .014 | 40.975 |
| | REGINCOM(2) | 1.231 | 1.282 | .921 | 1 | .337 | 3.423 |
| | REGAGE(1) | 2.494 | 1.193 | 4.372 | 1 | .037 | 12.107 |
| | UNDER | -1.094 | .725 | 2.274 | 1 | .132 | .335 |
| | HARMO | -1.356 | .901 | 2.267 | 1 | .132 | .258 |
| | Constant | -5.693 | 3.423 | 2.766 | 1 | .096 | .003 |
| Step 9[a] | ENTRY | | | 16.998 | 3 | .001 | |
| | ENTRY(1) | -3.662 | 1.506 | 5.911 | 1 | .015 | .026 |
| | ENTRY(2) | 3.074 | 1.262 | 5.938 | 1 | .015 | 21.630 |
| | ENTRY(3) | -11.563 | 28.721 | .162 | 1 | .687 | .000 |
| | ENTRYDUR | .200 | .141 | 2.008 | 1 | .157 | 1.222 |
| | TOTALDUR | -.145 | .108 | 1.803 | 1 | .179 | .865 |
| | REGATTRA | | | 4.673 | 2 | .097 | |
| | REGATTRA(1) | -.556 | 2.164 | .066 | 1 | .797 | .573 |
| | REGATTRA(2) | 1.664 | 2.261 | .542 | 1 | .462 | 5.279 |
| | REGORIGI | | | 3.778 | 3 | .286 | |
| | REGORIGI(1) | 1.485 | 2.351 | .399 | 1 | .528 | 4.416 |
| | REGORIGI(2) | 3.932 | 2.593 | 2.299 | 1 | .129 | 50.990 |
| | REGORIGI(3) | 3.242 | 1.851 | 3.067 | 1 | .080 | 25.594 |
| | ETHNIC(1) | 3.792 | 1.895 | 4.005 | 1 | .045 | 44.353 |
| | REGEDUCA | | | 1.715 | 2 | .424 | |
| | REGEDUCA(1) | -1.002 | 1.272 | .620 | 1 | .431 | .367 |
| | REGEDUCA(2) | -1.483 | 1.136 | 1.704 | 1 | .192 | .227 |
| | REGINCOM | | | 5.502 | 2 | .064 | |
| | REGINCOM(1) | 2.950 | 1.266 | 5.433 | 1 | .020 | 19.105 |
| | REGINCOM(2) | 1.364 | 1.205 | 1.282 | 1 | .258 | 3.912 |
| | REGAGE(1) | 2.028 | 1.033 | 3.853 | 1 | .050 | 7.595 |
| | UNDER | -.792 | .654 | 1.467 | 1 | .226 | .453 |
| | HARMO | -.804 | .705 | 1.300 | 1 | .254 | .448 |
| | Constant | -7.443 | 3.326 | 5.008 | 1 | .025 | .001 |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 10[a] | ENTRY | | | 16.962 | 3 | .001 | |
| | ENTRY(1) | -3.885 | 1.493 | 6.771 | 1 | .009 | .021 |
| | ENTRY(2) | 2.677 | 1.143 | 5.480 | 1 | .019 | 14.537 |
| | ENTRY(3) | -11.441 | 29.095 | .155 | 1 | .694 | .000 |
| | ENTRYDUR | .213 | .136 | 2.457 | 1 | .117 | 1.238 |
| | TOTALDUR | -.147 | .105 | 1.964 | 1 | .161 | .863 |
| | REGATTRA | | | 3.850 | 2 | .146 | |
| | REGATTRA(1) | -.751 | 1.841 | .167 | 1 | .683 | .472 |
| | REGATTRA(2) | 1.122 | 1.893 | .351 | 1 | .554 | 3.070 |
| | REGORIGI | | | 3.467 | 3 | .325 | |
| | REGORIGI(1) | 1.603 | 2.162 | .550 | 1 | .458 | 4.968 |
| | REGORIGI(2) | 4.072 | 2.519 | 2.613 | 1 | .106 | 58.679 |
| | REGORIGI(3) | 2.768 | 1.796 | 2.375 | 1 | .123 | 15.931 |
| | ETHNIC(1) | 4.012 | 1.910 | 4.414 | 1 | .036 | 55.285 |
| | REGINCOM | | | 5.379 | 2 | .068 | |
| | REGINCOM(1) | 2.839 | 1.225 | 5.370 | 1 | .020 | 17.104 |
| | REGINCOM(2) | 1.721 | 1.185 | 2.107 | 1 | .147 | 5.587 |
| | REGAGE(1) | 1.808 | .960 | 3.544 | 1 | .060 | 6.096 |
| | UNDER | -.576 | .598 | .927 | 1 | .336 | .562 |
| | HARMO | -.634 | .622 | 1.038 | 1 | .308 | .530 |
| | Constant | -7.619 | 3.150 | 5.852 | 1 | .016 | .000 |
| Step 11[a] | ENTRY | | | 17.288 | 3 | .001 | |
| | ENTRY(1) | -3.832 | 1.482 | 6.686 | 1 | .010 | .022 |
| | ENTRY(2) | 2.738 | 1.156 | 5.613 | 1 | .018 | 15.461 |
| | ENTRY(3) | -10.979 | 29.738 | .136 | 1 | .712 | .000 |
| | ENTRYDUR | .219 | .135 | 2.627 | 1 | .105 | 1.245 |
| | TOTALDUR | -.122 | .096 | 1.599 | 1 | .206 | .885 |
| | REGATTRA | | | 3.644 | 2 | .162 | |
| | REGATTRA(1) | -.172 | 1.948 | .008 | 1 | .930 | .842 |
| | REGATTRA(2) | 1.548 | 2.051 | .569 | 1 | .450 | 4.701 |
| | REGORIGI | | | 2.928 | 3 | .403 | |
| | REGORIGI(1) | .897 | 1.973 | .207 | 1 | .649 | 2.453 |
| | REGORIGI(2) | 2.994 | 2.168 | 1.907 | 1 | .167 | 19.967 |
| | REGORIGI(3) | 2.628 | 1.759 | 2.233 | 1 | .135 | 13.845 |
| | ETHNIC(1) | 4.342 | 1.845 | 5.538 | 1 | .019 | 76.844 |
| | REGINCOM | | | 5.099 | 2 | .078 | |
| | REGINCOM(1) | 2.605 | 1.154 | 5.098 | 1 | .024 | 13.531 |
| | REGINCOM(2) | 1.749 | 1.163 | 2.264 | 1 | .132 | 5.751 |
| | REGAGE(1) | 1.926 | .965 | 3.986 | 1 | .046 | 6.865 |
| | HARMO | -.633 | .611 | 1.071 | 1 | .301 | .531 |
| | Constant | -7.968 | 3.264 | 5.958 | 1 | .015 | .000 |
| Step 12[a] | ENTRY | | | 18.784 | 3 | .000 | |
| | ENTRY(1) | -3.919 | 1.378 | 8.087 | 1 | .004 | .020 |
| | ENTRY(2) | 2.631 | 1.026 | 6.577 | 1 | .010 | 13.884 |
| | ENTRY(3) | -11.028 | 30.321 | .132 | 1 | .716 | .000 |
| | ENTRYDUR | .262 | .124 | 4.505 | 1 | .034 | 1.300 |
| | TOTALDUR | -.136 | .071 | 3.660 | 1 | .056 | .872 |
| | REGATTRA | | | 2.898 | 2 | .235 | |
| | REGATTRA(1) | .323 | 1.795 | .032 | 1 | .857 | 1.382 |
| | REGATTRA(2) | 1.681 | 1.933 | .756 | 1 | .385 | 5.369 |
| | ETHNIC(1) | 2.205 | .960 | 5.282 | 1 | .022 | 9.073 |
| | REGINCOM | | | 5.439 | 2 | .066 | |
| | REGINCOM(1) | 2.349 | 1.026 | 5.238 | 1 | .022 | 10.476 |
| | REGINCOM(2) | 1.938 | 1.052 | 3.391 | 1 | .066 | 6.942 |
| | REGAGE(1) | 1.759 | .894 | 3.873 | 1 | .049 | 5.808 |
| | HARMO | -.410 | .574 | .511 | 1 | .475 | .663 |
| | Constant | -5.644 | 2.477 | 5.190 | 1 | .023 | .004 |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 13[a] | ENTRY | | | 19.779 | 3 | .000 | |
| | ENTRY(1) | -3.708 | 1.332 | 7.745 | 1 | .005 | .025 |
| | ENTRY(2) | 2.595 | 1.008 | 6.628 | 1 | .010 | 13.403 |
| | ENTRY(3) | -10.604 | 30.746 | .119 | 1 | .730 | .000 |
| | ENTRYDUR | .260 | .127 | 4.158 | 1 | .041 | 1.297 |
| | TOTALDUR | -.125 | .069 | 3.283 | 1 | .070 | .883 |
| | REGATTRA | | | 2.698 | 2 | .259 | |
| | REGATTRA(1) | .404 | 1.836 | .048 | 1 | .826 | 1.497 |
| | REGATTRA(2) | 1.674 | 1.967 | .724 | 1 | .395 | 5.333 |
| | ETHNIC(1) | 2.311 | .951 | 5.905 | 1 | .015 | 10.082 |
| | REGINCOM | | | 5.246 | 2 | .073 | |
| | REGINCOM(1) | 2.235 | 1.001 | 4.983 | 1 | .026 | 9.350 |
| | REGINCOM(2) | 1.926 | 1.042 | 3.413 | 1 | .065 | 6.859 |
| | REGAGE(1) | 1.651 | .865 | 3.642 | 1 | .056 | 5.213 |
| | Constant | -5.726 | 2.471 | 5.371 | 1 | .020 | .003 |
| Step 14[a] | ENTRY | | | 19.958 | 3 | .000 | |
| | ENTRY(1) | -3.792 | 1.307 | 8.415 | 1 | .004 | .023 |
| | ENTRY(2) | 2.342 | .946 | 6.130 | 1 | .013 | 10.407 |
| | ENTRY(3) | -10.833 | 31.096 | .121 | 1 | .728 | .000 |
| | ENTRYDUR | .254 | .111 | 5.235 | 1 | .022 | 1.289 |
| | TOTALDUR | -.134 | .071 | 3.599 | 1 | .058 | .874 |
| | ETHNIC(1) | 2.503 | .930 | 7.250 | 1 | .007 | 12.216 |
| | REGINCOM | | | 4.306 | 2 | .116 | |
| | REGINCOM(1) | 1.973 | .967 | 4.166 | 1 | .041 | 7.192 |
| | REGINCOM(2) | 1.598 | .996 | 2.576 | 1 | .109 | 4.943 |
| | REGAGE(1) | 1.383 | .815 | 2.881 | 1 | .090 | 3.985 |
| | Constant | -4.500 | 1.438 | 9.800 | 1 | .002 | .011 |

Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 1[a] | REDTRANS(1) | .000 | 6.833 |
| | PREVIOUS | .847 | 1.110 |
| | REGGROUP(1) | .259 | 116.554 |
| | ENTRY | | |
| | ENTRY(1) | .001 | 7.196 |
| | ENTRY(2) | 4.060 | 19220.044 |
| | ENTRY(3) | .000 | 7847901240269000000000000 |
| | ENTRYDUR | .900 | 2.218 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .001 | 178.398 |
| | PLACE2RE(2) | .059 | 1326.847 |
| | PLACE2RE(3) | .079 | 1076.407 |
| | TOTALDUR | .548 | 1.089 |
| | REGATTRA | | |
| | REGATTRA(1) | .000 | 401.529 |
| | REGATTRA(2) | .002 | 6885.295 |
| | REGDISTA | | |
| | REGDISTA(1) | .000 | 4.793 |
| | REGDISTA(2) | .000 | .635 |
| | REGORIGI | | |
| | REGORIGI(1) | .006 | 1065.161 |
| | REGORIGI(2) | .195 | 995176.384 |
| | REGORIGI(3) | 1.633 | 121561.226 |
| | ETHNIC(1) | 4.317 | 43673.180 |
| | GENDER(1) | .317 | 37.052 |
| | REGSPEND | | |
| | REGSPEND(1) | .017 | 53.369 |
| | REGSPEND(2) | .305 | 77.917 |
| | REGEDUCA | | |
| | REGEDUCA(1) | .002 | 3.051 |
| | REGEDUCA(2) | .001 | 2.455 |
| | REGINCOM | | |
| | REGINCOM(1) | .757 | 5667.368 |
| | REGINCOM(2) | .213 | 194.579 |
| | REGAGE(1) | .584 | 426.792 |
| | MARRIAGE(1) | .315 | 152.840 |
| | UNDER | .037 | 1.264 |
| | HARMO | .010 | 1.814 |
| | Constant | | |

Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 2[a] | REDTRANS(1) | .001 | 5.429 |
| | REGGROUP(1) | .258 | 96.758 |
| | ENTRY | | |
| | ENTRY(1) | .000 | 4.336 |
| | ENTRY(2) | 4.246 | 12260.275 |
| | ENTRY(3) | .000 | 7180864942855720000000000 |
| | ENTRYDUR | .913 | 2.112 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .002 | 208.406 |
| | PLACE2RE(2) | .052 | 1366.851 |
| | PLACE2RE(3) | .078 | 1279.598 |
| | TOTALDUR | .561 | 1.073 |
| | REGATTRA | | |
| | REGATTRA(1) | .000 | 176.883 |
| | REGATTRA(2) | .003 | 3823.938 |
| | REGDISTA | | |
| | REGDISTA(1) | .000 | 5.472 |
| | REGDISTA(2) | .000 | .688 |
| | REGORIGI | | |
| | REGORIGI(1) | .009 | 1129.545 |
| | REGORIGI(2) | .294 | 1019227.448 |
| | REGORIGI(3) | 2.453 | 133972.808 |
| | ETHNIC(1) | 4.442 | 34337.404 |
| | GENDER(1) | .413 | 41.102 |
| | REGSPEND | | |
| | REGSPEND(1) | .019 | 34.759 |
| | REGSPEND(2) | .310 | 58.090 |
| | REGEDUCA | | |
| | REGEDUCA(1) | .002 | 2.895 |
| | REGEDUCA(2) | .001 | 1.953 |
| | REGINCOM | | |
| | REGINCOM(1) | 1.227 | 6823.650 |
| | REGINCOM(2) | .234 | 208.021 |
| | REGAGE(1) | .638 | 344.949 |
| | MARRIAGE(1) | .377 | 130.596 |
| | UNDER | .037 | 1.251 |
| | HARMO | .009 | 1.326 |
| | Constant | | |

Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 3[a] | REDTRANS(1) | .002 | 4.063 |
| | REGGROUP(1) | .271 | 30.905 |
| | ENTRY | | |
| | ENTRY(1) | .000 | 2.135 |
| | ENTRY(2) | 3.988 | 6390.141 |
| | ENTRY(3) | .000 | 7017323216627600000000 |
| | ENTRYDUR | .933 | 2.212 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .001 | 49.148 |
| | PLACE2RE(2) | .039 | 376.285 |
| | PLACE2RE(3) | .056 | 359.679 |
| | TOTALDUR | .544 | 1.059 |
| | REGATTRA | | |
| | REGATTRA(1) | .000 | 62.508 |
| | REGATTRA(2) | .005 | 1302.803 |
| | REGDISTA | | |
| | REGDISTA(1) | .000 | 3.731 |
| | REGDISTA(2) | .000 | .613 |
| | REGORIGI | | |
| | REGORIGI(1) | .038 | 1444.763 |
| | REGORIGI(2) | 1.424 | 2139967.057 |
| | REGORIGI(3) | 5.064 | 176789.943 |
| | ETHNIC(1) | 5.569 | 58524.338 |
| | GENDER(1) | .338 | 22.518 |
| | REGEDUCA | | |
| | REGEDUCA(1) | .004 | 3.225 |
| | REGEDUCA(2) | .003 | 2.071 |
| | REGINCOM | | |
| | REGINCOM(1) | 1.809 | 6843.409 |
| | REGINCOM(2) | .230 | 153.156 |
| | REGAGE(1) | .663 | 272.324 |
| | MARRIAGE(1) | .420 | 122.927 |
| | UNDER | .040 | 1.103 |
| | HARMO | .011 | 1.285 |
| | Constant | | |

Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 4[a] | REDTRANS(1) | .003 | 4.708 |
| | ENTRY | | |
| | ENTRY(1) | .001 | 2.378 |
| | ENTRY(2) | 3.563 | 5738.138 |
| | ENTRY(3) | .000 | 1962993921756352000000000 |
| | ENTRYDUR | .941 | 2.223 |
| | PLACE2RE | | |
| | PLACE2RE(1) | .001 | 25.571 |
| | PLACE2RE(2) | .031 | 100.781 |
| | PLACE2RE(3) | .049 | 142.126 |
| | TOTALDUR | .540 | 1.067 |
| | REGATTRA | | |
| | REGATTRA(1) | .001 | 66.900 |
| | REGATTRA(2) | .016 | 1468.641 |
| | REGDISTA | | |
| | REGDISTA(1) | .000 | 3.463 |
| | REGDISTA(2) | .000 | .943 |
| | REGORIGI | | |
| | REGORIGI(1) | .056 | 1583.049 |
| | REGORIGI(2) | 1.586 | 1426013.984 |
| | REGORIGI(3) | 3.576 | 90768.975 |
| | ETHNIC(1) | 5.058 | 52287.871 |
| | GENDER(1) | .309 | 16.485 |
| | REGEDUCA | | |
| | REGEDUCA(1) | .004 | 3.458 |
| | REGEDUCA(2) | .004 | 2.223 |
| | REGINCOM | | |
| | REGINCOM(1) | 1.618 | 4726.453 |
| | REGINCOM(2) | .289 | 167.999 |
| | REGAGE(1) | .712 | 313.629 |
| | MARRIAGE(1) | .364 | 83.588 |
| | UNDER | .056 | 1.244 |
| | HARMO | .019 | 1.608 |
| | Constant | | |
| Step 5[a] | REDTRANS(1) | .010 | 9.079 |
| | ENTRY | | |
| | ENTRY(1) | .000 | .770 |
| | ENTRY(2) | 2.633 | 1823.598 |
| | ENTRY(3) | .000 | 8376122223101710000000000 |
| | ENTRYDUR | .908 | 1.561 |
| | TOTALDUR | .686 | 1.060 |
| | REGATTRA | | |
| | REGATTRA(1) | .002 | 22.811 |
| | REGATTRA(2) | .029 | 336.851 |
| | REGDISTA | | |
| | REGDISTA(1) | .000 | 7.087 |
| | REGDISTA(2) | .000 | 2.067 |
| | REGORIGI | | |
| | REGORIGI(1) | .048 | 554.666 |
| | REGORIGI(2) | .621 | 83859.588 |
| | REGORIGI(3) | 2.359 | 27843.331 |
| | ETHNIC(1) | 2.094 | 8368.782 |
| | GENDER(1) | .288 | 11.618 |
| | REGEDUCA | | |
| | REGEDUCA(1) | .005 | 2.498 |
| | REGEDUCA(2) | .003 | 1.450 |
| | REGINCOM | | |
| | REGINCOM(1) | 1.448 | 1648.212 |
| | REGINCOM(2) | .252 | 47.574 |
| | REGAGE(1) | .845 | 232.441 |
| | MARRIAGE(1) | .294 | 41.151 |
| | UNDER | .058 | 1.327 |
| | HARMO | .020 | 1.360 |
| | Constant | | |

Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 6[a] | REDTRANS(1) | .007 | 7.069 |
| | ENTRY | | |
| | ENTRY(1) | .001 | .751 |
| | ENTRY(2) | 2.288 | 1201.793 |
| | ENTRY(3) | .000 | 3.514615327525421E+25 |
| | ENTRYDUR | .930 | 1.573 |
| | TOTALDUR | .681 | 1.060 |
| | REGATTRA | | |
| | REGATTRA(1) | .003 | 28.085 |
| | REGATTRA(2) | .033 | 393.409 |
| | REGDISTA | | |
| | REGDISTA(1) | .000 | 7.039 |
| | REGDISTA(2) | .000 | 2.121 |
| | REGORIGI | | |
| | REGORIGI(1) | .056 | 616.941 |
| | REGORIGI(2) | .614 | 74359.604 |
| | REGORIGI(3) | 2.056 | 16559.632 |
| | ETHNIC(1) | 1.841 | 7581.438 |
| | REGEDUCA | | |
| | REGEDUCA(1) | .007 | 2.627 |
| | REGEDUCA(2) | .005 | 1.501 |
| | REGINCOM | | |
| | REGINCOM(1) | 1.429 | 663.438 |
| | REGINCOM(2) | .227 | 42.154 |
| | REGAGE(1) | .743 | 180.234 |
| | MARRIAGE(1) | .292 | 32.709 |
| | UNDER | .065 | 1.340 |
| | HARMO | .027 | 1.341 |
| | Constant | | |
| Step 7[a] | ENTRY | | |
| | ENTRY(1) | .000 | .402 |
| | ENTRY(2) | 2.112 | 442.966 |
| | ENTRY(3) | .000 | 8.170160768054770E+26 |
| | ENTRYDUR | .913 | 1.572 |
| | TOTALDUR | .680 | 1.074 |
| | REGATTRA | | |
| | REGATTRA(1) | .004 | 16.370 |
| | REGATTRA(2) | .042 | 230.617 |
| | REGDISTA | | |
| | REGDISTA(1) | .001 | 7.965 |
| | REGDISTA(2) | .001 | 2.462 |
| | REGORIGI | | |
| | REGORIGI(1) | .054 | 497.849 |
| | REGORIGI(2) | .548 | 54155.080 |
| | REGORIGI(3) | 1.772 | 12180.113 |
| | ETHNIC(1) | 1.951 | 8463.963 |
| | REGEDUCA | | |
| | REGEDUCA(1) | .008 | 2.875 |
| | REGEDUCA(2) | .006 | 1.550 |
| | REGINCOM | | |
| | REGINCOM(1) | 2.118 | 928.617 |
| | REGINCOM(2) | .306 | 55.338 |
| | REGAGE(1) | .712 | 88.491 |
| | MARRIAGE(1) | .298 | 30.988 |
| | UNDER | .072 | 1.323 |
| | HARMO | .029 | 1.410 |
| | Constant | | |

Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 8[a] | ENTRY | | |
| | ENTRY(1) | .001 | .472 |
| | ENTRY(2) | 2.310 | 474.842 |
| | ENTRY(3) | .000 | 2.314799555491356E+27 |
| | ENTRYDUR | .909 | 1.550 |
| | TOTALDUR | .704 | 1.074 |
| | REGATTRA | | |
| | REGATTRA(1) | .005 | 39.802 |
| | REGATTRA(2) | .049 | 551.324 |
| | REGDISTA | | |
| | REGDISTA(1) | .001 | 9.942 |
| | REGDISTA(2) | .001 | 3.059 |
| | REGORIGI | | |
| | REGORIGI(1) | .042 | 312.030 |
| | REGORIGI(2) | .414 | 16997.122 |
| | REGORIGI(3) | 1.449 | 6318.044 |
| | ETHNIC(1) | 1.766 | 4983.735 |
| | REGEDUCA | | |
| | REGEDUCA(1) | .008 | 2.819 |
| | REGEDUCA(2) | .005 | 1.428 |
| | REGINCOM | | |
| | REGINCOM(1) | 2.113 | 794.680 |
| | REGINCOM(2) | .277 | 42.259 |
| | REGAGE(1) | 1.169 | 125.407 |
| | UNDER | .081 | 1.388 |
| | HARMO | .044 | 1.506 |
| | Constant | | |
| Step 9[a] | ENTRY | | |
| | ENTRY(1) | .001 | .492 |
| | ENTRY(2) | 1.825 | 256.377 |
| | ENTRY(3) | .000 | 266754978463749600000.000 |
| | ENTRYDUR | .926 | 1.611 |
| | TOTALDUR | .700 | 1.069 |
| | REGATTRA | | |
| | REGATTRA(1) | .008 | 39.865 |
| | REGATTRA(2) | .063 | 443.389 |
| | REGORIGI | | |
| | REGORIGI(1) | .044 | 443.043 |
| | REGORIGI(2) | .317 | 8211.346 |
| | REGORIGI(3) | .679 | 964.065 |
| | ETHNIC(1) | 1.081 | 1819.091 |
| | REGEDUCA | | |
| | REGEDUCA(1) | .030 | 4.440 |
| | REGEDUCA(2) | .024 | 2.104 |
| | REGINCOM | | |
| | REGINCOM(1) | 1.599 | 228.274 |
| | REGINCOM(2) | .369 | 41.492 |
| | REGAGE(1) | 1.003 | 57.522 |
| | UNDER | .126 | 1.632 |
| | HARMO | .112 | 1.783 |
| | Constant | | |

Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 10[a] | ENTRY | | |
| | ENTRY(1) | .001 | .383 |
| | ENTRY(2) | 1.546 | 136.694 |
| | ENTRY(3) | .000 | 626484788429998000000.000 |
| | ENTRYDUR | .948 | 1.616 |
| | TOTALDUR | .703 | 1.060 |
| | REGATTRA | | |
| | REGATTRA(1) | .013 | 17.397 |
| | REGATTRA(2) | .075 | 125.481 |
| | REGORIGI | | |
| | REGORIGI(1) | .072 | 343.855 |
| | REGORIGI(2) | .421 | 8178.523 |
| | REGORIGI(3) | .471 | 538.610 |
| | ETHNIC(1) | 1.309 | 2335.284 |
| | REGINCOM | | |
| | REGINCOM(1) | 1.550 | 188.795 |
| | REGINCOM(2) | .547 | 57.034 |
| | REGAGE(1) | .928 | 40.028 |
| | UNDER | .174 | 1.815 |
| | HARMO | .157 | 1.796 |
| | Constant | | |
| Step 11[a] | ENTRY | | |
| | ENTRY(1) | .001 | .396 |
| | ENTRY(2) | 1.605 | 148.966 |
| | ENTRY(3) | .000 | 350494060351987600000.000 |
| | ENTRYDUR | .955 | 1.623 |
| | TOTALDUR | .733 | 1.069 |
| | REGATTRA | | |
| | REGATTRA(1) | .019 | 38.275 |
| | REGATTRA(2) | .084 | 261.796 |
| | REGORIGI | | |
| | REGORIGI(1) | .051 | 117.319 |
| | REGORIGI(2) | .285 | 1399.845 |
| | REGORIGI(3) | .441 | 434.844 |
| | ETHNIC(1) | 2.066 | 2857.836 |
| | REGINCOM | | |
| | REGINCOM(1) | 1.410 | 129.825 |
| | REGINCOM(2) | .589 | 56.152 |
| | REGAGE(1) | 1.036 | 45.500 |
| | HARMO | .160 | 1.761 |
| | Constant | | |
| Step 12[a] | ENTRY | | |
| | ENTRY(1) | .001 | .296 |
| | ENTRY(2) | 1.859 | 103.685 |
| | ENTRY(3) | .000 | 104617244823310000000.000 |
| | ENTRYDUR | 1.020 | 1.656 |
| | TOTALDUR | .759 | 1.003 |
| | REGATTRA | | |
| | REGATTRA(1) | .041 | 46.591 |
| | REGATTRA(2) | .121 | 237.450 |
| | ETHNIC(1) | 1.383 | 59.496 |
| | REGINCOM | | |
| | REGINCOM(1) | 1.401 | 78.307 |
| | REGINCOM(2) | .883 | 54.599 |
| | REGAGE(1) | 1.007 | 33.495 |
| | HARMO | .216 | 2.042 |
| | Constant | | |

Variables in the Equation

| | | 95.0% C.I.for EXP(B) | |
|---|---|---|---|
| | | Lower | Upper |
| Step 13[a] | ENTRY | | |
| | ENTRY(1) | .002 | .334 |
| | ENTRY(2) | 1.858 | 96.683 |
| | ENTRY(3) | .000 | 36775251114239782000000.000 |
| | ENTRYDUR | 1.010 | 1.664 |
| | TOTALDUR | .771 | 1.010 |
| | REGATTRA | | |
| | REGATTRA(1) | .041 | 54.733 |
| | REGATTRA(2) | .113 | 251.884 |
| | ETHNIC(1) | 1.564 | 65.010 |
| | REGINCOM | | |
| | REGINCOM(1) | 1.314 | 66.561 |
| | REGINCOM(2) | .889 | 52.910 |
| | REGAGE(1) | .956 | 28.420 |
| | Constant | | |
| Step 14[a] | ENTRY | | |
| | ENTRY(1) | .002 | .292 |
| | ENTRY(2) | 1.629 | 66.477 |
| | ENTRY(3) | .000 | 58061601731019000000000.000 |
| | ENTRYDUR | 1.037 | 1.603 |
| | TOTALDUR | .761 | 1.004 |
| | ETHNIC(1) | 1.976 | 75.530 |
| | REGINCOM | | |
| | REGINCOM(1) | 1.082 | 47.819 |
| | REGINCOM(2) | .702 | 34.796 |
| | REGAGE(1) | .807 | 19.669 |
| | Constant | | |

a. Variable(s) entered on step 1: REDTRANS, PREVIOUS, REGGROUP, ENTRY, ENTRYDUR, PLACE2RE, TOTALDUR, REGATTRA, REGDISTA, REGORIGI, ETHNIC, GENDER, REGSPEND, REGEDUCA, REGINCOM, REGAGE, MARRIAGE, UNDER, HARMO.

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 1 | REDTRANS | -25.409 | 1.900 | 1 | .168 |
| | PREVIOUS | -24.570 | .222 | 1 | .638 |
| | REGGROUP | -25.148 | 1.378 | 1 | .241 |
| | ENTRY | -47.623 | 46.328 | 3 | .000 |
| | ENTRYDUR | -26.110 | 3.302 | 1 | .069 |
| | PLACE2RE | -26.207 | 3.497 | 3 | .321 |
| | TOTALDUR | -27.670 | 6.422 | 1 | .011 |
| | REGATTRA | -27.133 | 5.348 | 2 | .069 |
| | REGDISTA | -27.230 | 5.543 | 2 | .063 |
| | REGORIGI | -28.577 | 8.237 | 3 | .041 |
| | ETHNIC | -28.881 | 8.844 | 1 | .003 |
| | GENDER | -25.014 | 1.109 | 1 | .292 |
| | REGSPEND | -25.141 | 1.364 | 2 | .506 |
| | REGEDUCA | -25.937 | 2.957 | 2 | .228 |
| | REGINCOM | -27.097 | 5.276 | 2 | .071 |
| | REGAGE | -26.224 | 3.530 | 1 | .060 |
| | MARRIAGE | -25.310 | 1.702 | 1 | .192 |
| | UNDER | -26.153 | 3.389 | 1 | .066 |
| | HARMO | -25.909 | 2.900 | 1 | .089 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 2 | REDTRANS | -25.415 | 1.691 | 1 | .193 |
| | REGGROUP | -25.206 | 1.272 | 1 | .259 |
| | ENTRY | -47.742 | 46.344 | 3 | .000 |
| | ENTRYDUR | -26.162 | 3.184 | 1 | .074 |
| | PLACE2RE | -26.318 | 3.497 | 3 | .321 |
| | TOTALDUR | -27.738 | 6.336 | 1 | .012 |
| | REGATTRA | -27.499 | 5.859 | 2 | .053 |
| | REGDISTA | -27.231 | 5.322 | 2 | .070 |
| | REGORIGI | -29.108 | 9.076 | 3 | .028 |
| | ETHNIC | -28.981 | 8.823 | 1 | .003 |
| | GENDER | -25.363 | 1.587 | 1 | .208 |
| | REGSPEND | -25.188 | 1.236 | 2 | .539 |
| | REGEDUCA | -26.228 | 3.317 | 2 | .190 |
| | REGINCOM | -28.000 | 6.860 | 2 | .032 |
| | REGAGE | -26.383 | 3.627 | 1 | .057 |
| | MARRIAGE | -25.548 | 1.957 | 1 | .162 |
| | UNDER | -26.278 | 3.416 | 1 | .065 |
| | HARMO | -26.539 | 3.938 | 1 | .047 |
| Step 3 | REDTRANS | -26.014 | 1.652 | 1 | .199 |
| | REGGROUP | -25.598 | .820 | 1 | .365 |
| | ENTRY | -48.853 | 47.331 | 3 | .000 |
| | ENTRYDUR | -27.065 | 3.755 | 1 | .053 |
| | PLACE2RE | -26.795 | 3.215 | 3 | .360 |
| | TOTALDUR | -29.471 | 8.566 | 1 | .003 |
| | REGATTRA | -28.215 | 6.053 | 2 | .048 |
| | REGDISTA | -27.932 | 5.488 | 2 | .064 |
| | REGORIGI | -30.480 | 10.583 | 3 | .014 |
| | ETHNIC | -29.840 | 9.305 | 1 | .002 |
| | GENDER | -25.662 | .948 | 1 | .330 |
| | REGEDUCA | -26.638 | 2.901 | 2 | .234 |
| | REGINCOM | -29.480 | 8.584 | 2 | .014 |
| | REGAGE | -26.969 | 3.563 | 1 | .059 |
| | MARRIAGE | -26.251 | 2.127 | 1 | .145 |
| | UNDER | -27.179 | 3.983 | 1 | .046 |
| | HARMO | -27.135 | 3.893 | 1 | .048 |
| Step 4 | REDTRANS | -26.258 | 1.321 | 1 | .250 |
| | ENTRY | -48.868 | 46.540 | 3 | .000 |
| | ENTRYDUR | -27.697 | 4.199 | 1 | .040 |
| | PLACE2RE | -26.984 | 2.772 | 3 | .428 |
| | TOTALDUR | -30.015 | 8.835 | 1 | .003 |
| | REGATTRA | -28.542 | 5.888 | 2 | .053 |
| | REGDISTA | -27.951 | 4.707 | 2 | .095 |
| | REGORIGI | -30.489 | 9.783 | 3 | .021 |
| | ETHNIC | -30.068 | 8.941 | 1 | .003 |
| | GENDER | -25.934 | .672 | 1 | .412 |
| | REGEDUCA | -26.938 | 2.680 | 2 | .262 |
| | REGINCOM | -29.629 | 8.062 | 2 | .018 |
| | REGAGE | -27.585 | 3.974 | 1 | .046 |
| | MARRIAGE | -26.456 | 1.716 | 1 | .190 |
| | UNDER | -27.229 | 3.263 | 1 | .071 |
| | HARMO | -27.143 | 3.091 | 1 | .079 |
| Step 5 | REDTRANS | -27.238 | .508 | 1 | .476 |
| | ENTRY | -52.146 | 50.324 | 3 | .000 |
| | ENTRYDUR | -27.961 | 1.955 | 1 | .162 |
| | TOTALDUR | -30.126 | 6.284 | 1 | .012 |
| | REGATTRA | -29.922 | 5.877 | 2 | .053 |
| | REGDISTA | -28.548 | 3.129 | 2 | .209 |
| | REGORIGI | -31.031 | 8.096 | 3 | .044 |
| | ETHNIC | -30.302 | 6.636 | 1 | .010 |
| | GENDER | -27.192 | .417 | 1 | .518 |
| | REGEDUCA | -28.862 | 3.758 | 2 | .153 |
| | REGINCOM | -30.451 | 6.935 | 2 | .031 |
| | REGAGE | -29.208 | 4.449 | 1 | .035 |
| | MARRIAGE | -27.506 | 1.045 | 1 | .307 |
| | UNDER | -28.511 | 3.054 | 1 | .081 |
| | HARMO | -28.960 | 3.952 | 1 | .047 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 6 | REDTRANS | -27.556 | .728 | 1 | .393 |
| | ENTRY | -52.249 | 50.113 | 3 | .000 |
| | ENTRYDUR | -28.491 | 2.598 | 1 | .107 |
| | TOTALDUR | -30.398 | 6.411 | 1 | .011 |
| | REGATTRA | -29.958 | 5.531 | 2 | .063 |
| | REGDISTA | -28.652 | 2.919 | 2 | .232 |
| | REGORIGI | -31.033 | 7.682 | 3 | .053 |
| | ETHNIC | -30.350 | 6.315 | 1 | .012 |
| | REGEDUCA | -28.906 | 3.427 | 2 | .180 |
| | REGINCOM | -30.565 | 6.745 | 2 | .034 |
| | REGAGE | -29.217 | 4.049 | 1 | .044 |
| | MARRIAGE | -27.653 | .921 | 1 | .337 |
| | UNDER | -28.627 | 2.870 | 1 | .090 |
| | HARMO | -29.031 | 3.677 | 1 | .055 |
| Step 7 | ENTRY | -52.379 | 49.645 | 3 | .000 |
| | ENTRYDUR | -28.646 | 2.180 | 1 | .140 |
| | TOTALDUR | -30.519 | 5.925 | 1 | .015 |
| | REGATTRA | -30.641 | 6.168 | 2 | .046 |
| | REGDISTA | -28.815 | 2.518 | 2 | .284 |
| | REGORIGI | -31.185 | 7.258 | 3 | .064 |
| | ETHNIC | -30.843 | 6.573 | 1 | .010 |
| | REGEDUCA | -29.171 | 3.230 | 2 | .199 |
| | REGINCOM | -32.131 | 9.148 | 2 | .010 |
| | REGAGE | -29.266 | 3.419 | 1 | .064 |
| | MARRIAGE | -28.016 | .919 | 1 | .338 |
| | UNDER | -28.973 | 2.834 | 1 | .092 |
| | HARMO | -29.323 | 3.534 | 1 | .060 |
| Step 8 | ENTRY | -52.469 | 48.906 | 3 | .000 |
| | ENTRYDUR | -29.044 | 2.056 | 1 | .152 |
| | TOTALDUR | -30.640 | 5.247 | 1 | .022 |
| | REGATTRA | -30.917 | 5.802 | 2 | .055 |
| | REGDISTA | -29.153 | 2.273 | 2 | .321 |
| | REGORIGI | -31.303 | 6.575 | 3 | .087 |
| | ETHNIC | -31.146 | 6.260 | 1 | .012 |
| | REGEDUCA | -29.783 | 3.534 | 2 | .171 |
| | REGINCOM | -32.608 | 9.185 | 2 | .010 |
| | REGAGE | -31.043 | 6.054 | 1 | .014 |
| | UNDER | -29.285 | 2.539 | 1 | .111 |
| | HARMO | -29.514 | 2.996 | 1 | .083 |
| Step 9 | ENTRY | -52.705 | 47.105 | 3 | .000 |
| | ENTRYDUR | -30.536 | 2.766 | 1 | .096 |
| | TOTALDUR | -31.757 | 5.209 | 1 | .022 |
| | REGATTRA | -31.771 | 5.237 | 2 | .073 |
| | REGORIGI | -31.420 | 4.534 | 3 | .209 |
| | ETHNIC | -31.598 | 4.891 | 1 | .027 |
| | REGEDUCA | -30.074 | 1.843 | 2 | .398 |
| | REGINCOM | -32.829 | 7.353 | 2 | .025 |
| | REGAGE | -31.534 | 4.763 | 1 | .029 |
| | UNDER | -29.928 | 1.550 | 1 | .213 |
| | HARMO | -29.962 | 1.619 | 1 | .203 |
| Step 10 | ENTRY | -53.251 | 46.355 | 3 | .000 |
| | ENTRYDUR | -31.759 | 3.369 | 1 | .066 |
| | TOTALDUR | -32.682 | 5.215 | 1 | .022 |
| | REGATTRA | -32.159 | 4.170 | 2 | .124 |
| | REGORIGI | -32.121 | 4.094 | 3 | .251 |
| | ETHNIC | -32.727 | 5.306 | 1 | .021 |
| | REGINCOM | -33.806 | 7.463 | 2 | .024 |
| | REGAGE | -32.185 | 4.222 | 1 | .040 |
| | UNDER | -30.547 | .945 | 1 | .331 |
| | HARMO | -30.667 | 1.185 | 1 | .276 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 11 | ENTRY | -53.753 | 46.413 | 3 | .000 |
| | ENTRYDUR | -32.640 | 4.187 | 1 | .041 |
| | TOTALDUR | -32.928 | 4.762 | 1 | .029 |
| | REGATTRA | -32.467 | 3.841 | 2 | .147 |
| | REGORIGI | -32.290 | 3.487 | 3 | .322 |
| | ETHNIC | -34.008 | 6.922 | 1 | .009 |
| | REGINCOM | -33.992 | 6.891 | 2 | .032 |
| | REGAGE | -32.922 | 4.751 | 1 | .029 |
| | HARMO | -31.125 | 1.156 | 1 | .282 |
| Step 12 | ENTRY | -58.526 | 52.471 | 3 | .000 |
| | ENTRYDUR | -35.493 | 6.405 | 1 | .011 |
| | TOTALDUR | -35.591 | 6.602 | 1 | .010 |
| | REGATTRA | -33.763 | 2.945 | 2 | .229 |
| | ETHNIC | -35.394 | 6.208 | 1 | .013 |
| | REGINCOM | -35.916 | 7.252 | 2 | .027 |
| | REGAGE | -34.504 | 4.428 | 1 | .035 |
| | HARMO | -32.568 | .557 | 1 | .456 |
| Step 13 | ENTRY | -58.679 | 52.221 | 3 | .000 |
| | ENTRYDUR | -35.618 | 6.099 | 1 | .014 |
| | TOTALDUR | -35.620 | 6.103 | 1 | .013 |
| | REGATTRA | -33.923 | 2.709 | 2 | .258 |
| | ETHNIC | -36.054 | 6.972 | 1 | .008 |
| | REGINCOM | -36.032 | 6.927 | 2 | .031 |
| | REGAGE | -34.615 | 4.094 | 1 | .043 |
| Step 14 | ENTRY | -60.362 | 52.878 | 3 | .000 |
| | ENTRYDUR | -37.024 | 6.202 | 1 | .013 |
| | TOTALDUR | -37.148 | 6.451 | 1 | .011 |
| | ETHNIC | -38.347 | 8.849 | 1 | .003 |
| | REGINCOM | -36.696 | 5.546 | 2 | .062 |
| | REGAGE | -35.493 | 3.140 | 1 | .076 |

Variables not in the Equation[n]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 2[a] | Variables | PREVIOUS | .200 | 1 | .655 |
| | Overall Statistics | | .200 | 1 | .655 |
| Step 3[b] | Variables | PREVIOUS | .091 | 1 | .763 |
| | | REGSPEND | 1.246 | 2 | .536 |
| | | REGSPEND(1) | .017 | 1 | .896 |
| | | REGSPEND(2) | 1.241 | 1 | .265 |
| | Overall Statistics | | 1.425 | 3 | .700 |
| Step 4[c] | Variables | PREVIOUS | .019 | 1 | .890 |
| | | REGGROUP(1) | .796 | 1 | .372 |
| | | REGSPEND | .800 | 2 | .670 |
| | | REGSPEND(1) | .073 | 1 | .788 |
| | | REGSPEND(2) | .624 | 1 | .429 |
| | Overall Statistics | | 2.159 | 4 | .707 |
| Step 5[d] | Variables | PREVIOUS | .011 | 1 | .917 |
| | | REGGROUP(1) | .370 | 1 | .543 |
| | | PLACE2RE | 2.775 | 3 | .428 |
| | | PLACE2RE(1) | 2.542 | 1 | .111 |
| | | PLACE2RE(2) | .002 | 1 | .965 |
| | | PLACE2RE(3) | 1.302 | 1 | .254 |
| | | REGSPEND | .711 | 2 | .701 |
| | | REGSPEND(1) | .001 | 1 | .974 |
| | | REGSPEND(2) | .633 | 1 | .426 |
| | Overall Statistics | | 5.035 | 7 | .656 |

Variables not in the Equation[n]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 6[e] | Variables | PREVIOUS | .077 | 1 | .782 |
| | | REGGROUP(1) | .223 | 1 | .637 |
| | | PLACE2RE | 2.548 | 3 | .467 |
| | | PLACE2RE(1) | 2.412 | 1 | .120 |
| | | PLACE2RE(2) | .000 | 1 | .997 |
| | | PLACE2RE(3) | 1.050 | 1 | .305 |
| | | GENDER(1) | .415 | 1 | .519 |
| | | REGSPEND | .466 | 2 | .792 |
| | | REGSPEND(1) | .002 | 1 | .968 |
| | | REGSPEND(2) | .395 | 1 | .530 |
| | Overall Statistics | | 5.508 | 8 | .702 |
| Step 7[f] | Variables | REDTRANS(1) | .730 | 1 | .393 |
| | | PREVIOUS | .023 | 1 | .878 |
| | | REGGROUP(1) | .056 | 1 | .813 |
| | | PLACE2RE | 1.730 | 3 | .630 |
| | | PLACE2RE(1) | 1.667 | 1 | .197 |
| | | PLACE2RE(2) | .026 | 1 | .872 |
| | | PLACE2RE(3) | .535 | 1 | .465 |
| | | GENDER(1) | .636 | 1 | .425 |
| | | REGSPEND | .428 | 2 | .808 |
| | | REGSPEND(1) | .012 | 1 | .912 |
| | | REGSPEND(2) | .410 | 1 | .522 |
| | Overall Statistics | | 5.972 | 9 | .743 |
| Step 8[g] | Variables | REDTRANS(1) | .737 | 1 | .391 |
| | | PREVIOUS | .051 | 1 | .822 |
| | | REGGROUP(1) | .002 | 1 | .967 |
| | | PLACE2RE | 1.381 | 3 | .710 |
| | | PLACE2RE(1) | 1.319 | 1 | .251 |
| | | PLACE2RE(2) | .091 | 1 | .762 |
| | | PLACE2RE(3) | .286 | 1 | .593 |
| | | GENDER(1) | .448 | 1 | .504 |
| | | REGSPEND | .653 | 2 | .722 |
| | | REGSPEND(1) | .014 | 1 | .905 |
| | | REGSPEND(2) | .491 | 1 | .483 |
| | | MARRIAGE(1) | .899 | 1 | .343 |
| | Overall Statistics | | 6.654 | 10 | .758 |
| Step 9[h] | Variables | REDTRANS(1) | .322 | 1 | .571 |
| | | PREVIOUS | .003 | 1 | .953 |
| | | REGGROUP(1) | .091 | 1 | .763 |
| | | PLACE2RE | .836 | 3 | .841 |
| | | PLACE2RE(1) | .664 | 1 | .415 |
| | | PLACE2RE(2) | .231 | 1 | .631 |
| | | PLACE2RE(3) | .043 | 1 | .835 |
| | | REGDISTA | 2.535 | 2 | .282 |
| | | REGDISTA(1) | .322 | 1 | .570 |
| | | REGDISTA(2) | 1.376 | 1 | .241 |
| | | GENDER(1) | .184 | 1 | .668 |
| | | REGSPEND | 1.126 | 2 | .570 |
| | | REGSPEND(1) | .062 | 1 | .803 |
| | | REGSPEND(2) | .798 | 1 | .372 |
| | | MARRIAGE(1) | .674 | 1 | .412 |
| | Overall Statistics | | 9.719 | 12 | .641 |

Variables not in the Equation[n]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 10[l] | Variables | REDTRANS(1) | .288 | 1 | .591 |
| | | PREVIOUS | .014 | 1 | .905 |
| | | REGGROUP(1) | .121 | 1 | .728 |
| | | PLACE2RE | 1.505 | 3 | .681 |
| | | PLACE2RE(1) | 1.213 | 1 | .271 |
| | | PLACE2RE(2) | .297 | 1 | .586 |
| | | PLACE2RE(3) | .197 | 1 | .657 |
| | | REGDISTA | .629 | 2 | .730 |
| | | REGDISTA(1) | .050 | 1 | .824 |
| | | REGDISTA(2) | .326 | 1 | .568 |
| | | GENDER(1) | .060 | 1 | .807 |
| | | REGSPEND | 1.051 | 2 | .591 |
| | | REGSPEND(1) | .166 | 1 | .684 |
| | | REGSPEND(2) | .594 | 1 | .441 |
| | | REGEDUCA | 1.794 | 2 | .408 |
| | | REGEDUCA(1) | .016 | 1 | .901 |
| | | REGEDUCA(2) | 1.169 | 1 | .280 |
| | | MARRIAGE(1) | .904 | 1 | .342 |
| | Overall Statistics | | 10.601 | 14 | .717 |
| Step 11[j] | Variables | REDTRANS(1) | .283 | 1 | .595 |
| | | PREVIOUS | .016 | 1 | .899 |
| | | REGGROUP(1) | .231 | 1 | .631 |
| | | PLACE2RE | .990 | 3 | .804 |
| | | PLACE2RE(1) | .761 | 1 | .383 |
| | | PLACE2RE(2) | .113 | 1 | .737 |
| | | PLACE2RE(3) | .268 | 1 | .605 |
| | | REGDISTA | .457 | 2 | .796 |
| | | REGDISTA(1) | .005 | 1 | .941 |
| | | REGDISTA(2) | .143 | 1 | .705 |
| | | GENDER(1) | .078 | 1 | .780 |
| | | REGSPEND | 1.237 | 2 | .539 |
| | | REGSPEND(1) | .054 | 1 | .816 |
| | | REGSPEND(2) | .924 | 1 | .336 |
| | | REGEDUCA | 1.208 | 2 | .547 |
| | | REGEDUCA(1) | .002 | 1 | .967 |
| | | REGEDUCA(2) | .607 | 1 | .436 |
| | | MARRIAGE(1) | .675 | 1 | .411 |
| | | UNDER | .938 | 1 | .333 |
| | Overall Statistics | | 11.317 | 15 | .730 |
| Step 12[k] | Variables | REDTRANS(1) | .229 | 1 | .632 |
| | | PREVIOUS | .209 | 1 | .648 |
| | | REGGROUP(1) | .306 | 1 | .580 |
| | | PLACE2RE | .810 | 3 | .847 |
| | | PLACE2RE(1) | .666 | 1 | .414 |
| | | PLACE2RE(2) | .345 | 1 | .557 |
| | | PLACE2RE(3) | .004 | 1 | .952 |
| | | REGDISTA | .060 | 2 | .971 |
| | | REGDISTA(1) | .041 | 1 | .839 |
| | | REGDISTA(2) | .012 | 1 | .914 |
| | | REGORIGI | 3.374 | 3 | .338 |
| | | REGORIGI(1) | .974 | 1 | .324 |
| | | REGORIGI(2) | .664 | 1 | .415 |
| | | REGORIGI(3) | .762 | 1 | .383 |
| | | GENDER(1) | .006 | 1 | .941 |
| | | REGSPEND | 2.352 | 2 | .308 |
| | | REGSPEND(1) | .099 | 1 | .753 |
| | | REGSPEND(2) | 2.280 | 1 | .131 |
| | | REGEDUCA | .715 | 2 | .700 |
| | | REGEDUCA(1) | .001 | 1 | .970 |
| | | REGEDUCA(2) | .495 | 1 | .482 |
| | | MARRIAGE(1) | .158 | 1 | .691 |
| | | UNDER | .335 | 1 | .563 |
| | Overall Statistics | | 13.672 | 18 | .750 |

Variables not in the Equation[n]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 13[l] | Variables | REDTRANS(1) | .216 | 1 | .642 |
| | | PREVIOUS | .481 | 1 | .488 |
| | | REGGROUP(1) | .539 | 1 | .463 |
| | | PLACE2RE | 1.122 | 3 | .772 |
| | | PLACE2RE(1) | .935 | 1 | .334 |
| | | PLACE2RE(2) | .463 | 1 | .496 |
| | | PLACE2RE(3) | .001 | 1 | .977 |
| | | REGDISTA | .001 | 2 | .999 |
| | | REGDISTA(1) | .001 | 1 | .971 |
| | | REGDISTA(2) | .001 | 1 | .972 |
| | | REGORIGI | 2.782 | 3 | .426 |
| | | REGORIGI(1) | .852 | 1 | .356 |
| | | REGORIGI(2) | .740 | 1 | .390 |
| | | REGORIGI(3) | .431 | 1 | .511 |
| | | GENDER(1) | .029 | 1 | .865 |
| | | REGSPEND | 2.298 | 2 | .317 |
| | | REGSPEND(1) | .154 | 1 | .695 |
| | | REGSPEND(2) | 2.262 | 1 | .133 |
| | | REGEDUCA | .692 | 2 | .708 |
| | | REGEDUCA(1) | .069 | 1 | .793 |
| | | REGEDUCA(2) | .627 | 1 | .429 |
| | | MARRIAGE(1) | .075 | 1 | .785 |
| | | UNDER | .277 | 1 | .599 |
| | | HARMO | .407 | 1 | .524 |
| | Overall Statistics | | 13.267 | 19 | .825 |
| Step 14[m] | Variables | REDTRANS(1) | .529 | 1 | .467 |
| | | PREVIOUS | .460 | 1 | .498 |
| | | REGGROUP(1) | .434 | 1 | .510 |
| | | PLACE2RE | .416 | 3 | .937 |
| | | PLACE2RE(1) | .396 | 1 | .529 |
| | | PLACE2RE(2) | .049 | 1 | .824 |
| | | PLACE2RE(3) | .072 | 1 | .789 |
| | | REGATTRA | 2.861 | 2 | .239 |
| | | REGATTRA(1) | 1.963 | 1 | .161 |
| | | REGATTRA(2) | 2.818 | 1 | .093 |
| | | REGDISTA | .016 | 2 | .992 |
| | | REGDISTA(1) | .000 | 1 | .983 |
| | | REGDISTA(2) | .002 | 1 | .963 |
| | | REGORIGI | 1.993 | 3 | .574 |
| | | REGORIGI(1) | 1.316 | 1 | .251 |
| | | REGORIGI(2) | .449 | 1 | .503 |
| | | REGORIGI(3) | .597 | 1 | .440 |
| | | GENDER(1) | .028 | 1 | .866 |
| | | REGSPEND | 1.779 | 2 | .411 |
| | | REGSPEND(1) | .002 | 1 | .961 |
| | | REGSPEND(2) | 1.526 | 1 | .217 |
| | | REGEDUCA | .376 | 2 | .828 |
| | | REGEDUCA(1) | .198 | 1 | .656 |
| | | REGEDUCA(2) | .362 | 1 | .547 |
| | | MARRIAGE(1) | .139 | 1 | .709 |
| | | UNDER | .491 | 1 | .484 |
| | | HARMO | .238 | 1 | .626 |
| | Overall Statistics | | 14.762 | 21 | .835 |

a. Variable(s) removed on step 2: PREVIOUS.

b. Variable(s) removed on step 3: REGSPEND.

c. Variable(s) removed on step 4: REGGROUP.

d. Variable(s) removed on step 5: PLACE2RE.

e. Variable(s) removed on step 6: GENDER.

f. Variable(s) removed on step 7: REDTRANS.

g. Variable(s) removed on step 8: MARRIAGE.

h. Variable(s) removed on step 9: REGDISTA.

i. Variable(s) removed on step 10: REGEDUCA.

j. Variable(s) removed on step 11: UNDER.

k. Variable(s) removed on step 12: REGORIGI.

l. Variable(s) removed on step 13: HARMO.

Variables not in the Equation[n]

m. Variable(s) removed on step 14: REGATTRA.

n. Adding the most significant variable will result in a model which duplicates a prior model.

```
          Step number: 1

          Observed Groups and Predicted Probabilities

     160 ô                                                            ô
         óO                                                           ó
         óO                                                           ó
F        óO                                                           ó
R    120 ôO                                                           ô
E        óO                                                           ó
Q        óO                                                           ó
U        óO                                                           ó
E     80 ôO                                                           ô
N        óO                                                           ó
C        óO                                                           ó
Y        óO                                                           ó
      40 ôO                                                           ô
         óO                                                           ó
         óO                                                           ó
         óOO                                                          ó
Predicted òòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòò
  Prob:   0             .25            .5             .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.
```

```
          Step number: 2

          Observed Groups and Predicted Probabilities

     160 ô                                                            ô
         óO                                                           ó
         óO                                                           ó
F        óO                                                           ó
R    120 ôO                                                           ô
E        óO                                                           ó
Q        óO                                                           ó
U        óO                                                           ó
E     80 ôO                                                           ô
N        óO                                                           ó
C        óO                                                           ó
Y        óO                                                           ó
      40 ôO                                                           ô
         óO                                                           ó
         óO                                                           ó
         óOOO                                                         ó
Predicted òòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòò
  Prob:   0             .25            .5             .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.
```

```
          Step number: 3

          Observed Groups and Predicted Probabilities

     160 ô                                                            ô
         óO                                                           ó
         óO                                                           ó
F        óO                                                           ó
R    120 ôO                                                           ô
E        óO                                                           ó
Q        óO                                                           ó
U        óO                                                           ó
E     80 ôO                                                           ô
N        óO                                                           ó
C        óO                                                           ó
Y        óO                                                           ó
      40 ôO                                                           ô
         óO                                                           ó
         óO                                                           ó
         óOO                                                          ó
Predicted òòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòò
  Prob:   0             .25            .5             .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.
```

```
          Step number: 4

          Observed Groups and Predicted Probabilities

    160 ô                                                            ô
        óO                                                           ó
        óO                                                           ó
F       óO                                                           ó
R   120 ôO                                                           ô
E       óO                                                           ó
Q       óO                                                           ó
U       óO                                                           ó
E    80 ôO                                                           ô
N       óO                                                           ó
C       óO                                                           ó
Y       óO                                                           ó
     40 ôO                                                           ô
        óO                                                           ó
        óO                                                           ó
        óOOO                                                         ó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0              .25            .5             .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.
```

```
          Step number: 5

          Observed Groups and Predicted Probabilities

    160 ô                                                            ô
        ó                                                            ó
        óO                                                           ó
F       óO                                                           ó
R   120 ôO                                                           ô
E       óO                                                           ó
Q       óO                                                           ó
U       óO                                                           ó
E    80 ôO                                                           ô
N       óO                                                           ó
C       óO                                                           ó
Y       óO                                                           ó
     40 ôO                                                           ô
        óO                                                           ó
        óO                                                           ó
        óOO                                                          ó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0              .25            .5             .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

          Predicted Probability is of Membership for Shanghai
          The Cut Value is .50
          Symbols: O - Others
                   S - Shanghai
          Each Symbol Represents 10 Cases.
```

```
          Step number: 6

          Observed Groups and Predicted Probabilities

    160 ô                                                            ô
        ó                                                            ó
        óO                                                           ó
F       óO                                                           ó
R   120 ôO                                                           ô
E       óO                                                           ó
Q       óO                                                           ó
U       óO                                                           ó
E    80 ôO                                                           ô
N       óO                                                           ó
C       óO                                                           ó
Y       óO                                                           ó
     40 ôO                                                           ô
        óO                                                           ó
        óO                                                           ó
        óOOO                                                         ó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0              .25            .5             .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
```

```
Predicted Probability is of Membership for Shanghai
The Cut Value is .50
Symbols: O - Others
         S - Shanghai
Each Symbol Represents 10 Cases.
```

```
        Step number: 7

        Observed Groups and Predicted Probabilities

      160 ô                                                            ô
          ó                                                            ó
          óO                                                           ó
F         óO                                                           ó
R     120 ôO                                                           ô
E         óO                                                           ó
Q         óO                                                           ó
U         óO                                                           ó
E      80 ôO                                                           ô
N         óO                                                           ó
C         óO                                                           ó
Y         óO                                                           ó
       40 ôO                                                           ô
          óO                                                           ó
          óO                                                           ó
          óOO O O                                                      ó
Predicted òòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0           .25              .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

        Predicted Probability is of Membership for Shanghai
        The Cut Value is .50
        Symbols: O - Others
                 S - Shanghai
        Each Symbol Represents 10 Cases.
```

```
        Step number: 8

        Observed Groups and Predicted Probabilities

      160 ô                                                            ô
          ó                                                            ó
          óO                                                           ó
F         óO                                                           ó
R     120 ôO                                                           ô
E         óO                                                           ó
Q         óO                                                           ó
U         óO                                                           ó
E      80 ôO                                                           ô
N         óO                                                           ó
C         óO                                                           ó
Y         óO                                                           ó
       40 ôO                                                           ô
          óO                                                           ó
          óO                                                           ó
          óOO    O O                                                   ó
Predicted òòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:   0           .25              .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

        Predicted Probability is of Membership for Shanghai
        The Cut Value is .50
        Symbols: O - Others
                 S - Shanghai
        Each Symbol Represents 10 Cases.
```

```
        Step number: 9

        Observed Groups and Predicted Probabilities

      160 ô                                                            ô
          ó                                                            ó
          óS                                                           ó
F         óO                                                           ó
R     120 ôO                                                           ô
E         óO                                                           ó
Q         óO                                                           ó
U         óO                                                           ó
E      80 ôO                                                           ô
N         óO                                                           ó
C         óO                                                           ó
Y         óO                                                           ó
       40 ôO                                                           ô
          óO                                                           ó
          óOO                                                          ó
```

```
             óOO                                                             ó
Predicted  òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:    0            .25            .5            .75            1
  Group:   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

           Predicted Probability is of Membership for Shanghai
           The Cut Value is .50
           Symbols: O - Others
                    S - Shanghai
           Each Symbol Represents 10 Cases.
```

```
              Step number: 10

              Observed Groups and Predicted Probabilities

      160 ô                                                             ô
          ó                                                             ó
          óS                                                            ó
F         óO                                                            ó
R     120 ôO                                                            ô
E         óO                                                            ó
Q         óO                                                            ó
U         óO                                                            ó
E      80 ôO                                                            ô
N         óO                                                            ó
C         óO                                                            ó
Y         óO                                                            ó
       40 ôO                                                            ô
          óO                                                            ó
          óO                                                            ó
          óOOOO                                                         ó
Predicted  òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:    0            .25            .5            .75            1
  Group:   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

           Predicted Probability is of Membership for Shanghai
           The Cut Value is .50
           Symbols: O - Others
                    S - Shanghai
           Each Symbol Represents 10 Cases.
```

```
              Step number: 11

              Observed Groups and Predicted Probabilities

      160 ô                                                             ô
          ó                                                             ó
          óS                                                            ó
F         óO                                                            ó
R     120 ôO                                                            ô
E         óO                                                            ó
Q         óO                                                            ó
U         óO                                                            ó
E      80 ôO                                                            ô
N         óO                                                            ó
C         óO                                                            ó
Y         óO                                                            ó
       40 ôO                                                            ô
          óO                                                            ó
          óO                                                            ó
          óOOOO                                                         ó
Predicted  òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:    0            .25            .5            .75            1
  Group:   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

           Predicted Probability is of Membership for Shanghai
           The Cut Value is .50
           Symbols: O - Others
                    S - Shanghai
           Each Symbol Represents 10 Cases.
```

```
              Step number: 12

              Observed Groups and Predicted Probabilities

      160 ô                                                             ô
          ó                                                             ó
          ó                                                             ó
F         óO                                                            ó
R     120 ôO                                                            ô
E         óO                                                            ó
Q         óO                                                            ó
U         óO                                                            ó
E      80 ôO                                                            ô
N         óO                                                            ó
```

```
C          ó0                                                          ó
Y          ó0                                                          ó
      40 ô0                                                            ô
           ó0                                                          ó
           ó00                                                         ó
           ó000 00                                                     ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:    0            .25            .5             .75            1
  Group:   000000000000000000000000000000SSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

           Predicted Probability is of Membership for Shanghai
           The Cut Value is .50
           Symbols: O - Others
                    S - Shanghai
           Each Symbol Represents 10 Cases.
```

```
              Step number: 13

              Observed Groups and Predicted Probabilities

     160 ô                                                             ô
         ó                                                             ó
         ó                                                             ó
F        óS                                                            ó
R    120 ô0                                                            ô
E        ó0                                                            ó
Q        ó0                                                            ó
U        ó0                                                            ó
E     80 ô0                                                            ô
N        ó0                                                            ó
C        ó0                                                            ó
Y        ó0                                                            ó
      40 ô0                                                            ô
         ó0                                                            ó
         ó00                                                           ó
         ó000    0                                                     ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:    0            .25            .5             .75            1
  Group:   000000000000000000000000000000SSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

           Predicted Probability is of Membership for Shanghai
           The Cut Value is .50
           Symbols: O - Others
                    S - Shanghai
           Each Symbol Represents 10 Cases.
```

```
              Step number: 14

              Observed Groups and Predicted Probabilities

     160 ô                                                             ô
         ó                                                             ó
         ó                                                             ó
F        óS                                                            ó
R    120 ô0                                                            ô
E        ó0                                                            ó
Q        ó0                                                            ó
U        ó0                                                            ó
E     80 ô0                                                            ô
N        ó0                                                            ó
C        ó0                                                            ó
Y        ó0                                                            ó
      40 ô0                                                            ô
         ó0                                                            ó
         ó0 0                                                          ó
         ó000     0   0                                                ó
Predicted òòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòòò
  Prob:    0            .25            .5             .75            1
  Group:   000000000000000000000000000000SSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

           Predicted Probability is of Membership for Shanghai
           The Cut Value is .50
           Symbols: O - Others
                    S - Shanghai
           Each Symbol Represents 10 Cases.
```

Casewise List[b]

| Case | Selected Status[a] | Observed<br>Shanghai vs. Others | Predicted | Predicted Group | Temporary Variable<br>Resid | <br>ZResid |
|---|---|---|---|---|---|---|
| 4 | S | S** | .006 | O | .994 | 12.895 |
| 192 | S | S** | .003 | O | .997 | 18.159 |
| 193 | S | S** | .128 | O | .872 | 2.605 |

a. S = Selected, U = Unselected cases, and ** = Misclassified cases.

b. Cases with studentized residuals greater than 2.000 are listed.

# APPENDIX 11

## Binary logistic regression model, Logit III:

## Guangzhou versus Others

# Logit III: Guangzhou vs. Others (deleted PLACE2RE, ENTRY)

Case Processing Summary

| Unweighted Cases[a] | | N | Percent |
|---|---|---|---|
| Selected Cases | Included in Analysis | 211 | 99.1 |
| | Missing Cases | 2 | .9 |
| | Total | 213 | 100.0 |
| Unselected Cases | | 0 | .0 |
| Total | | 213 | 100.0 |

a. If weight is in effect, see classification table for the total number of cases.

Case Processing Summary

| Unweighted Cases[a] | | N | Percent |
|---|---|---|---|
| Selected Cases | Included in Analysis | 211 | 99.5 |
| | Missing Cases | 1 | .5 |
| | Total | 212 | 100.0 |
| Unselected Cases | | 0 | .0 |
| Total | | 212 | 100.0 |

a. If weight is in effect, see classification table for the total number of cases.

### Dependent Variable Encoding

| Original Value | Internal Value |
|---|---|
| Others | 0 |
| Guangzhou | 1 |

Categorical Variables Codings

| | | Frequency | Parameter coding (1) | (2) | (3) |
|---|---|---|---|---|---|
| Duration in the country, regrouped | 1-4 days | 39 | 1.000 | .000 | .000 |
| | 5-9 days | 80 | .000 | 1.000 | .000 |
| | 10-15 days | 61 | .000 | .000 | 1.000 |
| | >15 days | 31 | .000 | .000 | .000 |
| Place of origins, regrouped | Americas | 56 | 1.000 | .000 | .000 |
| | UK | 47 | .000 | 1.000 | .000 |
| | Japan | 60 | .000 | .000 | 1.000 |
| | GCR | 48 | .000 | .000 | .000 |
| Number of visitations previously, regreouped | 0 times | 109 | 1.000 | .000 | |
| | once or twice | 46 | .000 | 1.000 | |
| | above twice | 56 | .000 | .000 | |
| Attractiveness of main destination, regrouped | very much | 158 | 1.000 | .000 | |
| | neutral | 39 | .000 | 1.000 | |
| | not much | 14 | .000 | .000 | |
| Income level, regrouped | Below US$30000 | 84 | 1.000 | .000 | |
| | US$30000-40000 | 26 | .000 | 1.000 | |
| | Above US$40000 | 101 | .000 | .000 | |
| Final level of education, regrouped | high school and below | 47 | 1.000 | .000 | |
| | Undergraduate/College | 90 | .000 | 1.000 | |
| | Postgraduate and above | 74 | .000 | .000 | |
| Trip expense, regrouped | below US$800 | 60 | 1.000 | .000 | |
| | US$800-1000 | 29 | .000 | 1.000 | |
| | above US$1000 | 122 | .000 | .000 | |
| Geographic distance, regrouped | far | 88 | 1.000 | .000 | |
| | medium | 111 | .000 | 1.000 | |
| | not far | 12 | .000 | .000 | |
| Type of travel group, regrouped | Package | 129 | 1.000 | | |
| | Family/Friends/alone | 82 | .000 | | |
| Ethnic Chinese | Yes | 55 | 1.000 | | |
| | No | 156 | .000 | | |
| Marital status | Single | 67 | 1.000 | | |
| | Married | 144 | .000 | | |
| Age categories, regrouped | Below 44 | 88 | 1.000 | | |
| | above 45 | 123 | .000 | | |
| Gender | Male | 121 | 1.000 | | |
| | Female | 90 | .000 | | |
| Transport of arrival, regrouped | Air | 190 | 1.000 | | |
| | Rail/Sea/Motor/Foot | 21 | .000 | | |

# Block 0: Beginning Block

Iteration History[a,b,c]

| Iteration | | -2 Log likelihood | Coefficients Constant |
|---|---|---|---|
| Step 0 | 1 | 152.141 | -1.564 |
| | 2 | 145.516 | -2.012 |
| | 3 | 145.349 | -2.098 |
| | 4 | 145.349 | -2.101 |

a. Constant is included in the model.

b. Initial -2 Log Likelihood: 145.349

c. Estimation terminated at iteration number 4 because log-likelihood decreased by less than .010 percent.

Classification Table[a,b]

| Observed | | | Predicted: Guangzhou vs. Others: Others | Predicted: Guangzhou vs. Others: Guangzhou | Predicted: Percentage Correct |
|---|---|---|---|---|---|
| Step 0 | Guangzhou vs. Others | Others | 188 | 0 | 100.0 |
| | | Guangzhou | 23 | 0 | .0 |
| | Overall Percentage | | | | 89.1 |

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 0 | Constant | -2.101 | .221 | 90.455 | 1 | .000 | .122 |

Variables not in the Equation

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 0 | Variables | REDTRANS(1) | 51.347 | 1 | .000 |
| | | REGGROUP(1) | 16.864 | 1 | .000 |
| | | ENTRYDUR | .074 | 1 | .786 |
| | | REGATTRA | 1.295 | 2 | .523 |
| | | REGATTRA(1) | 1.282 | 1 | .258 |
| | | REGATTRA(2) | .990 | 1 | .320 |
| | | REGDISTA | 21.358 | 2 | .000 |
| | | REGDISTA(1) | 4.233 | 1 | .040 |
| | | REGDISTA(2) | .002 | 1 | .965 |
| | | REGORIGI | 17.889 | 3 | .000 |
| | | REGORIGI(1) | 1.108 | 1 | .292 |
| | | REGORIGI(2) | 4.792 | 1 | .029 |
| | | REGORIGI(3) | .569 | 1 | .451 |
| | | ETHNIC(1) | 12.424 | 1 | .000 |
| | | GENDER(1) | .007 | 1 | .933 |
| | | REGSPEND | 17.255 | 2 | .000 |
| | | REGSPEND(1) | 17.161 | 1 | .000 |
| | | REGSPEND(2) | .555 | 1 | .456 |
| | | REGEDUCA | 1.146 | 2 | .564 |
| | | REGEDUCA(1) | .004 | 1 | .948 |
| | | REGEDUCA(2) | .956 | 1 | .328 |
| | | REGINCOM | 2.272 | 2 | .321 |
| | | REGINCOM(1) | .005 | 1 | .944 |
| | | REGINCOM(2) | 2.119 | 1 | .146 |
| | | REGAGE(1) | 5.869 | 1 | .015 |
| | | MARRIAGE(1) | .021 | 1 | .886 |
| | | UNDER | 15.993 | 1 | .000 |
| | | HARMO | 5.613 | 1 | .018 |
| | | REGPREV | 19.931 | 2 | .000 |
| | | REGPREV(1) | 9.254 | 1 | .002 |
| | | REGPREV(2) | 1.161 | 1 | .281 |
| | | REGTOTDU | 31.598 | 3 | .000 |
| | | REGTOTDU(1) | 30.780 | 1 | .000 |
| | | REGTOTDU(2) | 6.783 | 1 | .009 |
| | | REGTOTDU(3) | 3.162 | 1 | .075 |
| | Overall Statistics | | 87.381 | 27 | .000 |

# Block 1: Method = Backward Stepwise (Likelihood Ratio)

Omnibus Tests of Model Coefficients

| | | Chi-square | df | Sig. |
|---|---|---|---|---|
| Step 1 | Step | 85.132 | 27 | .000 |
| | Block | 85.132 | 27 | .000 |
| | Model | 85.132 | 27 | .000 |
| Step 2[a] | Step | -.013 | 2 | .994 |
| | Block | 85.119 | 25 | .000 |
| | Model | 85.119 | 24 | .000 |
| Step 3[a] | Step | -.049 | 1 | .825 |
| | Block | 85.070 | 24 | .000 |
| | Model | 85.070 | 22 | .000 |
| Step 4[a] | Step | -.094 | 1 | .759 |
| | Block | 84.976 | 23 | .000 |
| | Model | 84.976 | 21 | .000 |
| Step 5[a] | Step | -1.012 | 2 | .603 |
| | Block | 83.964 | 21 | .000 |
| | Model | 83.964 | 20 | .000 |
| Step 6[a] | Step | -1.066 | 1 | .302 |
| | Block | 82.898 | 20 | .000 |
| | Model | 82.898 | 18 | .000 |
| Step 7[a] | Step | -3.651 | 2 | .161 |
| | Block | 79.248 | 18 | .000 |
| | Model | 79.248 | 17 | .000 |
| Step 8[a] | Step | -1.217 | 1 | .270 |
| | Block | 78.031 | 17 | .000 |
| | Model | 78.031 | 15 | .000 |
| Step 9[a] | Step | -1.217 | 1 | .270 |
| | Block | 76.814 | 16 | .000 |
| | Model | 76.814 | 14 | .000 |
| Step 10[a] | Step | -2.466 | 1 | .116 |
| | Block | 74.348 | 15 | .000 |
| | Model | 74.348 | 13 | .000 |

a. A negative Chi-squares value indicates that the Chi-squares value has decreased from the previous step.

Model Summary

| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|---|
| 1 | 60.218 | .332 | .667 |
| 2 | 60.230 | .332 | .667 |
| 3 | 60.279 | .332 | .666 |
| 4 | 60.373 | .332 | .666 |
| 5 | 61.385 | .328 | .659 |
| 6 | 62.451 | .325 | .653 |
| 7 | 66.102 | .313 | .629 |
| 8 | 67.318 | .309 | .621 |
| 9 | 68.535 | .305 | .613 |
| 10 | 71.001 | .297 | .597 |

Hosmer and Lemeshow Test

| Step | Chi-square | df | Sig. |
|---|---|---|---|
| 1 | 1.423 | 8 | .994 |
| 2 | 9.822 | 8 | .278 |
| 3 | 14.468 | 8 | .070 |
| 4 | 14.482 | 8 | .070 |
| 5 | 12.563 | 8 | .128 |
| 6 | 7.331 | 8 | .501 |
| 7 | 23.478 | 8 | .003 |
| 8 | 8.915 | 8 | .349 |
| 9 | 6.639 | 8 | .576 |
| 10 | 6.612 | 8 | .579 |

Contingency Table for Hosmer and Lemeshow Test

| | | Guangzhou vs. Others = Others | | Guangzhou vs. Others = Guangzhou | | |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | Total |
| Step 1 | 1 | 21 | 21.000 | 0 | .000 | 21 |
| | 2 | 21 | 20.996 | 0 | .004 | 21 |
| | 3 | 21 | 20.984 | 0 | .016 | 21 |
| | 4 | 21 | 20.957 | 0 | .043 | 21 |
| | 5 | 21 | 20.877 | 0 | .123 | 21 |
| | 6 | 21 | 20.750 | 0 | .250 | 21 |
| | 7 | 20 | 20.355 | 1 | .645 | 21 |
| | 8 | 20 | 19.269 | 1 | 1.731 | 21 |
| | 9 | 16 | 17.146 | 5 | 3.854 | 21 |
| | 10 | 6 | 5.666 | 16 | 16.334 | 22 |
| Step 2 | 1 | 21 | 20.997 | 0 | .003 | 21 |
| | 2 | 21 | 20.987 | 0 | .013 | 21 |
| | 3 | 21 | 20.957 | 0 | .043 | 21 |
| | 4 | 21 | 20.880 | 0 | .120 | 21 |
| | 5 | 21 | 20.782 | 0 | .218 | 21 |
| | 6 | 19 | 20.640 | 2 | .360 | 21 |
| | 7 | 20 | 20.282 | 1 | .718 | 21 |
| | 8 | 19 | 19.225 | 2 | 1.775 | 21 |
| | 9 | 19 | 16.648 | 2 | 4.352 | 21 |
| | 10 | 6 | 6.602 | 16 | 15.398 | 22 |
| Step 3 | 1 | 21 | 20.997 | 0 | .003 | 21 |
| | 2 | 21 | 20.985 | 0 | .015 | 21 |
| | 3 | 21 | 20.954 | 0 | .046 | 21 |
| | 4 | 21 | 20.894 | 0 | .106 | 21 |
| | 5 | 21 | 20.802 | 0 | .198 | 21 |
| | 6 | 19 | 20.633 | 2 | .367 | 21 |
| | 7 | 20 | 20.203 | 1 | .797 | 21 |
| | 8 | 19 | 19.255 | 2 | 1.745 | 21 |
| | 9 | 21 | 16.793 | 0 | 4.207 | 21 |
| | 10 | 4 | 6.483 | 18 | 15.517 | 22 |
| Step 4 | 1 | 21 | 20.997 | 0 | .003 | 21 |
| | 2 | 21 | 20.985 | 0 | .015 | 21 |
| | 3 | 21 | 20.954 | 0 | .046 | 21 |
| | 4 | 21 | 20.894 | 0 | .106 | 21 |
| | 5 | 21 | 20.801 | 0 | .199 | 21 |
| | 6 | 19 | 20.633 | 2 | .367 | 21 |
| | 7 | 20 | 20.208 | 1 | .792 | 21 |
| | 8 | 19 | 19.256 | 2 | 1.744 | 21 |
| | 9 | 21 | 16.785 | 0 | 4.215 | 21 |
| | 10 | 4 | 6.486 | 18 | 15.514 | 22 |
| Step 5 | 1 | 21 | 20.997 | 0 | .003 | 21 |
| | 2 | 21 | 20.984 | 0 | .016 | 21 |
| | 3 | 21 | 20.956 | 0 | .044 | 21 |
| | 4 | 21 | 20.886 | 0 | .114 | 21 |
| | 5 | 20 | 20.783 | 1 | .217 | 21 |
| | 6 | 21 | 20.615 | 0 | .385 | 21 |
| | 7 | 19 | 20.241 | 2 | .759 | 21 |
| | 8 | 19 | 19.250 | 2 | 1.750 | 21 |
| | 9 | 21 | 16.650 | 0 | 4.350 | 21 |
| | 10 | 4 | 6.636 | 18 | 15.364 | 22 |
| Step 6 | 1 | 21 | 20.997 | 0 | .003 | 21 |
| | 2 | 21 | 20.981 | 0 | .019 | 21 |
| | 3 | 21 | 20.950 | 0 | .050 | 21 |
| | 4 | 21 | 20.875 | 0 | .125 | 21 |
| | 5 | 21 | 20.762 | 0 | .238 | 21 |
| | 6 | 20 | 20.580 | 1 | .420 | 21 |
| | 7 | 19 | 20.229 | 2 | .771 | 21 |
| | 8 | 19 | 19.305 | 2 | 1.695 | 21 |
| | 9 | 20 | 16.588 | 1 | 4.412 | 21 |
| | 10 | 5 | 6.731 | 17 | 15.269 | 22 |

Contingency Table for Hosmer and Lemeshow Test

| | | Guangzhou vs. Others = Others | | Guangzhou vs. Others = Guangzhou | | |
|---|---|---|---|---|---|---|
| | | Observed | Expected | Observed | Expected | Total |
| Step 7 | 1 | 21 | 20.996 | 0 | .004 | 21 |
| | 2 | 21 | 20.976 | 0 | .024 | 21 |
| | 3 | 21 | 20.939 | 0 | .061 | 21 |
| | 4 | 21 | 20.864 | 0 | .136 | 21 |
| | 5 | 21 | 20.748 | 0 | .252 | 21 |
| | 6 | 18 | 20.613 | 3 | .387 | 21 |
| | 7 | 21 | 20.219 | 0 | .781 | 21 |
| | 8 | 19 | 19.358 | 2 | 1.642 | 21 |
| | 9 | 20 | 16.510 | 1 | 4.490 | 21 |
| | 10 | 5 | 6.775 | 17 | 15.225 | 22 |
| Step 8 | 1 | 21 | 20.995 | 0 | .005 | 21 |
| | 2 | 21 | 20.969 | 0 | .031 | 21 |
| | 3 | 21 | 20.924 | 0 | .076 | 21 |
| | 4 | 20 | 20.837 | 1 | .163 | 21 |
| | 5 | 20 | 20.717 | 1 | .283 | 21 |
| | 6 | 20 | 20.485 | 1 | .515 | 21 |
| | 7 | 20 | 20.178 | 1 | .822 | 21 |
| | 8 | 20 | 19.258 | 1 | 1.742 | 21 |
| | 9 | 19 | 16.673 | 2 | 4.327 | 21 |
| | 10 | 6 | 6.963 | 16 | 15.037 | 22 |
| Step 9 | 1 | 21 | 20.992 | 0 | .008 | 21 |
| | 2 | 21 | 20.956 | 0 | .044 | 21 |
| | 3 | 21 | 20.903 | 0 | .097 | 21 |
| | 4 | 20 | 20.806 | 1 | .194 | 21 |
| | 5 | 20 | 20.664 | 1 | .336 | 21 |
| | 6 | 20 | 20.471 | 1 | .529 | 21 |
| | 7 | 21 | 20.105 | 0 | .895 | 21 |
| | 8 | 20 | 19.189 | 1 | 1.811 | 21 |
| | 9 | 17 | 16.850 | 4 | 4.150 | 21 |
| | 10 | 7 | 7.065 | 15 | 14.935 | 22 |
| Step 10 | 1 | 21 | 20.991 | 0 | .009 | 21 |
| | 2 | 21 | 20.953 | 0 | .047 | 21 |
| | 3 | 21 | 20.890 | 0 | .110 | 21 |
| | 4 | 20 | 20.799 | 1 | .201 | 21 |
| | 5 | 20 | 20.659 | 1 | .341 | 21 |
| | 6 | 21 | 21.421 | 1 | .579 | 22 |
| | 7 | 21 | 20.044 | 0 | .956 | 21 |
| | 8 | 19 | 19.161 | 2 | 1.839 | 21 |
| | 9 | 18 | 16.601 | 3 | 4.399 | 21 |
| | 10 | 6 | 6.480 | 15 | 14.520 | 21 |

Classification Table[a]

| Observed | | | Predicted: Guangzhou vs. Others: Others | Predicted: Guangzhou vs. Others: Guangzhou | Percentage Correct |
|---|---|---|---|---|---|
| Step 1 | Guangzhou vs. Others | Others | 186 | 2 | 98.9 |
| | | Guangzhou | 8 | 15 | 65.2 |
| | Overall Percentage | | | | 95.3 |
| Step 2 | Guangzhou vs. Others | Others | 186 | 2 | 98.9 |
| | | Guangzhou | 8 | 15 | 65.2 |
| | Overall Percentage | | | | 95.3 |
| Step 3 | Guangzhou vs. Others | Others | 186 | 2 | 98.9 |
| | | Guangzhou | 8 | 15 | 65.2 |
| | Overall Percentage | | | | 95.3 |
| Step 4 | Guangzhou vs. Others | Others | 186 | 2 | 98.9 |
| | | Guangzhou | 9 | 14 | 60.9 |
| | Overall Percentage | | | | 94.8 |
| Step 5 | Guangzhou vs. Others | Others | 186 | 2 | 98.9 |
| | | Guangzhou | 10 | 13 | 56.5 |
| | Overall Percentage | | | | 94.3 |
| Step 6 | Guangzhou vs. Others | Others | 186 | 2 | 98.9 |
| | | Guangzhou | 8 | 15 | 65.2 |
| | Overall Percentage | | | | 95.3 |
| Step 7 | Guangzhou vs. Others | Others | 184 | 4 | 97.9 |
| | | Guangzhou | 10 | 13 | 56.5 |
| | Overall Percentage | | | | 93.4 |
| Step 8 | Guangzhou vs. Others | Others | 185 | 3 | 98.4 |
| | | Guangzhou | 11 | 12 | 52.2 |
| | Overall Percentage | | | | 93.4 |
| Step 9 | Guangzhou vs. Others | Others | 184 | 4 | 97.9 |
| | | Guangzhou | 10 | 13 | 56.5 |
| | Overall Percentage | | | | 93.4 |
| Step 10 | Guangzhou vs. Others | Others | 184 | 4 | 97.9 |
| | | Guangzhou | 9 | 14 | 60.9 |
| | Overall Percentage | | | | 93.8 |

a. The cut value is .500

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | 95.0% C.I.for EXP(B) Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 1[a] | REDTRANS(1) | -3.090 | 1.911 | 2.615 | 1 | .106 | .045 | .001 | 1.926 |
| | REGGROUP(1) | -1.635 | .968 | 2.853 | 1 | .091 | .195 | .029 | 1.300 |
| | ENTRYDUR | .024 | .111 | .045 | 1 | .831 | 1.024 | .824 | 1.273 |
| | REGATTRA | | | 3.229 | 2 | .199 | | | |
| | REGATTRA(1) | -1.737 | 1.741 | .996 | 1 | .318 | .176 | .006 | 5.337 |
| | REGATTRA(2) | .167 | 1.818 | .008 | 1 | .927 | 1.181 | .033 | 41.701 |
| | REGDISTA | | | .956 | 2 | .620 | | | |
| | REGDISTA(1) | -1.976 | 2.022 | .955 | 1 | .328 | .139 | .003 | 7.290 |
| | REGDISTA(2) | -.968 | 1.421 | .464 | 1 | .496 | .380 | .023 | 6.155 |
| | REGORIGI | | | 4.444 | 3 | .217 | | | |
| | REGORIGI(1) | .418 | 4.426 | .009 | 1 | .925 | 1.518 | .000 | 8884.568 |
| | REGORIGI(2) | -2.920 | 4.604 | .402 | 1 | .526 | .054 | .000 | 447.689 |
| | REGORIGI(3) | -2.426 | 4.274 | .322 | 1 | .570 | .088 | .000 | 384.210 |
| | ETHNIC(1) | -7.721 | 4.618 | 2.795 | 1 | .095 | .000 | .000 | 3.784 |
| | GENDER(1) | -.226 | .909 | .062 | 1 | .803 | .797 | .134 | 4.732 |
| | REGSPEND | | | 3.969 | 2 | .137 | | | |
| | REGSPEND(1) | 2.377 | 1.213 | 3.837 | 1 | .050 | 10.770 | .999 | 116.136 |
| | REGSPEND(2) | .540 | 1.463 | .136 | 1 | .712 | 1.715 | .098 | 30.173 |
| | REGEDUCA | | | .013 | 2 | .994 | | | |
| | REGEDUCA(1) | .091 | 1.454 | .004 | 1 | .950 | 1.095 | .063 | 18.941 |
| | REGEDUCA(2) | .123 | 1.093 | .013 | 1 | .910 | 1.131 | .133 | 9.632 |
| | REGINCOM | | | 9.015 | 2 | .011 | | | |
| | REGINCOM(1) | -2.786 | 1.549 | 3.235 | 1 | .072 | .062 | .003 | 1.284 |
| | REGINCOM(2) | 2.828 | 1.258 | 5.056 | 1 | .025 | 16.908 | 1.438 | 198.883 |
| | REGAGE(1) | .860 | 1.189 | .523 | 1 | .470 | 2.363 | .230 | 24.293 |
| | MARRIAGE(1) | 1.096 | 1.067 | 1.056 | 1 | .304 | 2.992 | .370 | 24.194 |
| | UNDER | -1.033 | .751 | 1.894 | 1 | .169 | .356 | .082 | 1.550 |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 1a | HARMO | -1.324 | .773 | 2.937 | 1 | .087 | .266 | .059 | 1.210 |
| | REGPREV | | | 6.089 | 2 | .048 | | | |
| | REGPREV(1) | -3.634 | 1.525 | 5.680 | 1 | .017 | .026 | .001 | .524 |
| | REGPREV(2) | -2.680 | 1.503 | 3.179 | 1 | .075 | .069 | .004 | 1.305 |
| | REGTOTDU | | | 5.326 | 3 | .149 | | | |
| | REGTOTDU(1) | 1.553 | 1.570 | .979 | 1 | .323 | 4.727 | .218 | 102.586 |
| | REGTOTDU(2) | -1.985 | 1.379 | 2.072 | 1 | .150 | .137 | .009 | 2.051 |
| | REGTOTDU(3) | -.456 | 1.346 | .115 | 1 | .735 | .634 | .045 | 8.870 |
| | Constant | 7.127 | 5.321 | 1.794 | 1 | .180 | 1244.674 | | |
| Step 2a | REDTRANS(1) | -3.079 | 1.900 | 2.626 | 1 | .105 | .046 | .001 | 1.906 |
| | REGGROUP(1) | -1.659 | .915 | 3.288 | 1 | .070 | .190 | .032 | 1.144 |
| | ENTRYDUR | .025 | .111 | .050 | 1 | .824 | 1.025 | .825 | 1.273 |
| | REGATTRA | | | 3.459 | 2 | .177 | | | |
| | REGATTRA(1) | -1.695 | 1.694 | 1.000 | 1 | .317 | .184 | .007 | 5.084 |
| | REGATTRA(2) | .207 | 1.759 | .014 | 1 | .906 | 1.230 | .039 | 38.679 |
| | REGDISTA | | | .943 | 2 | .624 | | | |
| | REGDISTA(1) | -1.944 | 2.002 | .943 | 1 | .332 | .143 | .003 | 7.245 |
| | REGDISTA(2) | -.967 | 1.422 | .462 | 1 | .497 | .380 | .023 | 6.176 |
| | REGORIGI | | | 5.013 | 3 | .171 | | | |
| | REGORIGI(1) | .391 | 4.455 | .008 | 1 | .930 | 1.479 | .000 | 9168.676 |
| | REGORIGI(2) | -2.929 | 4.675 | .393 | 1 | .531 | .053 | .000 | 509.533 |
| | REGORIGI(3) | -2.377 | 4.319 | .303 | 1 | .582 | .093 | .000 | 440.216 |
| | ETHNIC(1) | -7.698 | 4.572 | 2.835 | 1 | .092 | .000 | .000 | 3.536 |
| | GENDER(1) | -.237 | .902 | .069 | 1 | .793 | .789 | .135 | 4.624 |
| | REGSPEND | | | 4.204 | 2 | .122 | | | |
| | REGSPEND(1) | 2.401 | 1.189 | 4.075 | 1 | .044 | 11.029 | 1.072 | 113.432 |
| | REGSPEND(2) | .554 | 1.460 | .144 | 1 | .704 | 1.741 | .100 | 30.426 |
| | REGINCOM | | | 9.258 | 2 | .010 | | | |
| | REGINCOM(1) | -2.771 | 1.528 | 3.287 | 1 | .070 | .063 | .003 | 1.252 |
| | REGINCOM(2) | 2.819 | 1.249 | 5.092 | 1 | .024 | 16.767 | 1.449 | 194.069 |
| | REGAGE(1) | .823 | 1.053 | .612 | 1 | .434 | 2.278 | .289 | 17.933 |
| | MARRIAGE(1) | 1.128 | 1.017 | 1.229 | 1 | .268 | 3.088 | .421 | 22.661 |
| | UNDER | -1.028 | .686 | 2.250 | 1 | .134 | .358 | .093 | 1.371 |
| | HARMO | -1.334 | .726 | 3.371 | 1 | .066 | .263 | .063 | 1.094 |
| | REGPREV | | | 6.592 | 2 | .037 | | | |
| | REGPREV(1) | -3.640 | 1.439 | 6.399 | 1 | .011 | .026 | .002 | .441 |
| | REGPREV(2) | -2.663 | 1.489 | 3.199 | 1 | .074 | .070 | .004 | 1.291 |
| | REGTOTDU | | | 6.086 | 3 | .108 | | | |
| | REGTOTDU(1) | 1.571 | 1.554 | 1.022 | 1 | .312 | 4.811 | .229 | 101.231 |
| | REGTOTDU(2) | -1.979 | 1.339 | 2.184 | 1 | .139 | .138 | .010 | 1.907 |
| | REGTOTDU(3) | -.457 | 1.339 | .116 | 1 | .733 | .633 | .046 | 8.730 |
| | Constant | 7.132 | 5.347 | 1.779 | 1 | .182 | 1251.491 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 3a | REDTRANS(1) | -3.019 | 1.868 | 2.611 | 1 | .106 | .049 | .001 | 1.901 |
| | REGGROUP(1) | -1.698 | .901 | 3.550 | 1 | .060 | .183 | .031 | 1.071 |
| | REGATTRA | | | 3.491 | 2 | .175 | | | |
| | REGATTRA(1) | -1.774 | 1.655 | 1.149 | 1 | .284 | .170 | .007 | 4.347 |
| | REGATTRA(2) | .121 | 1.717 | .005 | 1 | .944 | 1.129 | .039 | 32.690 |
| | REGDISTA | | | 1.000 | 2 | .606 | | | |
| | REGDISTA(1) | -1.990 | 1.991 | 1.000 | 1 | .317 | .137 | .003 | 6.761 |
| | REGDISTA(2) | -.986 | 1.415 | .485 | 1 | .486 | .373 | .023 | 5.980 |
| | REGORIGI | | | 4.981 | 3 | .173 | | | |
| | REGORIGI(1) | .426 | 4.232 | .010 | 1 | .920 | 1.532 | .000 | 6134.366 |
| | REGORIGI(2) | -2.877 | 4.456 | .417 | 1 | .518 | .056 | .000 | 349.094 |
| | REGORIGI(3) | -2.316 | 4.079 | .322 | 1 | .570 | .099 | .000 | 292.654 |
| | ETHNIC(1) | -7.671 | 4.348 | 3.112 | 1 | .078 | .000 | .000 | 2.344 |
| | GENDER(1) | -.271 | .885 | .094 | 1 | .759 | .762 | .134 | 4.324 |
| | REGSPEND | | | 4.330 | 2 | .115 | | | |
| | REGSPEND(1) | 2.357 | 1.163 | 4.108 | 1 | .043 | 10.563 | 1.081 | 103.229 |
| | REGSPEND(2) | .656 | 1.376 | .228 | 1 | .633 | 1.927 | .130 | 28.564 |
| | REGINCOM | | | 9.452 | 2 | .009 | | | |
| | REGINCOM(1) | -2.737 | 1.505 | 3.307 | 1 | .069 | .065 | .003 | 1.237 |
| | REGINCOM(2) | 2.789 | 1.238 | 5.075 | 1 | .024 | 16.272 | 1.437 | 184.242 |
| | REGAGE(1) | .871 | 1.027 | .720 | 1 | .396 | 2.390 | .319 | 17.897 |
| | MARRIAGE(1) | 1.099 | 1.007 | 1.192 | 1 | .275 | 3.002 | .417 | 21.607 |
| | UNDER | -1.046 | .683 | 2.346 | 1 | .126 | .351 | .092 | 1.339 |
| | HARMO | -1.361 | .721 | 3.559 | 1 | .059 | .256 | .062 | 1.054 |
| | REGPREV | | | 6.854 | 2 | .032 | | | |
| | REGPREV(1) | -3.689 | 1.429 | 6.665 | 1 | .010 | .025 | .002 | .411 |
| | REGPREV(2) | -2.691 | 1.490 | 3.262 | 1 | .071 | .068 | .004 | 1.258 |
| | REGTOTDU | | | 6.166 | 3 | .104 | | | |
| | REGTOTDU(1) | 1.436 | 1.423 | 1.018 | 1 | .313 | 4.203 | .258 | 68.364 |
| | REGTOTDU(2) | -2.037 | 1.311 | 2.415 | 1 | .120 | .130 | .010 | 1.702 |
| | REGTOTDU(3) | -.486 | 1.341 | .132 | 1 | .717 | .615 | .044 | 8.514 |
| | Constant | 7.344 | 5.068 | 2.099 | 1 | .147 | 1546.551 | | |
| Step 4a | REDTRANS(1) | -3.091 | 1.863 | 2.753 | 1 | .097 | .045 | .001 | 1.751 |
| | REGGROUP(1) | -1.660 | .888 | 3.494 | 1 | .062 | .190 | .033 | 1.084 |
| | REGATTRA | | | 3.728 | 2 | .155 | | | |
| | REGATTRA(1) | -1.807 | 1.631 | 1.227 | 1 | .268 | .164 | .007 | 4.014 |
| | REGATTRA(2) | .123 | 1.696 | .005 | 1 | .942 | 1.131 | .041 | 31.408 |
| | REGDISTA | | | 1.056 | 2 | .590 | | | |
| | REGDISTA(1) | -2.026 | 1.973 | 1.054 | 1 | .305 | .132 | .003 | 6.307 |
| | REGDISTA(2) | -1.020 | 1.404 | .528 | 1 | .467 | .361 | .023 | 5.647 |
| | REGORIGI | | | 5.991 | 3 | .112 | | | |
| | REGORIGI(1) | .393 | 4.500 | .008 | 1 | .930 | 1.481 | .000 | 10029.560 |
| | REGORIGI(2) | -3.080 | 4.681 | .433 | 1 | .511 | .046 | .000 | 443.563 |
| | REGORIGI(3) | -2.416 | 4.348 | .309 | 1 | .578 | .089 | .000 | 448.501 |
| | ETHNIC(1) | -7.814 | 4.605 | 2.880 | 1 | .090 | .000 | .000 | 3.357 |
| | REGSPEND | | | 4.418 | 2 | .110 | | | |
| | REGSPEND(1) | 2.354 | 1.147 | 4.210 | 1 | .040 | 10.531 | 1.111 | 99.805 |
| | REGSPEND(2) | .649 | 1.361 | .228 | 1 | .633 | 1.914 | .133 | 27.563 |
| | REGINCOM | | | 9.927 | 2 | .007 | | | |
| | REGINCOM(1) | -2.725 | 1.504 | 3.283 | 1 | .070 | .066 | .003 | 1.250 |
| | REGINCOM(2) | 2.869 | 1.209 | 5.630 | 1 | .018 | 17.616 | 1.647 | 188.398 |
| | REGAGE(1) | .958 | .990 | .936 | 1 | .333 | 2.605 | .374 | 18.132 |
| | MARRIAGE(1) | 1.136 | 1.010 | 1.264 | 1 | .261 | 3.115 | .430 | 22.570 |
| | UNDER | -1.024 | .682 | 2.253 | 1 | .133 | .359 | .094 | 1.368 |
| | HARMO | -1.323 | .712 | 3.455 | 1 | .063 | .266 | .066 | 1.075 |
| | REGPREV | | | 6.820 | 2 | .033 | | | |
| | REGPREV(1) | -3.689 | 1.430 | 6.651 | 1 | .010 | .025 | .002 | .413 |
| | REGPREV(2) | -2.666 | 1.482 | 3.238 | 1 | .072 | .070 | .004 | 1.269 |
| | REGTOTDU | | | 6.344 | 3 | .096 | | | |
| | REGTOTDU(1) | 1.365 | 1.392 | .961 | 1 | .327 | 3.915 | .256 | 59.985 |
| | REGTOTDU(2) | -2.121 | 1.283 | 2.734 | 1 | .098 | .120 | .010 | 1.482 |
| | REGTOTDU(3) | -.546 | 1.305 | .175 | 1 | .676 | .579 | .045 | 7.480 |
| | Constant | 7.387 | 5.303 | 1.940 | 1 | .164 | 1614.179 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 5[a] | REDTRANS(1) | -3.344 | 1.805 | 3.432 | 1 | .064 | .035 | .001 | 1.214 |
| | REGGROUP(1) | -1.435 | .816 | 3.091 | 1 | .079 | .238 | .048 | 1.179 |
| | REGATTRA | | | 3.766 | 2 | .152 | | | |
| | REGATTRA(1) | -1.877 | 1.543 | 1.479 | 1 | .224 | .153 | .007 | 3.151 |
| | REGATTRA(2) | -.022 | 1.602 | .000 | 1 | .989 | .979 | .042 | 22.623 |
| | REGORIGI | | | 5.718 | 3 | .126 | | | |
| | REGORIGI(1) | -.356 | 4.942 | .005 | 1 | .943 | .700 | .000 | 11279.388 |
| | REGORIGI(2) | -3.782 | 5.116 | .546 | 1 | .460 | .023 | .000 | 515.576 |
| | REGORIGI(3) | -2.248 | 4.797 | .220 | 1 | .639 | .106 | .000 | 1278.395 |
| | ETHNIC(1) | -7.406 | 5.009 | 2.187 | 1 | .139 | .001 | .000 | 11.139 |
| | REGSPEND | | | 4.539 | 2 | .103 | | | |
| | REGSPEND(1) | 2.247 | 1.090 | 4.248 | 1 | .039 | 9.460 | 1.117 | 80.144 |
| | REGSPEND(2) | .418 | 1.320 | .100 | 1 | .752 | 1.519 | .114 | 20.205 |
| | REGINCOM | | | 10.611 | 2 | .005 | | | |
| | REGINCOM(1) | -2.725 | 1.468 | 3.444 | 1 | .063 | .066 | .004 | 1.165 |
| | REGINCOM(2) | 2.610 | 1.120 | 5.435 | 1 | .020 | 13.602 | 1.516 | 122.064 |
| | REGAGE(1) | 1.114 | .964 | 1.335 | 1 | .248 | 3.047 | .460 | 20.164 |
| | MARRIAGE(1) | 1.056 | 1.013 | 1.087 | 1 | .297 | 2.874 | .395 | 20.915 |
| | UNDER | -.975 | .658 | 2.194 | 1 | .139 | .377 | .104 | 1.370 |
| | HARMO | -1.307 | .712 | 3.367 | 1 | .067 | .271 | .067 | 1.093 |
| | REGPREV | | | 6.681 | 2 | .035 | | | |
| | REGPREV(1) | -3.587 | 1.402 | 6.548 | 1 | .011 | .028 | .002 | .432 |
| | REGPREV(2) | -2.514 | 1.438 | 3.059 | 1 | .080 | .081 | .005 | 1.354 |
| | REGTOTDU | | | 6.715 | 3 | .082 | | | |
| | REGTOTDU(1) | 1.527 | 1.347 | 1.285 | 1 | .257 | 4.604 | .329 | 64.516 |
| | REGTOTDU(2) | -1.918 | 1.268 | 2.288 | 1 | .130 | .147 | .012 | 1.764 |
| | REGTOTDU(3) | -.354 | 1.263 | .079 | 1 | .779 | .702 | .059 | 8.335 |
| | Constant | 6.280 | 5.565 | 1.273 | 1 | .259 | 533.636 | | |
| Step 6[a] | REDTRANS(1) | -2.669 | 1.668 | 2.560 | 1 | .110 | .069 | .003 | 1.823 |
| | REGGROUP(1) | -1.624 | .799 | 4.135 | 1 | .042 | .197 | .041 | .943 |
| | REGATTRA | | | 3.282 | 2 | .194 | | | |
| | REGATTRA(1) | -1.532 | 1.472 | 1.083 | 1 | .298 | .216 | .012 | 3.871 |
| | REGATTRA(2) | .214 | 1.549 | .019 | 1 | .890 | 1.239 | .060 | 25.779 |
| | REGORIGI | | | 5.302 | 3 | .151 | | | |
| | REGORIGI(1) | -.301 | 4.433 | .005 | 1 | .946 | .740 | .000 | 4389.781 |
| | REGORIGI(2) | -3.324 | 4.590 | .524 | 1 | .469 | .036 | .000 | 290.760 |
| | REGORIGI(3) | -2.410 | 4.259 | .320 | 1 | .571 | .090 | .000 | 378.876 |
| | ETHNIC(1) | -7.104 | 4.454 | 2.544 | 1 | .111 | .001 | .000 | 5.085 |
| | REGSPEND | | | 4.439 | 2 | .109 | | | |
| | REGSPEND(1) | 2.151 | 1.085 | 3.928 | 1 | .047 | 8.590 | 1.024 | 72.046 |
| | REGSPEND(2) | .193 | 1.322 | .021 | 1 | .884 | 1.213 | .091 | 16.187 |
| | REGINCOM | | | 10.327 | 2 | .006 | | | |
| | REGINCOM(1) | -2.223 | 1.309 | 2.883 | 1 | .090 | .108 | .008 | 1.409 |
| | REGINCOM(2) | 2.567 | 1.119 | 5.264 | 1 | .022 | 13.031 | 1.454 | 116.805 |
| | REGAGE(1) | 1.321 | .917 | 2.076 | 1 | .150 | 3.749 | .621 | 22.630 |
| | UNDER | -.936 | .660 | 2.011 | 1 | .156 | .392 | .108 | 1.430 |
| | HARMO | -1.130 | .680 | 2.757 | 1 | .097 | .323 | .085 | 1.226 |
| | REGPREV | | | 5.971 | 2 | .051 | | | |
| | REGPREV(1) | -3.257 | 1.345 | 5.865 | 1 | .015 | .039 | .003 | .537 |
| | REGPREV(2) | -2.275 | 1.389 | 2.684 | 1 | .101 | .103 | .007 | 1.563 |
| | REGTOTDU | | | 6.571 | 3 | .087 | | | |
| | REGTOTDU(1) | 1.429 | 1.355 | 1.112 | 1 | .292 | 4.175 | .293 | 59.485 |
| | REGTOTDU(2) | -1.961 | 1.271 | 2.381 | 1 | .123 | .141 | .012 | 1.699 |
| | REGTOTDU(3) | -.756 | 1.190 | .403 | 1 | .525 | .470 | .046 | 4.840 |
| | Constant | 5.547 | 5.013 | 1.225 | 1 | .268 | 256.441 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 7[a] | REDTRANS(1) | -2.777 | 1.571 | 3.125 | 1 | .077 | .062 | .003 | 1.352 |
| | REGGROUP(1) | -1.667 | .762 | 4.788 | 1 | .029 | .189 | .042 | .840 |
| | REGORIGI | | | 6.166 | 3 | .104 | | | |
| | REGORIGI(1) | -.683 | 4.112 | .028 | 1 | .868 | .505 | .000 | 1598.819 |
| | REGORIGI(2) | -4.237 | 4.289 | .976 | 1 | .323 | .014 | .000 | 64.704 |
| | REGORIGI(3) | -1.988 | 3.929 | .256 | 1 | .613 | .137 | .000 | 302.419 |
| | ETHNIC(1) | -6.088 | 4.059 | 2.249 | 1 | .134 | .002 | .000 | 6.474 |
| | REGSPEND | | | 5.669 | 2 | .059 | | | |
| | REGSPEND(1) | 2.421 | 1.066 | 5.158 | 1 | .023 | 11.257 | 1.393 | 90.941 |
| | REGSPEND(2) | .326 | 1.265 | .066 | 1 | .797 | 1.386 | .116 | 16.550 |
| | REGINCOM | | | 10.475 | 2 | .005 | | | |
| | REGINCOM(1) | -2.184 | 1.177 | 3.441 | 1 | .064 | .113 | .011 | 1.132 |
| | REGINCOM(2) | 2.243 | 1.056 | 4.511 | 1 | .034 | 9.422 | 1.189 | 74.658 |
| | REGAGE(1) | 1.034 | .898 | 1.326 | 1 | .250 | 2.811 | .484 | 16.327 |
| | UNDER | -.676 | .620 | 1.188 | 1 | .276 | .509 | .151 | 1.716 |
| | HARMO | -1.198 | .670 | 3.198 | 1 | .074 | .302 | .081 | 1.122 |
| | REGPREV | | | 4.262 | 2 | .119 | | | |
| | REGPREV(1) | -2.350 | 1.141 | 4.243 | 1 | .039 | .095 | .010 | .892 |
| | REGPREV(2) | -1.482 | 1.103 | 1.806 | 1 | .179 | .227 | .026 | 1.973 |
| | REGTOTDU | | | 5.390 | 3 | .145 | | | |
| | REGTOTDU(1) | .465 | 1.207 | .149 | 1 | .700 | 1.593 | .150 | 16.966 |
| | REGTOTDU(2) | -2.042 | 1.214 | 2.827 | 1 | .093 | .130 | .012 | 1.403 |
| | REGTOTDU(3) | -.609 | 1.136 | .287 | 1 | .592 | .544 | .059 | 5.037 |
| | Constant | 4.390 | 4.319 | 1.033 | 1 | .309 | 80.613 | | |
| Step 8[a] | REDTRANS(1) | -2.314 | 1.485 | 2.426 | 1 | .119 | .099 | .005 | 1.818 |
| | REGGROUP(1) | -1.781 | .762 | 5.459 | 1 | .019 | .168 | .038 | .750 |
| | REGORIGI | | | 6.090 | 3 | .107 | | | |
| | REGORIGI(1) | -1.731 | 3.900 | .197 | 1 | .657 | .177 | .000 | 369.802 |
| | REGORIGI(2) | -5.182 | 4.106 | 1.593 | 1 | .207 | .006 | .000 | 17.568 |
| | REGORIGI(3) | -2.102 | 3.810 | .304 | 1 | .581 | .122 | .000 | 214.175 |
| | ETHNIC(1) | -5.544 | 3.898 | 2.023 | 1 | .155 | .004 | .000 | 8.131 |
| | REGSPEND | | | 5.205 | 2 | .074 | | | |
| | REGSPEND(1) | 2.196 | 1.022 | 4.615 | 1 | .032 | 8.985 | 1.212 | 66.608 |
| | REGSPEND(2) | .098 | 1.239 | .006 | 1 | .937 | 1.103 | .097 | 12.498 |
| | REGINCOM | | | 10.753 | 2 | .005 | | | |
| | REGINCOM(1) | -2.053 | 1.152 | 3.176 | 1 | .075 | .128 | .013 | 1.227 |
| | REGINCOM(2) | 2.325 | 1.046 | 4.944 | 1 | .026 | 10.230 | 1.317 | 79.448 |
| | REGAGE(1) | .961 | .880 | 1.193 | 1 | .275 | 2.613 | .466 | 14.650 |
| | HARMO | -1.342 | .648 | 4.293 | 1 | .038 | .261 | .073 | .930 |
| | REGPREV | | | 5.296 | 2 | .071 | | | |
| | REGPREV(1) | -2.527 | 1.114 | 5.149 | 1 | .023 | .080 | .009 | .709 |
| | REGPREV(2) | -1.759 | 1.076 | 2.670 | 1 | .102 | .172 | .021 | 1.420 |
| | REGTOTDU | | | 6.465 | 3 | .091 | | | |
| | REGTOTDU(1) | .420 | 1.176 | .128 | 1 | .721 | 1.522 | .152 | 15.272 |
| | REGTOTDU(2) | -2.276 | 1.188 | 3.671 | 1 | .055 | .103 | .010 | 1.054 |
| | REGTOTDU(3) | -.838 | 1.095 | .585 | 1 | .444 | .433 | .051 | 3.702 |
| | Constant | 4.832 | 4.201 | 1.323 | 1 | .250 | 125.430 | | |

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 9[a] | REDTRANS(1) | -2.380 | 1.538 | 2.394 | 1 | .122 | .093 | .005 | 1.887 |
| | REGGROUP(1) | -2.018 | .727 | 7.702 | 1 | .006 | .133 | .032 | .553 |
| | REGORIGI | | | 5.454 | 3 | .141 | | | |
| | REGORIGI(1) | -1.720 | 3.594 | .229 | 1 | .632 | .179 | .000 | 205.085 |
| | REGORIGI(2) | -4.886 | 3.806 | 1.648 | 1 | .199 | .008 | .000 | 13.108 |
| | REGORIGI(3) | -2.188 | 3.510 | .389 | 1 | .533 | .112 | .000 | 109.051 |
| | ETHNIC(1) | -5.034 | 3.554 | 2.007 | 1 | .157 | .007 | .000 | 6.899 |
| | REGSPEND | | | 6.291 | 2 | .043 | | | |
| | REGSPEND(1) | 2.456 | 1.007 | 5.946 | 1 | .015 | 11.653 | 1.619 | 83.872 |
| | REGSPEND(2) | .371 | 1.203 | .095 | 1 | .758 | 1.449 | .137 | 15.308 |
| | REGINCOM | | | 10.220 | 2 | .006 | | | |
| | REGINCOM(1) | -2.068 | 1.169 | 3.130 | 1 | .077 | .126 | .013 | 1.250 |
| | REGINCOM(2) | 2.269 | 1.029 | 4.863 | 1 | .027 | 9.669 | 1.287 | 72.643 |
| | HARMO | -1.256 | .616 | 4.148 | 1 | .042 | .285 | .085 | .954 |
| | REGPREV | | | 4.673 | 2 | .097 | | | |
| | REGPREV(1) | -2.099 | .989 | 4.507 | 1 | .034 | .123 | .018 | .851 |
| | REGPREV(2) | -1.575 | 1.057 | 2.220 | 1 | .136 | .207 | .026 | 1.644 |
| | REGTOTDU | | | 6.274 | 3 | .099 | | | |
| | REGTOTDU(1) | .539 | 1.179 | .209 | 1 | .648 | 1.713 | .170 | 17.279 |
| | REGTOTDU(2) | -2.080 | 1.159 | 3.223 | 1 | .073 | .125 | .013 | 1.210 |
| | REGTOTDU(3) | -.882 | 1.072 | .677 | 1 | .411 | .414 | .051 | 3.384 |
| | Constant | 4.898 | 3.929 | 1.554 | 1 | .213 | 133.958 | | |
| Step 10[a] | REGGROUP(1) | -2.269 | .706 | 10.338 | 1 | .001 | .103 | .026 | .412 |
| | REGORIGI | | | 5.966 | 3 | .113 | | | |
| | REGORIGI(1) | -2.107 | 2.941 | .513 | 1 | .474 | .122 | .000 | 38.753 |
| | REGORIGI(2) | -5.272 | 3.184 | 2.741 | 1 | .098 | .005 | .000 | 2.637 |
| | REGORIGI(3) | -2.990 | 2.824 | 1.121 | 1 | .290 | .050 | .000 | 12.742 |
| | ETHNIC(1) | -4.641 | 2.881 | 2.594 | 1 | .107 | .010 | .000 | 2.737 |
| | REGSPEND | | | 6.632 | 2 | .036 | | | |
| | REGSPEND(1) | 2.350 | .974 | 5.816 | 1 | .016 | 10.485 | 1.553 | 70.802 |
| | REGSPEND(2) | -.020 | 1.179 | .000 | 1 | .986 | .980 | .097 | 9.879 |
| | REGINCOM | | | 9.909 | 2 | .007 | | | |
| | REGINCOM(1) | -1.273 | .926 | 1.890 | 1 | .169 | .280 | .046 | 1.719 |
| | REGINCOM(2) | 2.588 | 1.010 | 6.563 | 1 | .010 | 13.297 | 1.836 | 96.280 |
| | HARMO | -1.193 | .562 | 4.513 | 1 | .034 | .303 | .101 | .912 |
| | REGPREV | | | 5.964 | 2 | .051 | | | |
| | REGPREV(1) | -2.223 | .984 | 5.105 | 1 | .024 | .108 | .016 | .745 |
| | REGPREV(2) | -2.012 | 1.018 | 3.906 | 1 | .048 | .134 | .018 | .984 |
| | REGTOTDU | | | 12.144 | 3 | .007 | | | |
| | REGTOTDU(1) | 1.026 | 1.135 | .818 | 1 | .366 | 2.791 | .302 | 25.799 |
| | REGTOTDU(2) | -2.374 | 1.150 | 4.265 | 1 | .039 | .093 | .010 | .886 |
| | REGTOTDU(3) | -.962 | 1.095 | .772 | 1 | .380 | .382 | .045 | 3.268 |
| | Constant | 3.171 | 3.097 | 1.049 | 1 | .306 | 23.831 | | |

a. Variable(s) entered on step 1: REDTRANS, REGGROUP, ENTRYDUR, REGATTRA, REGDISTA, REGORIGI, ETHNIC, GENDER, REGSPEND, REGEDUCA, REGINCOM, REGAGE, MARRIAGE, UNDER, HARMO, REGPREV, REGTOTDU.

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 1 | REDTRANS | -31.466 | 2.714 | 1 | .099 |
| | REGGROUP | -31.713 | 3.208 | 1 | .073 |
| | ENTRYDUR | -30.131 | .045 | 1 | .833 |
| | REGATTRA | -31.884 | 3.551 | 2 | .169 |
| | REGDISTA | -30.567 | .917 | 2 | .632 |
| | REGORIGI | -32.923 | 5.628 | 3 | .131 |
| | ETHNIC | -33.992 | 7.765 | 1 | .005 |
| | GENDER | -30.140 | .062 | 1 | .804 |
| | REGSPEND | -32.294 | 4.369 | 2 | .113 |
| | REGEDUCA | -30.115 | .013 | 2 | .994 |
| | REGINCOM | -37.202 | 14.186 | 2 | .001 |
| | REGAGE | -30.370 | .523 | 1 | .470 |
| | MARRIAGE | -30.636 | 1.055 | 1 | .304 |
| | UNDER | -31.113 | 2.009 | 1 | .156 |
| | HARMO | -31.749 | 3.280 | 1 | .070 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 1 | REGPREV | -33.724 | 7.231 | 2 | .027 |
| | REGTOTDU | -33.592 | 6.967 | 3 | .073 |
| Step 2 | REDTRANS | -31.477 | 2.723 | 1 | .099 |
| | REGGROUP | -31.985 | 3.739 | 1 | .053 |
| | ENTRYDUR | -30.140 | .049 | 1 | .825 |
| | REGATTRA | -31.998 | 3.765 | 2 | .152 |
| | REGDISTA | -30.568 | .906 | 2 | .636 |
| | REGORIGI | -33.185 | 6.140 | 3 | .105 |
| | ETHNIC | -34.253 | 8.275 | 1 | .004 |
| | GENDER | -30.150 | .069 | 1 | .793 |
| | REGSPEND | -32.438 | 4.645 | 2 | .098 |
| | REGINCOM | -37.537 | 14.843 | 2 | .001 |
| | REGAGE | -30.419 | .608 | 1 | .435 |
| | MARRIAGE | -30.727 | 1.225 | 1 | .268 |
| | UNDER | -31.327 | 2.423 | 1 | .120 |
| | HARMO | -32.000 | 3.769 | 1 | .052 |
| | REGPREV | -33.941 | 7.651 | 2 | .022 |
| | REGTOTDU | -34.027 | 7.825 | 3 | .050 |
| Step 3 | REDTRANS | -31.478 | 2.676 | 1 | .102 |
| | REGGROUP | -32.167 | 4.055 | 1 | .044 |
| | REGATTRA | -32.041 | 3.803 | 2 | .149 |
| | REGDISTA | -30.619 | .958 | 2 | .619 |
| | REGORIGI | -33.189 | 6.098 | 3 | .107 |
| | ETHNIC | -34.544 | 8.809 | 1 | .003 |
| | GENDER | -30.186 | .094 | 1 | .759 |
| | REGSPEND | -32.445 | 4.611 | 2 | .100 |
| | REGINCOM | -37.544 | 14.809 | 2 | .001 |
| | REGAGE | -30.500 | .721 | 1 | .396 |
| | MARRIAGE | -30.732 | 1.185 | 1 | .276 |
| | UNDER | -31.403 | 2.528 | 1 | .112 |
| | HARMO | -32.125 | 3.970 | 1 | .046 |
| | REGPREV | -34.101 | 7.922 | 2 | .019 |
| | REGTOTDU | -34.029 | 7.779 | 3 | .051 |
| Step 4 | REDTRANS | -31.603 | 2.834 | 1 | .092 |
| | REGGROUP | -32.168 | 3.963 | 1 | .047 |
| | REGATTRA | -32.258 | 4.144 | 2 | .126 |
| | REGDISTA | -30.692 | 1.012 | 2 | .603 |
| | REGORIGI | -33.938 | 7.502 | 3 | .058 |
| | ETHNIC | -34.554 | 8.736 | 1 | .003 |
| | REGSPEND | -32.542 | 4.711 | 2 | .095 |
| | REGINCOM | -37.721 | 15.069 | 2 | .001 |
| | REGAGE | -30.653 | .933 | 1 | .334 |
| | MARRIAGE | -30.808 | 1.243 | 1 | .265 |
| | UNDER | -31.408 | 2.443 | 1 | .118 |
| | HARMO | -32.128 | 3.884 | 1 | .049 |
| | REGPREV | -34.117 | 7.862 | 2 | .020 |
| | REGTOTDU | -34.242 | 8.112 | 3 | .044 |
| Step 5 | REDTRANS | -32.465 | 3.545 | 1 | .060 |
| | REGGROUP | -32.366 | 3.347 | 1 | .067 |
| | REGATTRA | -32.795 | 4.205 | 2 | .122 |
| | REGORIGI | -34.248 | 7.111 | 3 | .068 |
| | ETHNIC | -35.104 | 8.823 | 1 | .003 |
| | REGSPEND | -33.070 | 4.756 | 2 | .093 |
| | REGINCOM | -38.065 | 14.744 | 2 | .001 |
| | REGAGE | -31.361 | 1.336 | 1 | .248 |
| | MARRIAGE | -31.225 | 1.066 | 1 | .302 |
| | UNDER | -31.850 | 2.316 | 1 | .128 |
| | HARMO | -32.579 | 3.773 | 1 | .052 |
| | REGPREV | -34.531 | 7.678 | 2 | .022 |
| | REGTOTDU | -34.906 | 8.427 | 3 | .038 |

Model if Term Removed

| Variable | | Model Log Likelihood | Change in -2 Log Likelihood | df | Sig. of the Change |
|---|---|---|---|---|---|
| Step 6 | REDTRANS | -32.534 | 2.616 | 1 | .106 |
| | REGGROUP | -33.490 | 4.529 | 1 | .033 |
| | REGATTRA | -33.051 | 3.651 | 2 | .161 |
| | REGORIGI | -34.421 | 6.390 | 3 | .094 |
| | ETHNIC | -35.598 | 8.744 | 1 | .003 |
| | REGSPEND | -33.542 | 4.633 | 2 | .099 |
| | REGINCOM | -38.066 | 13.681 | 2 | .001 |
| | REGAGE | -32.293 | 2.135 | 1 | .144 |
| | UNDER | -32.283 | 2.114 | 1 | .146 |
| | HARMO | -32.745 | 3.040 | 1 | .081 |
| | REGPREV | -34.591 | 6.730 | 2 | .035 |
| | REGTOTDU | -35.326 | 8.200 | 3 | .042 |
| Step 7 | REDTRANS | -34.647 | 3.193 | 1 | .074 |
| | REGGROUP | -35.649 | 5.196 | 1 | .023 |
| | REGORIGI | -37.209 | 8.316 | 3 | .040 |
| | ETHNIC | -36.489 | 6.877 | 1 | .009 |
| | REGSPEND | -36.054 | 6.007 | 2 | .050 |
| | REGINCOM | -39.772 | 13.442 | 2 | .001 |
| | REGAGE | -33.727 | 1.352 | 1 | .245 |
| | UNDER | -33.659 | 1.217 | 1 | .270 |
| | HARMO | -34.852 | 3.602 | 1 | .058 |
| | REGPREV | -35.236 | 4.371 | 2 | .112 |
| | REGTOTDU | -36.217 | 6.333 | 3 | .096 |
| Step 8 | REDTRANS | -34.886 | 2.453 | 1 | .117 |
| | REGGROUP | -36.649 | 5.980 | 1 | .014 |
| | REGORIGI | -37.999 | 8.679 | 3 | .034 |
| | ETHNIC | -36.570 | 5.821 | 1 | .016 |
| | REGSPEND | -36.367 | 5.417 | 2 | .067 |
| | REGINCOM | -40.434 | 13.550 | 2 | .001 |
| | REGAGE | -34.268 | 1.217 | 1 | .270 |
| | HARMO | -36.230 | 5.142 | 1 | .023 |
| | REGPREV | -36.375 | 5.431 | 2 | .066 |
| | REGTOTDU | -37.551 | 7.784 | 3 | .051 |
| Step 9 | REDTRANS | -35.501 | 2.466 | 1 | .116 |
| | REGGROUP | -38.636 | 8.736 | 1 | .003 |
| | REGORIGI | -38.096 | 7.657 | 3 | .054 |
| | ETHNIC | -36.901 | 5.266 | 1 | .022 |
| | REGSPEND | -37.566 | 6.597 | 2 | .037 |
| | REGINCOM | -40.773 | 13.010 | 2 | .001 |
| | HARMO | -36.693 | 4.851 | 1 | .028 |
| | REGPREV | -36.508 | 4.481 | 2 | .106 |
| | REGTOTDU | -37.938 | 7.341 | 3 | .062 |
| Step 10 | REGGROUP | -41.748 | 12.495 | 1 | .000 |
| | REGORIGI | -39.589 | 8.176 | 3 | .043 |
| | ETHNIC | -38.202 | 5.404 | 1 | .020 |
| | REGSPEND | -39.042 | 7.082 | 2 | .029 |
| | REGINCOM | -41.334 | 11.668 | 2 | .003 |
| | HARMO | -38.094 | 5.186 | 1 | .023 |
| | REGPREV | -38.467 | 5.933 | 2 | .051 |
| | REGTOTDU | -43.871 | 16.740 | 3 | .001 |

Variables not in the Equation[j]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 2[a] | Variables | REGEDUCA | .013 | 2 | .994 |
| | | REGEDUCA(1) | .000 | 1 | .998 |
| | | REGEDUCA(2) | .009 | 1 | .925 |
| | Overall Statistics | | .013 | 2 | .994 |
| Step 3[b] | Variables | ENTRYDUR | .050 | 1 | .824 |
| | | REGEDUCA | .017 | 2 | .992 |
| | | REGEDUCA(1) | .000 | 1 | .994 |
| | | REGEDUCA(2) | .013 | 1 | .910 |
| | Overall Statistics | | .063 | 3 | .996 |

Variables not in the Equation[i]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 4[c] | Variables | ENTRYDUR | .076 | 1 | .783 |
| | | GENDER(1) | .094 | 1 | .759 |
| | | REGEDUCA | .026 | 2 | .987 |
| | | REGEDUCA(1) | .000 | 1 | .997 |
| | | REGEDUCA(2) | .020 | 1 | .888 |
| | Overall Statistics | | .157 | 4 | .997 |
| Step 5[d] | Variables | ENTRYDUR | .159 | 1 | .690 |
| | | REGDISTA | 1.077 | 2 | .584 |
| | | REGDISTA(1) | .544 | 1 | .461 |
| | | REGDISTA(2) | .001 | 1 | .982 |
| | | GENDER(1) | .148 | 1 | .701 |
| | | REGEDUCA | .001 | 2 | 1.000 |
| | | REGEDUCA(1) | .000 | 1 | .995 |
| | | REGEDUCA(2) | .000 | 1 | .987 |
| | Overall Statistics | | 1.227 | 6 | .976 |
| Step 6[e] | Variables | ENTRYDUR | .061 | 1 | .805 |
| | | REGDISTA | .888 | 2 | .641 |
| | | REGDISTA(1) | .551 | 1 | .458 |
| | | REGDISTA(2) | .004 | 1 | .951 |
| | | GENDER(1) | .190 | 1 | .663 |
| | | REGEDUCA | .113 | 2 | .945 |
| | | REGEDUCA(1) | .015 | 1 | .903 |
| | | REGEDUCA(2) | .110 | 1 | .740 |
| | | MARRIAGE(1) | 1.106 | 1 | .293 |
| | Overall Statistics | | 2.391 | 7 | .935 |
| Step 7[f] | Variables | ENTRYDUR | .142 | 1 | .706 |
| | | REGATTRA | 3.609 | 2 | .165 |
| | | REGATTRA(1) | 3.591 | 1 | .058 |
| | | REGATTRA(2) | 2.671 | 1 | .102 |
| | | REGDISTA | .958 | 2 | .620 |
| | | REGDISTA(1) | .400 | 1 | .527 |
| | | REGDISTA(2) | .025 | 1 | .873 |
| | | GENDER(1) | .608 | 1 | .435 |
| | | REGEDUCA | .370 | 2 | .831 |
| | | REGEDUCA(1) | .357 | 1 | .550 |
| | | REGEDUCA(2) | .176 | 1 | .675 |
| | | MARRIAGE(1) | .525 | 1 | .469 |
| | Overall Statistics | | 5.547 | 9 | .784 |
| Step 8[g] | Variables | ENTRYDUR | .179 | 1 | .673 |
| | | REGATTRA | 2.753 | 2 | .252 |
| | | REGATTRA(1) | 2.702 | 1 | .100 |
| | | REGATTRA(2) | 2.244 | 1 | .134 |
| | | REGDISTA | 1.041 | 2 | .594 |
| | | REGDISTA(1) | .195 | 1 | .659 |
| | | REGDISTA(2) | .153 | 1 | .695 |
| | | GENDER(1) | .348 | 1 | .555 |
| | | REGEDUCA | .862 | 2 | .650 |
| | | REGEDUCA(1) | .844 | 1 | .358 |
| | | REGEDUCA(2) | .389 | 1 | .533 |
| | | MARRIAGE(1) | .568 | 1 | .451 |
| | | UNDER | 1.218 | 1 | .270 |
| | Overall Statistics | | 6.313 | 10 | .788 |
| Step 9[h] | Variables | ENTRYDUR | .502 | 1 | .479 |
| | | REGATTRA | 2.276 | 2 | .320 |
| | | REGATTRA(1) | 2.263 | 1 | .133 |
| | | REGATTRA(2) | 1.719 | 1 | .190 |
| | | REGDISTA | 1.339 | 2 | .512 |
| | | REGDISTA(1) | .580 | 1 | .446 |
| | | REGDISTA(2) | .030 | 1 | .862 |
| | | GENDER(1) | .672 | 1 | .412 |
| | | REGEDUCA | 1.501 | 2 | .472 |
| | | REGEDUCA(1) | 1.501 | 1 | .221 |
| | | REGEDUCA(2) | .492 | 1 | .483 |
| | | REGAGE(1) | 1.232 | 1 | .267 |
| | | MARRIAGE(1) | 1.163 | 1 | .281 |
| | | UNDER | 1.089 | 1 | .297 |
| | Overall Statistics | | 7.402 | 11 | .766 |

Variables not in the Equation[j]

| | | | Score | df | Sig. |
|---|---|---|---|---|---|
| Step 10[i] | Variables | REDTRANS(1) | 2.454 | 1 | .117 |
| | | ENTRYDUR | .380 | 1 | .537 |
| | | REGATTRA | 2.848 | 2 | .241 |
| | | REGATTRA(1) | 2.848 | 1 | .092 |
| | | REGATTRA(2) | 2.048 | 1 | .152 |
| | | REGDISTA | 2.131 | 2 | .345 |
| | | REGDISTA(1) | .615 | 1 | .433 |
| | | REGDISTA(2) | .257 | 1 | .612 |
| | | GENDER(1) | .742 | 1 | .389 |
| | | REGEDUCA | .687 | 2 | .709 |
| | | REGEDUCA(1) | .611 | 1 | .434 |
| | | REGEDUCA(2) | .053 | 1 | .818 |
| | | REGAGE(1) | 1.224 | 1 | .269 |
| | | MARRIAGE(1) | .236 | 1 | .627 |
| | | UNDER | .514 | 1 | .474 |
| | Overall Statistics | | 9.314 | 12 | .676 |

a. Variable(s) removed on step 2: REGEDUCA.

b. Variable(s) removed on step 3: ENTRYDUR.

c. Variable(s) removed on step 4: GENDER.

d. Variable(s) removed on step 5: REGDISTA.

e. Variable(s) removed on step 6: MARRIAGE.

f. Variable(s) removed on step 7: REGATTRA.

g. Variable(s) removed on step 8: UNDER.

h. Variable(s) removed on step 9: REGAGE.

i. Variable(s) removed on step 10: REDTRANS.

j. Adding the most significant variable will result in a model which duplicates a prior model.

```
          Step number: 1

          Observed Groups and Predicted Probabilities

     160 ô                                                            ô
         ó                                                            ó
         ó                                                            ó
F        óO                                                           ó
R    120 ôO                                                           ô
E        óO                                                           ó
Q        óO                                                           ó
U        óO                                                           ó
E     80 ôO                                                           ô
N        óO                                                           ó
C        óO                                                           ó
Y        óO                                                           ó
      40 ôO                                                           ô
         óO                                                           ó
         óO                                                           ó
         óOOOOOOOGG                                                  Gó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0             .25            .5             .75            1
 Group:   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

          Predicted Probability is of Membership for Guangzhou
          The Cut Value is .50
          Symbols: O - Others
                   G - Guangzhou
          Each Symbol Represents 10 Cases.
```

```
          Step number: 2

          Observed Groups and Predicted Probabilities

     160 ô                                                            ô
         ó                                                            ó
         ó                                                            ó
F        óO                                                           ó
R    120 ôO                                                           ô
E        óO                                                           ó
Q        óO                                                           ó
U        óO                                                           ó
E     80 ôO                                                           ô
N        óO                                                           ó
C        óO                                                           ó
Y        óO                                                           ó
      40 ôO                                                           ô
         óO                                                           ó
```

```
           óO                                                          ó
           óOOOOOO G                                                  Gó
Predicted  òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:    0             .25            .5             .75            1
  Group:   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

           Predicted Probability is of Membership for Guangzhou
           The Cut Value is .50
           Symbols: O - Others
                    G - Guangzhou
           Each Symbol Represents 10 Cases.



              Step number: 3

              Observed Groups and Predicted Probabilities

       160 ô                                                           ô
           ó                                                           ó
           ó                                                           ó
F          óO                                                          ó
R      120 ôO                                                          ô
E          óO                                                          ó
Q          óO                                                          ó
U          óO                                                          ó
E       80 ôO                                                          ô
N          óO                                                          ó
C          óO                                                          ó
Y          óO                                                          ó
        40 ôO                                                          ô
           óO                                                          ó
           óO                                                          ó
           óOOO O  O                                                  Gó
Predicted  òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:    0             .25            .5             .75            1
  Group:   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

           Predicted Probability is of Membership for Guangzhou
           The Cut Value is .50
           Symbols: O - Others
                    G - Guangzhou
           Each Symbol Represents 10 Cases.



              Step number: 4

              Observed Groups and Predicted Probabilities

       160 ô                                                           ô
           ó                                                           ó
           ó                                                           ó
F          óO                                                          ó
R      120 ôO                                                          ô
E          óO                                                          ó
Q          óO                                                          ó
U          óO                                                          ó
E       80 ôO                                                          ô
N          óO                                                          ó
C          óO                                                          ó
Y          óO                                                          ó
        40 ôO                                                          ô
           óO                                                          ó
           óO                                                          ó
           óOOOOOO                                                    Gó
Predicted  òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:    0             .25            .5             .75            1
  Group:   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

           Predicted Probability is of Membership for Guangzhou
           The Cut Value is .50
           Symbols: O - Others
                    G - Guangzhou
           Each Symbol Represents 10 Cases.



              Step number: 5

              Observed Groups and Predicted Probabilities

       160 ô                                                           ô
           ó                                                           ó
           ó                                                           ó
F          ó                                                           ó
R      120 ôO                                                          ô
E          óO                                                          ó
Q          óO                                                          ó
U          óO                                                          ó
E       80 ôO                                                          ô
```

```
N         ó0                                                           ó
C         ó0                                                           ó
Y         ó0                                                           ó
      40 ô0                                                            ô
         ó0                                                            ó
         ó00                                                           ó
         ó0000 00                                                     Gó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0              .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

          Predicted Probability is of Membership for Guangzhou
          The Cut Value is .50
          Symbols: O - Others
                   G - Guangzhou
          Each Symbol Represents 10 Cases.
```

```
             Step number: 6

             Observed Groups and Predicted Probabilities

     160 ô                                                              ô
         ó                                                              ó
         ó                                                              ó
F        ó                                                              ó
R    120 ô0                                                             ô
E        ó0                                                             ó
Q        ó0                                                             ó
U        ó0                                                             ó
E     80 ô0                                                             ô
N        ó0                                                             ó
C        ó0                                                             ó
Y        ó0                                                             ó
      40 ô0                                                             ô
         ó0                                                             ó
         ó00                                                            ó
         ó0000    0                                                     ó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0              .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

          Predicted Probability is of Membership for Guangzhou
          The Cut Value is .50
          Symbols: O - Others
                   G - Guangzhou
          Each Symbol Represents 10 Cases.
```

```
             Step number: 7

             Observed Groups and Predicted Probabilities

     160 ô                                                              ô
         ó                                                              ó
         ó                                                              ó
F        ó                                                              ó
R    120 ô                                                              ô
E        ó0                                                             ó
Q        ó0                                                             ó
U        ó0                                                             ó
E     80 ô0                                                             ô
N        ó0                                                             ó
C        ó0                                                             ó
Y        ó0                                                             ó
      40 ô0                                                             ô
         ó0                                                             ó
         ó00                                                            ó
         ó00000                                                         ó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòôòòòòòòòòòòòòòòò
  Prob:   0              .25            .5             .75             1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

          Predicted Probability is of Membership for Guangzhou
          The Cut Value is .50
          Symbols: O - Others
                   G - Guangzhou
          Each Symbol Represents 10 Cases.
```

```
             Step number: 8

             Observed Groups and Predicted Probabilities

     160 ô                                                              ô
         ó                                                              ó
         ó                                                              ó
F        ó                                                              ó
```

```
R    120 ô                                                           ô
E        óO                                                          ó
Q        óO                                                          ó
U        óO                                                          ó
E     80 ôO                                                          ô
N        óO                                                          ó
C        óO                                                          ó
Y        óO                                                          ó
      40 ôO                                                          ô
         óO                                                          ó
         óOO G                                                       ó
         óOOOOOO    G                                                ó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòò
  Prob:   0            .25            .5            .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

          Predicted Probability is of Membership for Guangzhou
          The Cut Value is .50
          Symbols: O - Others
                   G - Guangzhou
          Each Symbol Represents 10 Cases.
```

```
             Step number: 9

             Observed Groups and Predicted Probabilities

     160 ô                                                           ô
         ó                                                           ó
         ó                                                           ó
F        ó                                                           ó
R    120 ô                                                           ô
E        ó                                                           ó
Q        óO                                                          ó
U        óO                                                          ó
E     80 ôO                                                          ô
N        óO                                                          ó
C        óO                                                          ó
Y        óO                                                          ó
      40 ôO                                                          ô
         óOG                                                         ó
         óOOO                                                        ó
         óOOOO O O                                                   ó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòò
  Prob:   0            .25            .5            .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

          Predicted Probability is of Membership for Guangzhou
          The Cut Value is .50
          Symbols: O - Others
                   G - Guangzhou
          Each Symbol Represents 10 Cases.
```

```
             Step number: 10

             Observed Groups and Predicted Probabilities

     160 ô                                                           ô
         ó                                                           ó
         ó                                                           ó
F        ó                                                           ó
R    120 ô                                                           ô
E        óG                                                          ó
Q        óO                                                          ó
U        óO                                                          ó
E     80 ôO                                                          ô
N        óO                                                          ó
C        óO                                                          ó
Y        óO                                                          ó
      40 ôO                                                          ô
         óO                                                          ó
         óOO                                                         ó
         óOOOOOO                                                     ó
Predicted òòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòôòòòòòòòòòòòòòòòò
  Prob:   0            .25            .5            .75            1
  Group:  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

          Predicted Probability is of Membership for Guangzhou
          The Cut Value is .50
          Symbols: O - Others
                   G - Guangzhou
          Each Symbol Represents 10 Cases.
```

Casewise List[b]

| Case | Selected Status[a] | Observed: Guangzhou vs. Others | Predicted | Predicted Group | Temporary Variable: Resid | ZResid |
|---|---|---|---|---|---|---|
| 9 | S | G** | .113 | O | .887 | 2.797 |
| 35 | S | G** | .059 | O | .941 | 3.998 |
| 53 | S | G** | .115 | O | .885 | 2.769 |
| 101 | S | G** | .166 | O | .834 | 2.239 |
| 141 | S | G** | .011 | O | .989 | 9.450 |
| 157 | S | G** | .060 | O | .940 | 3.943 |
| 206 | S | G** | .163 | O | .837 | 2.268 |

a. S = Selected, U = Unselected cases, and ** = Misclassified cases.

b. Cases with studentized residuals greater than 2.000 are listed.