The Impact of Internet Usage on Family Functioning and Psychological Well-Being in Saudi Arabia.

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Abstract

This study aims to investigate the impact of Internet usage on the psychological well-being related to family functioning in the context of Saudi Arabian society. Internet usage is represented by two aspects, firstly by type of online activities including searching, pleasure, communication, gaming, friendships, and shopping; secondly by time spent on these online activities. In terms of family functioning, two dimensions are derived from the Circumplex Model of Marital and Family System, they are family cohesion and adaptability (Olson, 1983). Finally, four individual variables of psychological well-being were selected: loneliness, self-esteem, satisfaction with life, and satisfaction with family life.

For the present work five separate studies were carried out to address the main aim. The first study is a translation study which aims to translate the scales under study into Arabic using two different methods of translation, back translation, and statistical translation. The results indicated that the translated items of the self-report scales are understandable and have similar meaning to the original items.

The second study, which is the pilot study, aims to test the properties of the scales and examine the relationships among the variables. Fifty-eight participants (39 males, 18 females) with mean age 31.6 years took part, all of them Saudi nationals and native speakers. The results indicated significant relationships among the variables, especially Internet usage and family functioning. Results also indicated that the scales under study have acceptable psychometric proprieties. Some items, especially in the Family Adaptability and Cohesion Evaluation Scale (FACESII), were found to have minimal

relationship with the total of the scale. Thus, the decision was made to further validate in a follow-up study.

The third study aims to validate FACESII to be used in Saudi society. The sample of this study was extended to include one hundred and eighty-one participants 100 males (55%), and 81 females (44%), average of 30.6 years. Three types of validity were considered; face validity, congruent validity, and construct validity. The results showed that FACESII correlated well with the self-esteem whilst correlating poorly with loneliness. Also, the items of FACESII loaded on different factors to the items loaded in loneliness and self-esteem. This study ended with some suggestions to further develop the FACESII scale.

The three aforementioned studies can constitute a preparation process to move towards the main study aim. The fourth study aims to examine the effect of using the Internet on family functioning and well-being, starts with developing scales by using the Confirmatory Factor Analysis (CFA), then examines the model of current study using Structural Equation Modelling (SEM). Four models developed to examine the impact of Internet use on family and couple functioning and well-being. These main models consider family and couple functioning as a mediation variable between Internet usage and psychological well-being. Four hundred and thirty-three participants with average mean of 30.23 years took part in survey. Participants were all Saudi nationals and native speakers, from different positions in the household of Saudi families. Overall, results were shown to support the main models and to confirm the mediating role of family functioning for the relationship of Internet usage and individual well-being. Furthermore, comparison between UK and KSA sample were made to find differences in all study's variables and among family members.

The final study, a longitudinal study, aims to examine Internet effects on family functioning and well-being over time. Seventy-four, 48 males and 26 females, with a mean age 33.2 took part in the survey used in study four for a second time. Cross-lagged regression models were used to compare effects over time. Results of this study confirmed that Internet usage has stronger effects on family functioning compared with effects on psychological well-being. This lends further support to the assumed mediating mechanism. Also, some comparisons were made to find out the differences in the study's variables between first longitudinal and cross-sectional samples, and between participants who took part in the longitudinal study with sample who did not.

All in all, the results support the models that proposed which the Internet usage can be more effective on psychological well-being through the family functioning; cohesion and adaptability.

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1. Chapter One: Introduction:

1.1 Background:

The present study focuses on the impact of Internet use on the family functioning and psychological well-being of Saudi Arabian families. Internet usage can be defined as accessing online services from computers and mobile devices, for both social and non-social purposes. As Internet technology becomes more prevalent in people's lives, it is important to recognize that it may not always be a positive force and that the effect on family functioning may be corrosive. Arab society especially Saudi Arabian is considered as a society undergoing transformation and usage of Internet has not yet reached the levels of Western cultures, therefore it is timely to carry out an investigation of the effects of technology on families in Saudi Arabia.

More than 60% of the population of Saudi Arabia use the Internet and they spend more than three hours online per day at least (Alzoman ,2012; Google report, 2016; Simsim 2011). Currently the majority of people in Saudi Arabia access the Internet from home between the hours of 8pm and midnight (CITC, 2009). This would normally be a time when families gather together and therefore the impact of this technology on family life may be considerable. Also, some studies in Saudi Arabia indicated that the Internet can lead to have marriage and family conflicts (Al-katib,2007; Alshri ,2010; Jwaher,2005).

The available research literature on the impact of modern technologies on the family is limited (Hughes & Hans, 2001; Watt & White, 1999; Mesch ,2003;2006), although there have been a number of studies on technology and personal relationships (Parks, 2007; Wright & Webb, 2011; Luppicini & Haghi, 2012; Chambers, 2013;Williams,2000; McKillop,2011; Morgan,2003; Engelberg,2004; Whitty 2007; Mesch 2001; Moody,2001; Kraut,2002; van den Eijnden, 2008; Shaw,2002; Ellison & Lampe , 2007; Lissita,2016). It

has been shown that technology has promoted social change and consequently affected human life in many ways (Awny, 2004).

Researchers have diverse views on whether modern technologies strengthen or weaken family ties (Fischer, 1992; Katz & Rice, 2002; Lee,2007; Mesch,2003;2006; Fox & Chesley, 2009; Kennedy & Wellman, 2007; Nie, Hillygus, & Erbing, 2002; Bittman, Brown, & Wajcman, 2009; Wajcman, Bittman, & Brown, 2008), and this will be one of the main research questions. Although modern technologies such as computers and the Internet can be considered as bringing family activities back into the home (Tapscott, 1997), they have also isolated individuals and produced a decline in social activities and physical contacts (Mickus ,2002; Lanigan;2009; Stevenson,2011; Mesch,2003; Belch,2005; Abuiyada,2016).

Families are essential within the social fabric of Arab society and investigating the impact of modern technology on family functioning will increase the knowledge of the factors which may be involved in either weakening or strengthening family structures within the Arab world. Many studies in Saudi Arabia have claimed that the family is a fundamental framework for raising children, and any hazards that threaten the family unit would lead children to be more likely suffering from low psychological well-being (Alsharafi,2015; Samkari,2005). Thus, the aim of the current work is to investigate the Internet and its impact upon family cohesion, family adaptability, couple cohesion, couple adaptability in saudi sample in the United Kingdom and Saudi Arabia.

1.2 The Importance of the study:

In light of the fast development of Internet technology there are several gaps identifiable in terms of the influences of Internet usage on the family (Hughes & Hans, 2001; Watt & White, 1999; Mesch ,2003;2006), Also, as addressed above studies that investigated the consequences of Internet usage on families are limited, and in Saudi society several

researchers have recommended to investigate this issue more deeply (Jwaher,2005; Al-katib,2007; Alshri ,2010). The present work can be considered as the first to shed light on the extent to which the Internet has impacted on both the family functioning and individual well-being. Also, the current project aims to inform in more detail on the positive and negative effects of Internet usage on family and couple functioning and psychological well-being variables. Additionally, it aims to extend the existing knowledge of the interaction between Internet technologies and family functioning. Furthermore, this project will provide a valid instrument to investigate family processes for Saudi society, and Arabic countries more generally, which will help experts on families in their work.

1.3 Models and Research Questions:

The present work aims to find out the impact of Internet usage on family functioning and psychological well-being. From this aim, the relationships among three main clusters of variables are going to be investigated. Firstly, Internet usage which is represented by two aspects Internet activities that are considered as purposes of using the Internet and time spent on the internet. The second variable is family functioning which revolves around two central dimensions in the family, cohesion and adaptability. The last four variables represent individual psychological well-being: loneliness, self-esteem, satisfaction with life, and satisfaction with family life. Figure one represents the influences of Internet use on family functioning (1.1), the second diagram (1.2) represents the impact of Internet usage on well-being variables, while the third diagram (1.3) is going to be developed in the coming chapters. It examines family functioning as a mediation variable between the Internet usage and well-being variables.

Figure 1.1 Influences of the Internet usage on family Functioning.

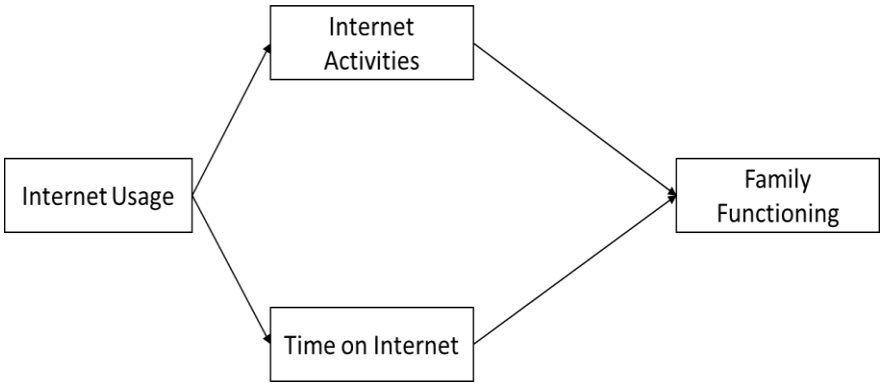


Figure 1.2 The influences of the Internet usage on well-being

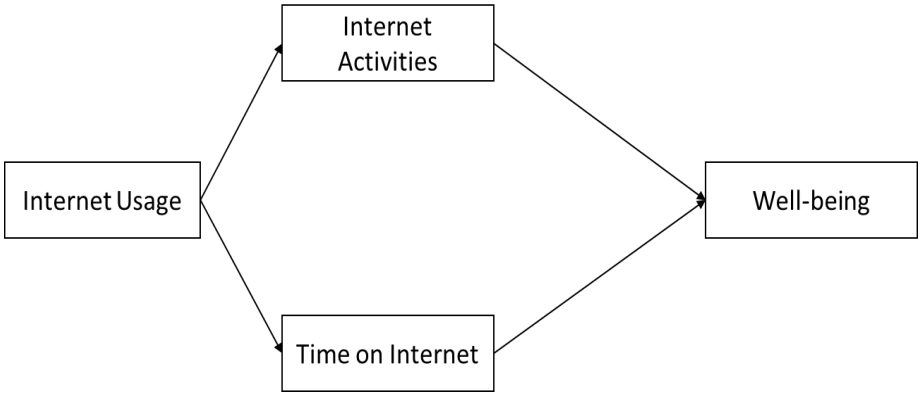
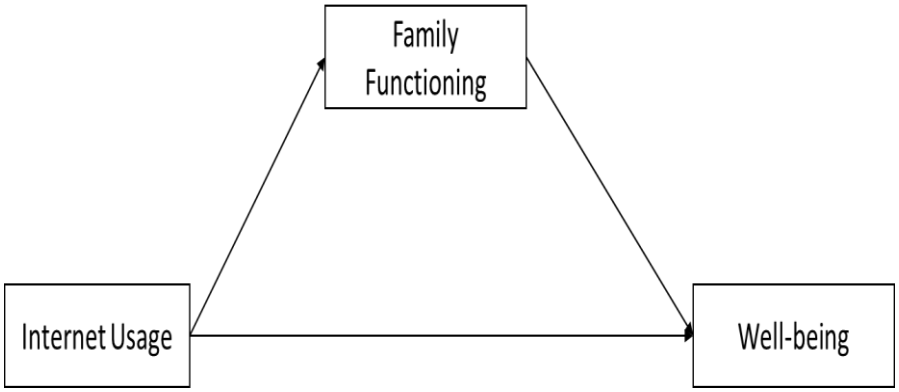


Figure 1.3 The influences of Internet usage on well-being mediated by family functioning.



The overarching research question is:

"To what extent does Internet usage affect the balance of family functioning and psychological well-being in Saudi society?"

In particular, the present work will seek to determine:

1) What are the Internet activities that are used in Saudi society?
2) What is the amount of time that is spent on the Internet activities a week?
3) Does Internet usage affect Saudi family cohesion?
    a) Are there effects of Internet activities on family and couple cohesion?
    b) Are there effects of time spent on Internet activities on family and couple cohesion?
4) Does Internet usage affect Saudi family adaptability?
    a) Internet activities on family and couple adaptability?
    b) Time spent on Internet activities on family and couple adaptability?
5) Does Internet usage affect psychological well-being (loneliness, self-esteem, family life satisfaction, and life satisfaction) in Saudi families?
    a) Internet activities on psychological well-being?
    b) Time spent on Internet on psychological well-being?

1.4 Thesis Structure:

In order to achieve its aims, this thesis includes twelve chapters. The first one is to introduce the statement of problems and the aims of research. The second and third chapters represent the literature review section which discusses the concepts of family functioning and the Internet in Saudi Arabia, and then moves onto the previous empirical studies that have investigated relationships among the main variables of interest: Internet use, family functioning, and psychological well-being. The overall methodology is addressed in chapter

four. After that, chapter five to eleven represent the empirical studies as the process to reach the main aim of the thesis, beginning with a translation study, followed by a pilot study, validation study, a cross-sectional main study, and a longitudinal study. The last chapter provides an overall discussion of findings and a general outlook. The following paragraphs outline the content of each chapter. Table (1.1) shows these outlines.

Chapter One covers the problem statements, and research questions, it also provides a short explanation of variables and models used in this work. Also, it highlights the importance and the significance of this study and gives an outline of the thesis.

Chapter Two provides a background of definitions of the family concepts from different subject perspectives and explains in more details about the wider theory of the family which is the Circumplex Model of Marital and Family functioning (Olson,1983). After that, the chapter presents the changes to family structures and processes in Saudi society.

Chapter Three presents previous empirical studies which investigated the influences of Internet usage on family variables. Then the second part presents previous empirical studies that investigated the impact of Internet usage on psychological well-being since advent of the internet.

Chapter Four is about the methodology of the present work. It provides a background of the instruments of the study, Family Adaptability and Cohesion Evaluation Scale (FACES), Loneliness Scale, Self-esteem Scale, Satisfaction with life scale, Satisfaction with family life, and Internet usage scale. It then provides a description of the target population and how the samples were obtained. Moreover, it addresses the ethical issues related to conducting the surveys, and describe the general process of how the studies carried out.

Chapter Five presents the first empirical study which is the translation study. In this chapter, two different methods of translation were used in order to translate the instruments of the study from English into Arabic.

Chapter Six presents the second study which is the pilot study. The aim of this study was to examine the psychometric properties of the translated scales, and to pre-examine the relationships among the variables.

Chapter Seven presents the third study which aimed to validate the scale of Family Adaptability and Cohesion Evaluation Scale (FACESII) for use with Saudi society.

Chapters Eight, Nine, and Ten present the cross sectional study. This study uses advanced statistical methods in order to examine several models that address the core research question "to what extent does the Internet impact on family functioning and psychological well/being?". Models and estimates were optimised by using Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM).

Chapter Eleven presents the findings of the longitudinal study that examined the impact of Internet usage on family functioning and psychological well/being over time.

Chapter Twelve discusses the main findings and their implications, focussing on the output of the cross-sectional study and the longitudinal study.

Table 1.1 Research Outline.

Framework Structure	**Chapters**	**Aims**
Introductory Section	Chapter One	To present an overview about the problem statements, and research question, and models.
Literature Review	Chapter Two	To understand the concept of the family functioning, and the presents a background about the family in Saudi Arabia.
	Chapter Three	To present the empirical studies which studied the correlation between the Internet usage, family functioning, and Psychological well-being. Also, present the hypotheses for the current work.
Research Methodology	Chapter Four	To describe the process of how to examine the hypotheses
Data Analysis	Chapter Five	Study One (Translation Study): To translate the instruments under this study into Arabic Language.
	Chapter Six	Study Two (Pilot Study): To examine the instruments, in term of their psychometrics proprieties, and correlations among the variables.
	Chapter Seven	Study Three (Validation): To validate the Family Adaptability and Cohesion Evaluation Scale (FACESII) to be suitable for the Saudi society.
	Chapter Eight, Nine, and Ten.	Study Four (Cross Sectional): To examine the whole model of the current study which investigates the impact of Internet usage on family functioning and psychological well-being.
	Chapter Eleven	Study Five (Longitudinal): To examine the impact of Internet usage on family functioning and psychological well-being over time.
Data Discussion	Chapter Twelve	To discuss the results of the cross sectional and longitudinal studies. Also, to present implications, limitations, and conclusion of the study.

2. Chapter Two: Family Concept

2.1 Introduction:

This chapter aims to review the definitions and understanding of the family concept. It starts with a general discussion of the definition of the concept of the family provided by researchers in different fields. Then the chapter moves onto discuss the relationships between family functioning and psychological well-being. After that, the widely used Circumplex Model theory is introduced including the history, validation, and the dimensions of this theory. The chapter then provides insights into the family in a Saudi society context. This last part of the chapter describes the stages that Saudi society underwent in recent history and which also affected the family.

2.2 Family Functioning and its relation with Well-Being:

The family concept has received high levels of attention from many researchers from different subjects and cultures. That is because the family is a very important issue for different reasons. For example, it is considered to be the first environment for children to learn how to behave toward different stimuli which are coming from inside and outside of the family environment. It is also considered as a firewall protection for its members especially children from any hazard that might threaten them. Thus, many theories have been proposed to explain the central aspects of the family concept which help researchers and other people such as parents to protect and develop families to be a good environment for their members (Williams et al, 1999).

Al-katib (2007) distinguished four important dimensions of the family concept. Firstly, a family will normally be formed by a group of people from different genders (male & female). Secondly, this group of people normally live together in one place. Thirdly, the group of people contains strong relationships such as being married, cohabitation or being relatives.

Finally, those people should be responsible of each other and the adults should have a sense of responsibility of the children (Al-katib, 2007).

The family functioning concept has attracted considerable attention from many researchers in different subjects, from sociology, psychology and family studies (Koutra et al.,2013). Family functioning refers to different aspects in the family such as relationships among members, sharing their interests and activities together, reaching family goals and clear rules and roles inside the family (Petrocelli et al.,2003; Olson et al.,2006). The value of the family relationship is an important core for the development of all family members, especially children in a family (Bartholomew,1991). When family functioning is performing well, family members are more likely to be protected from psychological problems, they can deal well with stressors, and have clear rules and boundaries (Petrocelli et al.,2003).

Family functioning is found to be a significant predictor to the psychological well-being of family members. For example, Shek and Daniel (1997) reported that family functioning is a key factor in increasing positive mental health. Moreover, Mandara (2000) found that family functioning was a very strong predictor of family members' self-esteem. In addition, family functioning helps members to form their identity and explore it. For instance, Mullis (2003) examined the association between identity formation and family functioning among adults. He found a significant relationship between identity exploration and commitment with family cohesion and adaptability. Also, the family is considered to be an environment which provides many functions for its members beginning with procreation, safety and security, education, and learning different behaviours from caregivers (parents) (Al-katib, 2007).

In the Cicumplex Model of the Marital and Family System (Olson,1983) the variables cohesion and adaptability refer to the concept of family functioning. Family cohesion is

defined "*as the emotional bonding that family members have towards one another*" (Olson et al.,1983:48).

And family adaptability is defined "*as the ability of marital or family system to change its power structure, role relationships, and relationships rules in response to situational and developmental stress*" (Olson et al.,1983:48).

It was also found that family cohesion and adaptability are correlated positively with psychological well-being. For example, Kawash (1990) examined the relationships between self-esteem and the two dimensions of family functioning, cohesion and adaptability. The study was conducted on 327 school students at grade eight and showed that self-esteem was correlated positively with cohesion and adaptability.

Conversely, family dys-functioning refer to low levels of cohesion and adaptability. It was found that family dys-functioning can be a major factor for family members suffering from a range of psychological issues. For example, Higgins (2003) found that family dys-functioning can increase depression and vulnerability to depression. Also, Jeffrey (1991) indicated that family dys-functioning is associated with people who suffer from sexual abuse, neglect, and physical abuse.

2.3 The Circumplex Model of the Marital and Family System:

One of the most widely used theories in the context of family functioning and well-being is the Circumplex Model of Marital and Family System. This theory was developed by Olson and colleagues (1979). It focusses on describing the important dimensions which represent family functioning like family cohesion, adaptability, and communication. Mainly, the Circumplex Model relied on the pioneering work of Reuben Hill 1949; see Olson,2003).

Hill's work (1949) focussed on measuring and determining changes to the family integration (cohesion) and the rules (adaptability) inside the family under the stress. Also, he was

concerned with how these changes happened to the family across the family life cycle. Hill's work determined seven stages of the family life cycle: 1) young couples without children. In this stage the young couple is concerned with the main aim of being together with a negotiation, but they have not experienced the needs and demands of young children. 2) family with pre-school (ages 0-5) children. The children spend more time at home and the parents are considered as the central sources of information for the children in this age. 3) family with school age children (ages 6-12). In this stage mainly the parents focus on the education for their children and socialization. 4) family with adolescents (13-18). In this stage the parents prepare their adolescents to leave home which is considered as the critical stage of the family life cycle. 5) the launching family (adolescents, 19 and older). In this stage the adolescents are ready to leave their home and built their own life. 6) empty nest family (all children left). In this stage the family still has some rules and role but the family is back to the first stage which focuses on the couple's needs. 7) The last stage of the life cycle is called the family in retirement. In this stage the parents have completed their career and supervision and parents try to maintain the relationships with extended family and friends.

Olson and colleagues (1983) carried out a study in order to capture the complexity of marriage and family system across the life cycle. This study built on the theory of the family life cycle provided by Reuben Hill. It aimed to describe the family process represented by family cohesion and adaptability across the normal family life cycle. A cross-sectional study was conducted on a sample of 2692 from US states. The sample was composed of 1140 couples, and 412 adolescents (206 males, 206 females). The family samples were distributed in the family life cycle as follows: 121 couples,148 families with pre-schoolers, 129 families with school age children, 261 families with adolescents, 191 families that prepared for launching their children, 144 empty nest families, and 146 families in retirement. The results

showed that the cohesion differed as the stage of life cycle changed. Family cohesion was at the highest level with couples at stage one and gradually decreased until the lowest level of cohesion at the stage five (when the children left the family). Further, the results showed similar findings for family adaptability. In addition, this study employed additional scales related to family life and investigated their relationship to functioning across the family life cycle. Results showed that cohesion and adaptability were strongly associated with the other scales such as family stress and change (FILE), Family Coping (F-COPES), and Adolescents Family Inventory of life events (A-FILE) (Olson et al, 1983).

2.3.1 Validation of the Model:

The Circumplex Model of the Marital and Family System identifies different types of the family structure based on the level of the cohesion and adaptability. The model hypothesises that when the cohesion and adaptability dimensions are at the lowest levels, this would drive a family to have an extreme structure. A balanced family occurs where the cohesion and adaptability dimensions are at the highest levels, and mid-range families occur where the levels of family cohesion and adaptability are in between. A study by Portner (1980) studied family types in non-problem families and clinical families. 55 families (parents with one adolescent) as clinical families, and 117 non-problem families took part. The results revealed that non-problem families were balanced families in terms of cohesion and adaptability. However, clinical families were described as chaotic disengaged family which low cohesion and adaptability. Further a study carried out by Bell and Bell (1982) aimed to make a comparison between 33 families with runaway children and 117 non-problem families in terms of cohesion and adaptability. The FACES and IPAC scales were used in this study. It was found that the runaway families were best described as the Mid-Range and Extreme type, while the non-problem families were best described as balanced. Also, to demonstrate that balanced families are more functional than extreme families a study by Clark (1984)

showed that the most extreme family types were found in groups who suffered from neurotic schizophrenia compared with no-therapy family. On the other hand, Clark found higher levels of balanced families in the no-therapy group compared to the therapy groups. Moreover, Olson and Killorin (1983) found that the extreme families were more likely to be found among alcoholic families compared with nondependent families. Carnes (1989) investigated family types in two different samples: sex-offenders and non-sex-offender. He found out that a more extreme type of family was found in the sex-offender sample, while the non-sex-offender families were found to be more of the balanced type. Finally, a study carried out by Garbarino, Sebbes, and Schllenbach (1984) compared 27 families at high risk and 35 families at low risk for destructive parent-child relations. They found most of families at high risk were described as an extreme type of family, whereas families at low risk appeared to be of the balanced type.

2.3.2 The Dimensions of the Theory:

The Circumplex Model is composed of three dimensions which describe and provide a better understanding of family functioning: family cohesion; family adaptability; and family communication (Olson, et al., 1983; Maynard, & Olson, 1987; Olson, 1989; Kouneski, 2000). Based on the level of family cohesion and adaptability, family functioning can have a positive or negative effect on family members (Olson et al., 1983; 1988; 2000). In other words, the higher the level of cohesion and adaptability, the more family functioning has a positive effect on the family members, and vice versa.

Family cohesion "*is defined as the emotional bonding that family members have towards one another"* (Olson et al, 1983, p. 48). Family adaptability "*is defined as the amount of manageable change in the family's leadership, role relationship and relationship rules"* (Olson et al, 1983; 48). Family communication refers to skills of communication among

members which enable them to negotiate changes to cohesion and adaptability rules (Olson et al, 1983, p.49).

In the Circumplex Model, groups of specific concepts are used to measure the central dimensions of family functioning cohesion and adaptability. Family cohesion is further determined by emotional bonding, boundaries, coalitions, time, space, friends, decision-making, interests and recreation. All of these concepts can be measured to diagnose family cohesion. Family adaptability is determined by control, discipline, and negotiation style, role relationship and relationship rules. The concepts of family adaptability can be measured to find out how the family system achieves a balance between stability and change (Olson et al., 1983; 2003; 2006).

Family communication is often not measured as a separate dimension. Most of the previous studies that investigated family functioning used FACES scale to measure levels of two dimensions cohesion and adaptability family, however some items were included in cohesion and adaptability to indicate communication (Olson et al., 1983;2000;2006).

The main assumption of the Circumplex Model is that, as long as family cohesion and adaptability are on a balanced level, healthy family functioning will affect their members positively in terms of psychological well-being. In contrast, an unbalanced level of cohesion and adaptability (very high or very low) is correlated with unhealthy family functioning. However, Olson mentioned that the very high level of cohesion and adaptability can be accepted by other societies and it might be recommended (Olson et al.,1983;1989). The Circumplex Model of Marital and Family Functioning theory, and the Family Adaptability and Cohesion Evaluation Scale (FACES) are widely used. They have appeared in many fields of study such as psychology, family social science, medicine, marriage and family therapy, psychiatry, social work, and education, and more than 1000 studies have used the

FACES instruments whilst more than 450 are published. The results of the studies indicate that at least one dimension of cohesion or adaptability of FACES is correlated with health and developmental outcomes in the family (Kouneski,2000). Moreover, couples in well-functioning families appreciate marital conflicts and they solve the conflicts in an effective manner (P.Greeff,2000). Also, behavioural problems are associated with extreme levels of cohesion and adaptability (Smets & Hartup, 1988).

The two dimensions of cohesion, and adaptability in the Circumplex Model are thought to be independent and separate of each other. In an earlier stage studies were conducted by Russell (1978; 1979) and confirmed that these two dimensions should be treated separately. Russell (1978) used four behavioural measures of adaptability and one social support measure. Also, there was one self-report and one behavioural measures of cohesion, family support, and family creativity. Factor analyses showed that the four measures of adaptability loaded significantly on one factor, and no item related to adaptability loaded on a second factor that represented the cohesion dimension. One year later, in 1979, Russell administered the family cohesion and adaptability scale along with Moos's Family Environment Scale (FES) (Miller et al., 1985) on twenty-nine families. The results showed that the items related to adaptability loaded on a separate factor but not on other factor on which the items of cohesion loaded (Olson et al., 1983).

To sum up, the previous studies showed that the Circumplex Model of the Marital and Family System is revolving around three dimensions: cohesion, adaptability, and communication. However, the two main dimensions of family in this model are cohesion and adaptability, and they are used in order to establish family functioning. While, communication is thought to be a facilitating factor for the family to move on the other dimensions. Moreover, one of the main assumptions of the Circumplex Model is to treat the

two main factors of family cohesion and adaptability as independent and separate dimensions.

The Circumplex Model has been applied in different cultural contexts such as Swiss (Vandeleur et al., 1999), Spanish (Youngblut, 2006), Swedish (Engström, 1991; Råstam & Gillberg, 1991), Japanese (Kurokawa, 1990), Chinese (Phillips, West, Shen, & Zheng, 1998), German (Kirchler, 1988; 1989) and Hebrew (Ben-David, 1995). While this indicates that the model can be used cross-culturally, evidence so far has been confined to the Western world and select parts of Asia. There is a notable absence of studies from the Arab world, which the present project addresses by focusing on the context of Saudi Arabia, one of the most central countries in this cultural sphere.

2.4 The Role of Family in Saudi Arabia:

The family in the Kingdom of Saudi Arabia is considered as an important social unit, and it provides the society with characteristics which distinguish it from other societies. In spite of the changes happened to Saudi society which made some amendment, the family and its effects on the family members' behaviours is still important (Aletibi, 2014).

The Saudi society went through several economic and social changes which affected the family unit to various extents. These changes can be divided into three historical stages: family before the discovery of petroleum, family after the discovery of petroleum, and as a last stage is the family and new technology. The family in each stage has different characteristics which reflect the family members' roles. The family in the first stage was dependent on agriculture in some areas and fishing in the area close to the sea to gratify the basic family needs like food, income and so forth. In this time, consequently, the family was keen on the extended family to live in the same house. For example, siblings married and lived in the same house. Also, the circumstances in that time motivated husbands to marry

more than one wife, or encourage their children to marry when they were in the age of puberty in order to make the family bigger as they could help each other. Aletibi (2014), Alssif (2010), and Estanboly (1996) summarized the main features of the extended family as follows: ***Family cooperation,*** because grandparents, parents, and children live in the same house this provides additional good opportunities for children to live with the grandparents and learn from them how to behave and develop their identity of their society. Also, because the fathers very often went out for work for most of their days they felt safe doing so because grandparents and mothers would look after their children and fulfil their needs. ***Social cooperation***, well established social norms meant that all the families who lived in the same neighbourhood in that time helped each other when they needed each other. For example, when one family had a celebration such as a wedding or one woman was ill and she needed support, all the families tried to volunteer in order to help them. Also, another feature of the family before the petroleum appeared is that families had a comparatively ***simple live,*** in material terms, the house had limited rooms, and it was possible that parents and their children were sleeping in the same room, also the furniture of the house was very simple. The family members especially mothers and their daughters cooperated to clean the house and made foods. Moreover, the ***social communication*** was very obvious in that time, it was said that all the houses' doors were open, and all people from the same neighbourhood were welcomed. Also, neighbours asked each other if they needed any kind of help and they shared each other's difficulties. Regardless of any other disadvantages that individual family members may have incurred at this stage, family functioning was firmly embedded in the overall societal context (Aletibi, 2014; Alssif,2010; Estanboly,1996).

The second stage that Saudi society went through was after petroleum was discovered in Saudi Arabia in 1953. The Saudi society was dramatically changed economically and socially. These changes influenced the family as part of the society. This was the start of

changing the structure of the family from the extended family to the nuclear family. The nuclear family contains only parents (fathers, mothers) and children (siblings) living in the same house away from the extended family. Also, families started to leave their towns or villages to the big cities in Saudi Arabia like Riyadh, Jeddah, and Dammam to improve their life by finding new jobs and increase their income. This immigration led to a rise of other issues which made life economically difficult for the family such as buying a new house or renting one, and looking for schools for their children. Due to that women (wives) were encouraged and required to look for jobs to help their family in order to gratify the family needs. Consequently, women spent more time out of their house which raised other issues like concerns of parenting and children's needs. So the families needed more assistance in order to look after their children. The house maids have become an important assistant to help family to look after their children which was not happened before (Al-katib,2007; Estanboly, 1996).

2.4.1 Saudi Family and the Internet:

The third stage that Saudi society underwent, is characterised by digital technology revelations. Digital technology here refers to the introduction of the Internet. The country of Saudi Arabia has been connected to the Internet since the beginning of 1990s, however, Internet access has become available for the public since the end of the 1990s. In March 1997 the King Abdul-Aziz's City for Science and Technology (KACST) received permission to introduce Internet services from the Ministries Council. According to this permission KACST started to set up the Internet Services Unit (ISU) in order to develop and improve the regulations and policies of the internet. The ISU provides the technical support for the local Internet services providers (ISPs) such as universities, and government agencies (Allehaibi, 2001). Also, the ISU controls the Internet traffic by using the filtering web to ban

those Internet materials that are not religiously, and socially acceptable, such as pornography, content related to drugs, bombs, alcohol, gambling and others (ISU,2004).

The Internet has been growing rapidly since appeared in Saudi Arabia. According to google Internet map (2016), the percentage of users in Saudi Arabia is over half of the population. In Saudi Arabia Internet access seems to be available everywhere across the country and also is considered as cheap. Also, a report provided by the Communications and Information Technology Commission CITC (2015) stated that the number of Internet users by the end of the first half of 2015 was 21 million users. This number of users in Saudi Arabia represents about more than 65% from the population.

The Internet has become an important part for most people's daily lives around the world. For example, in Western societies Internet use has increased by about four times at least since the beginning of the twenty first century (Denissen, 2010).

In western countries the Internet is used for different purposes like communicate with other people, education, sharing their interests, entertainment (Mesch,2003;2006; Mickus & Luz ,2002; Lanigan et al,2009; Stevenson,2011; Valenzuela ,2014; Kraut at el.,1998). Similarly, in Saudi society there are several purposes of using the Internet and some studies have been carried out to determine the purposes of being online. For example, a report given by CITC (2007) indicated the reasons for using the Internet as follows: browsing, communication, gaming, (listening & watching), and use for academic purposes. King Abdul-Aziz of Technology and Science (1999) reported that about 79% of users in KSA used the Internet from their homes, while 15% used it from the workplace and about 6% from Internet cafes. Also, the results indicated that just above 80% of users were in between 20 to 30 years old. Most of the sample used the Internet for browsing the web using email and chatting with other people. In addition, a study of Alfrm (2001) aimed to investigate the need satisfaction that the Internet was providing to its users and the time that users spent on it in Riyadh the

Saudi capital. The sample of this study consisted of 340 participants with online access in different places (125 Internet cafes/shops, 86 government institutions, 72 private institutions, and 57 educational institutions). In terms of need satisfaction, the participants indicated that the Internet was used to meet the need for knowledge, emotional needs, and social entertainment needs. Internet usage was strongly correlated with participants' age between 21 to 24 years old. Also, the results reported that users spent one hour to five hours every week on the internet, and normally users used the Internet alone. Furthermore, Al-Tawil (2001) studied Internet usages in Saudi Arabia. The study was conducted on 1056 computer users with an average age of 30 years, and 68% male and 32% female users. The results showed that more than half of the sample had computers at home and were connected to the Internet. About 15% of the sample used the Internet every day while 21% use the Internet irregularly. Also, more recently, a study in Saudi Arabia carried out by Simsim (2011) indicated that most of the study's sample were Internet users, while just above 15% said they were non-Internet users. Without doubt, the Internet has become part of the Saudi people's daily lives. In the same previous study of Simsim, it was found that more than two thirds of the sample reported they used the Internet every day, and also that they spent a similar amount of time every day. The interesting result was that the preferable time to use the Internet during a day is between 6 pm to midnight. It is highly likely that this time would otherwise be spent with family members and with sharing their interests. Moreover, a study by Alzoman (2012) aimed to determine the amount of the time spent on the Internet per day, and the reasons that encourage users to use the Internet. The research was conducted on about 200 undergraduate students ,100 males, and 100 females at AL-Emmam- University in Riyadh. Results indicated that most of the participants spent more than 3 hours per day online, while only 4% of the sample mentioned that they did not have Internet access. In terms of the preferred websites, the participants indicated that google was considered as the

most important site, followed by YouTube, Twitter, and electronic magazines. The study also pointed out that more than two third of the participants use the Internet for surfing for information about half of the participants said that they use the Internet is to pass the time, some participants found a good opportunity in the Internet to express their feelings to others, and finally, the last reason for using the Internet was to make new friends online.

The studies that have been carried out in Saudi Arabia, or in the Arab world, to determine the impact of being online on families are very limited. However, the studies that there are so far give an indication that the Internet can affect the Saudi family. For example, Jwahr (2005) conducted a survey in order to determine reasons for divorce from the sample's perspective in Saudi society. She listed the Internet as one reason for getting divorced. About more than half of divorced participants stated that use of the Internet for communication with strangers in chat room such as pal talk were the reason for being divorced. Also, just below one third of divorced participants claimed that visiting pornography websites led to divorces. Only 2% of the participants said using the Internet in general can be a reason for divorce. Furthermore, it has been argued that the Internet may weaken close personal relationships. A study by Alawidi (2004) aimed to explore uses of the Internet, and examined its impact on users. The study was carried out on 50 undergraduate students. The results showed that about half of the sample spent about 2 hours per day on social networks. In addition, the results showed that online social networking can be a factor that increases political debates and conflicts which was seen as the main disadvantage of online networking. Also, the use of online social networks can decrease the time spent with family and friends. On the other hand, online social networks provided a good environment in which users could discuss subjects, and increased their knowledge. A recent study, conducted in Algeria by Nomar (2012) aimed to find out to what extent the Internet especially Facebook impacts on off-line relationships. Results showed that the purposes of using Facebook was to communicate with

other relatives and for knowledge purposes. Also, results indicated that using Facebook may weaken off-line relationships. Also, Abuiyada et al (2016) found that using the Internet can negatively affect relationships among family members especially between couples in Oman society.

The current study will consider the impact of social networking and online communication as one aspect of Internet usage along with other forms of Internet activities on family functioning, looking at both the type of activity and the time spent on these Internet activities.

2.5 Summary:

This chapter shed a light on the family functioning concept by providing one of the widely used theories which is the Circumplex Model developed by Olson (1983). Also, it described the three stages that Saudi society went through, beginning from before discovering petroleum to the technology stage. Some studies in SA were carried out in order to describe Internet behaviours as time spent online, and type of online activities that users used. It can be said that the Internet has become used frequently by Saudis users as in many societies around the word. Users in Saudi Arabia use the Internet for many different purposes and it has become part of their daily lives. According to the previous studies in Saudi society, the Internet can be used for several purposes represented by four main factors as follows: browsing for information, pleasure (passing time, watching, listening), friendships (making new friends, chatting with others), and gaming. Also, previous studies have shown that the Saudi people spend an increasing amount of time online, during times that are important for socialising. These purposes of using the Internet and time spent on online activities can weaken the relationships among family members and weaken family cohesion. As a result, it may raise some challenges and difficulties for negotiating family rules. So far, few studies have investigated the Internet's impact on family functioning. The next chapter will provide

a review of literature which has examined the influences of the Internet on the family and well-being.

3. Chapter Three: Family, Internet, and Well-being.

3.1 Introduction:

This chapter aims to review the studies that focus on the impact of Internet usage on family functioning and individual psychological well-being variables. The chapter is divided into two main parts, the first part focuses on the empirical studies which investigate the relationships between different aspects of Internet usage such as communications online, searching online, education, and family functioning. The chapter then moves to the second part which reviews studies which investigate the impact of Internet usage on individual psychological well-being. This covers the themes of loneliness, self-esteem, satisfaction with life, and presents studies which confirm that frequency of using the Internet is associated with some psychological disorders.

3.2 The Internet and family functioning

3.2.1 Positive impact of Internet on family functioning:

The Internet can be used for many purposes which facilitate the life of a family such as communications, searching for particular information, and entertainment (Mickus & Luz, 2002; Lanigan, 2009; Stevenson, 2011; Mesch, 2003; 2006; Valenzuela, 2014; Kennedy & Wellman, 2007).

Few studies have investigated the influences of using the Internet in a family life context. In general, previous studies have indicated that the Internet can affect family functioning (Mesch, 2003; 2006b; Carvalho, 2015), but this impact, whether positive or negative depends on the specific Internet activities that family members use (Lee, 2007; Mesch, 2006).

It has been shown that the family can take an advantage from using the Internet by communication with other family members to maintain their relationships. Mickus and Luz (2002) investigated the relationship between the use of videophones and the quality of

communications between nursing home residents and their family. Results indicated that the videophone is a significant factor which help to strengthen the relationship among family members, especially for people who lived away from their family. Furthermore, Lanigan (2009) conducted a socio-technological investigation into the effects technology has on family relationships, especially exploring computer usage for communications. The results indicated that the more family members use technology, the higher family members score on communication, cohesion, and adaptability. Also, Stevenson (2011) indicated that communication can be an alternative way for maintaining previous family relationships, especially between children who left their parents. Kennedy and Wellman (2007) pointed out that online communication helps family to be together and available, while they can do what they like. Also, a review carried out by Carvalho (2015) of 45 studies published between 1998 and 2013, which examined the relationship between Internet usage especially ICTs and family functioning found that ICTs contributed to qualitative changes in family functioning, and also created new patterns of communication among the family members. However, this study mentioned that the results from published papers were conflicting. Carvalho suggested that possible reasons are because of the scales that evaluate the family process variables, the design of the previous studies, and the age of the family members.

In addition, the Internet, especially when it is used for education purposes and to extend knowledge, can increase children's attachments to their parents. A study by Mesch (2003) investigated the impact of Internet use frequency on adolescents in Israel. He pointed out that the more the Internet is used for setting and achieving learning targets, the higher the attachment to parents. Also, Mesch (2006) indicated that use of the Internet for education was associated with family cohesion (Mesch, 2006). Furthermore, the Internet is considered as a valued source for family members to help them to make decisions, and decision-relevant information on the Internet is not only accessible for adults; adolescents and children can

also contribute to family decisions this way, and they will be able also to negotiate better with other family members. A study by Belch (2005) investigated to what extent the Internet can affect the family decision-making process. The study was conducted on a sample of 167 teenage Internet users, with an average age of 14.9 years. The results indicated that the teens enjoyed using the Internet and contributed a significant amount to the family's decisions. Also, the study pointed out that the advent of the Internet has impacted on the family decision making process by expanding the knowledge of the teens who are Internet users, which allows them to negotiate with their parents, regarding family decisions.

3.2.2 Negative impact of Internet on family functioning:

However, the Internet can also have a negative impact on family functioning. For instance, using the Internet for socialising, and social network sites (SNS) in particular, has been associated with marriage conflicts. A study by Valenzuela (2014) explored the relationship between using SNS and marriage happiness. The data were obtained from the National Centre for Health Statistics (NHCS). The results indicated that there is a positive correlation between the more frequent use of SNS and variables that represent marriage conflicts, such as lower marriage quality, marriage unhappiness, experiencing troubled relationships, and thoughts of separating.

Also, Internet use for communication with strangers or people who are not related to the family as well as entertainment activities can be perceived by children to lower and replace the time spent with family members and reduce family communications. A study by Lee (2007) investigated to what extent Internet activities can affect family time and communications among children. This was measured by reported time spent on the internet, and how frequently the sample carried out specific activities, including communication,

education, and entertainment. The sample consisted of 222 children aged between 10 and12 years in Korea. Entertainment online was found to be negatively associated with family time. Also, communication online was found to be negatively correlated with family communication, while education was found to be positively associated with family especially when parents' instructions were given to children to use specific web sites. This study also pointed out that the direction of the impact of Internet usage on family functioning is relying on the type of the Internet activities. In addition, Mesch (2006) carried out a study involving 396 teenagers in between 13-18 years, with an average age of 15.5 years. Internet measures included the time spent online and the purpose of using the Internet for social and non-social. The results indicated that using the Internet for social purposes was associated positively with family conflicts, and time spent on these online activities was also associated with a decline in family cohesion.

Furthermore, using the Internet excessively, captured either by time spent or by specific activities online can lead to Internet addiction which has been shown to be significantly correlated with family conflicts. A study by Yen (2007) investigated the association between family processes such as family economics, parental marriage, status of caregivers, the frequency of intra family conflicts, habitual alcohol use, and perceived caregivers' attitudes toward adolescents' substance use in Taiwan. A sample of 3662 students, 2328 boys and 1334 girls, from junior, senior and vocational high schools, in southern Taiwan took part in this study. The results indicated that higher adolescent conflicts and lower family functioning were associated with Internet addiction and also with substance use. Also, Park (2008) carried out a study on 1289 adolescents, 52% male and 48% female, with an average age of 17.5 years, in order to investigate the relationship between the family processes of cohesion and communication, and Internet addiction. The study revealed that there was a negative association between the family process variables and Internet addiction. Furthermore,

Wartberg (2014) investigated the association between Compulsive Internet Use (CIU) and family functioning among German adolescents. The study was conducted on 1744 participants, half of whom were male, and their ages ranged from 14-17 years. CIU was measured by the Compulsive Internet Use scale (Meerkerk et al., 2009). While family functioning was measured by the Family Assessment Measure Version III (Skinner et al., 1995). It was found that there was a significant association between family functioning and youths who have CIU.

In addition, it was found that the parenting practices are an important factor for their children to prevent them from being addicted to the internet. A study by Liu (2012) found parenting practices including parent-adolescent communications and the rules made by parents in terms of using the Internet to be significant predictor variables of being addicted to the internet. The study was conducted on 3556 Chinese junior and senior high school students. Communications between parents and their adolescents were negatively related to the likelihood of being addicted to the internet. Furthermore, the study indicated that the consistency between the rules of using the internet, and parents' own Internet behaviours were associated negatively with Internet addiction for their adolescents.

In Saudi society, the introduction of the Internet to family life has raised some issues. As discussed in the previous chapter under section 2.5, the family has undergone several changes especially at the Internet introduction stage in Saudi Arabia.

3.2.3 Summary:

The family is a very important factor in protection of its members from many problems, such as behavioural and psychological disorders, and provides family members with a sense of belonging to the family. It is agreed that the family should be protected from any risk that

can affect family functioning negatively (Petrocelli,2003; Shek & Daniel, 1997; Mandara ,2000 ;Mullis, 2003; Al-katib, 2007;Kawash,1990; Higgins ,2003; Jeffrey,1991).

As discussed previously, the introduction of the Internet may play a role in family functioning and the type of impact depends on the type of Internet activities (Lee, 2007). The impact of using the Internet on family functioning varied from one study to another: some of them confirmed that the Internet can help to maintain and increase family relationships and cohesion, while others pointed out that the Internet is considered to decrease relationships among family members especially when used for communication with people who are not related to the family (Valenzuela, 2014; Mesch, 2003; 2006; Lee, 2007). The possible reasons behind the inconsistent results may be because family functioning was not measured by standardised instruments. If just a few questions were used, they may not have covered the concept of family functioning (Carvalho, 2015). Also, the measures for Internet concepts may not have included an appropriate range of online activities which means that the actual impact of Internet use is not captured.

3.3 Internet and psychological well-being

As the Internet has become an important part of people's daily life, many studies have considered the relationship between Internet usage and different psychological well-being variables in order to find out to what extent Internet usage is related to psychological well-being. Studies have investigated relationships involving loneliness (McKillop, 2011; Williams, 2000 ; Morgan, 2003 ; Engelberg, 2004; Whitty, 2007 ;Mesch ,2001; Moody ,2001 ;Kraut, 2002 ; Shaw, 2002; van den Eijnden, 2008; Gross, 2002; Gross, 2004;Subrahmany and Lin, 2007; Yao ,2014) , self-esteem and satisfaction with life (Shaw, 2002; Ellison 2007 ; Lissitsa 2016 ; Mesch 2006 ; Stepanikova 2010; Valkenburg 2006) and other disorders that

are related to Internet use (Mazalin 2004; Jackson 2008 ;Ybarra 2005; Cotton 2014 ; Ghassemzadeh 2008; Der 2009 ; Kim,2009).

Different perspectives from psychologists have been offered to describe psychological well-being. For example, Rogers (1961) labels well-being as being a fully functioning person, Maslow (1964) describe it as a conception of self-actualization, and Allport (1961) defines it as a concept of maturity. Other perspectives on well-being are obtained from studies on life cycle changes. Neugarten (1968,1973) describes the personality change in adulthood and old age, and Buhler (1935) said that well-being works in the direction of the achievement of life (see Ryff,1989).

Psychological well-being differs from clinical disorders in terms of time period of the symptoms and symptom severity. For example, a depression disorder has certain conditions that a person should meet to be diagnosed as a depressed person. For instance, the depression should have lasted for more than two weeks, and the symptoms of depression should not have changed even the life circumstances have been changed, while well-being can be decreased or increased based on the life circumstances and it would not be persistent as the depression disorder (American Psychiatric Association, 2013).

From the previous debate, well-being can be affected positively and negatively based on the changes happened during the life cycle. For example, changes in family functioning during the life cycle will affect the level of well-being (see Chapter 2). Selecting self-esteem, loneliness, satisfaction with life and family life variables to represent well-being is due to these variables being highly correlated and also it could have helped to observe any changes of well-being levels. Also, there are lots of studies that showed that family functioning can be a predictor of psychological well-being.

3.3.1 The Internet and Loneliness:

3.3.1.1 Positive Impact of Internet Usage on Loneliness:

It has been found that Internet usage has played a role in individual psychological well-being. Internet usage was found to be a positive factor to increase the feeling of being lonely. A report by the McKillop (2011) indicated that using the Internet for social purposes was correlated positively with feelings of loneliness in a sample of 1204 participants, aged 18 years and above. Also, different studies have supported that there was a difference between heavy Internet users and low Internet users, in term of their feelings of loneliness, with heavy Internet users being lonelier. A study by Williams (2000) conducted on a sample of 89 high school students, investigated the association between time spent online and social isolation. The method of the study divided the users into two groups, based on the time spent online, of high use or low use. The results indicated that the students who classified as a high group in spending time online experienced higher feelings of loneliness and vice versa.

In addition, Morgan (2003) carried out a similar study on 277 undergraduate students with a mean age of 20.7 years, and 98% reporting having Internet experience. In order to find out the association between Internet usage and feelings of loneliness, the study divided the participants into two groups, based on their scores on the loneliness scale, lonely and non-lonely users. The results revealed that the lonely participants were more likely to spend time online and used email more than the non-lonely participants.

Furthermore, the results showed that the lonely users preferred communication online rather than face to face. In the same way, Elizabeth (2004) studied the extent to which interpersonal variables were related to frequency of Internet use. This study was conducted on 20 female and 21 male students from Sweden, with an average age of 21.1 years. Several variables were measured, identifying emotions in facial expression, loneliness, work/leisure balance,

identifying emotions in social episodes, and frequency of Internet use. The results of the study showed a very large dissimilarity in loneliness between high and low frequency Internet use. It was found that the higher users reported a higher score in loneliness. Similarly, Whitty (2007) examined the relationship between Internet use for entertainment and loneliness, and Internet self-efficacy. A total of 150 undergraduate students took part in the survey, 75 males and 75 females, with an average age of was 20.6 years. The result indicated that students who reported a higher score on the loneliness scale were more likely to use the Internet extensively specially for entertainment as well as obtaining information about the entertainment.

Moreover, it was claimed that Internet usage decreased the number of friends in real life, with whom users can share their situations to avoid the feeling of loneliness. For instance, a study by Mesch (2001) examined the relationships between the frequency of Internet usage and loneliness among adolescents. The data were obtained from the annual national youth survey carried out by the Minerva Centre for Youth Studies at the University of Haifa. The results showed that users of the Internet reported that they had fewer close friends. Also, users felt that their friends were less likely to listen to them in order to share their difficult circumstances, which led them to being isolated and feeling lonelier.

Equally, feelings of loneliness can be higher in relationships with friends online, compared with the off-line network. A study by Erick and Moody (2001) compared the association between networks of friends (off-line and on-line) and defined social loneliness as *"the feelings of boredom and marginality due to the lack of meaningful friendships or a sense of belonging to community"* (Erick & Moody, 2001, p. 394) and emotional loneliness as *"a feeling of emptiness and restlessness due to the lack of intimate relationships"* (Erick & Moody, 2001, p. 394). The study was conducted on 166 undergraduates, 47 males and 119 females, with a mean age of 19.2 years. The results revealed that the frequency of using the

Internet was positively associated with level of emotional loneliness, but there was no correlation with social loneliness. However, the results showed a negative relationship between the face-to-face network and social, as well as emotional loneliness.

More recently, in a study carried out by Yao (2014), it was found that using the Internet heavily increased the feeling of loneliness. This study was conducted on 361 college students in Hong Kong.

3.3.1.2 Negative Impact of Internet Usage on Loneliness:

In contrast to the previous section, other research has argued that the Internet can be a helpful tool for users to decrease feelings of loneliness. A study by Kraut et al (2002) followed up an earlier study published in 1998, that showed the Internet increased feelings of loneliness. The follow-up study reinvestigated the influences of the Internet on loneliness. A longitudinal study was conducted on 93 families from diverse neighbourhoods in Pittsburgh Pennsylvania. This study measured the Internet use through hours spent on the Internet in a week (using email, read newspaper, social sites). The results of the second wave confirmed that the negative association with well-being found previously had disappeared and the Internet had become an assisting factor in increasing well-being, especially through communication online. Also, Shaw (2002) indicated that chatting via Internet was associated with low levels of loneliness and high self-esteem among 40 students under study.

Furthermore, Regina (2008) designed a longitudinal study in order to investigate the relationship between online communication represented by Instant Messaging and the level of feeling lonely in teenagers. It was conducted on 663 school students 318 male and 345

females with an average age of 13.4 years. The results of the study showed that online communication especially instant messaging was negatively correlated with loneliness.

3.3.1.3 No Impact of Internet Usage on Loneliness:

Other empirical studies indicated that there are no direct relationships between Internet usage and loneliness. This is in line with Intimacy Theory which states that a few close relationships high in meaning and understanding can predict high psychological well-being, while close relationships marked by rejection or ignoring of the relationship can lead to low well-being (Hartup, 1996). For example, Gross (2002) investigated the association between daily Internet use, with a focus on instant messaging, and feelings of loneliness among adolescents. A total of 130 students from one public school in Southern California took part in the survey, 49 were male and 81 female with an average age of 12.1 years. The participants were asked to complete three daily reports of their overall well-being, social adjustment (loneliness and anxiety in school) and activities after school, including Internet activities. The results showed that there was no relationship between times spent online and psychological well-being. However, the study found that the internet, especially instant messaging when it was used with close partners, affected well-being such as loneliness positively. Similarly, Gross (2004) conducted a study in order to find out whether using the Internet might cause feelings of loneliness and depression. The study was conducted on 261 students from a public school in California. The results revealed that there was no association between Internet usage and loneliness and depression. Also, Subrahmany et al (2007) investigated whether the Internet was related to feelings of loneliness. A total of 192 participants participated in the study and their average age was 16.2 years. The Internet

characteristics were time spent online and use of email. The findings indicated that the relationship between time spent online and using email were not associated with loneliness. Also, it might be worth to mention here some studies investigating the influences of Internet usage on social capital. Social capital broadly refers to resources obtained from the relationships among people within social contexts (Bourdieu, 1985; Ellison et al., 2007, 2011; Valenzuela et al., 2009). Bourdieu and Wacquant (1992) defined social capital as "*the sum of resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintances and recognition*" (Bourdieu et al., 1992, p14, cited from Ellison, 2007). The concept of social capital motivates and generates interpersonal relationships, and these relationships are invested as outcomes to the social resources, (e.g. improved health, access to expertise, and financial resources) (Portes, 1998). Hence, the interactions between people is considered as a fundamental factor that shapes social capital.

Putnam (2000) pointed out that there are two aspects of networks among people that invest in social capital: bridging social capital refers to the outcomes of weak ties among people which has less emotional content, e.g. links to new people, acquaintances. The second network is called bonding social capital and refers to the strong relationships with others e.g. family, close friends' relationships (Putnam,2000).

There is consensus that the Internet gives an opportunity to increase the networks of either bridging or bonding social capital, and also helps maintaining the existing relationships (Boase et al., 2006; Kraut et al., 2002; Wellman et al., 2001). For example, work by Ellison (2007) found that the Internet especially using Facebook keeps users connected with members which allow them to increase their contacts with other people, and to maintain the relationships. Furthermore, Wellman and others (2001) indicated that there was a significant association between heavy Internet usage and increasing the number people known.

However, these studies have not yet presented clear ideas whether the social capital is a factor that predicts psychological well-being.

3.3.2 The Internet and Self-Esteem, and Satisfaction with Life:

3.3.2.1 Positive Impact of Internet Usage and Self-Esteem, and Satisfaction with Life:

Inconsistent findings have also been reported for the relationship between self-esteem and life satisfaction and Internet use. Studies in general have shown that individual psychological well-being can be influenced by Internet usage, but with inconsistent results. Some studies have considered Internet usage, especially for communication, as a good means for users suffering from low self-esteem. It was found that chatting online can increase the level of self-esteem over time (Shaw,2002). Also, a study by Ellison et al (2007) examined the relationship between Facebook use as a social network site and social capital dimensions (bridging, bonding and maintained capital). The study was conducted on 286 undergraduate students from Michigan State University. Use of Facebook was found to be associated strongly with dimensions of social capital. In addition, the findings suggested that the use of Facebook provided greater benefit for users experiencing low self-esteem and low life satisfaction. Likewise, the Internet can also increase life satisfaction over time. A study by Lissitsa (2016) investigated the interaction between Internet adoption and satisfaction with life for about one decade between 2003 and 2012 in Israel. The Internet was measured by questions on using the computer for different purposes, such as searching for information, emailing, shopping, discussion, communications, and games. The age of the sample ranged between 20-64 years. One of the main results of this study showed that the Internet usage played a role in increasing satisfaction with life.

3.3.2.2 Negative Impact of Internet Usage and Self-Esteem, and Satisfaction with Life:

On the other hand, it was found that the level of self-esteem can be decreased by being online. A study by Mesch (2006) studied the impact of different aspects of Internet usage on self-esteem. The study determined three aspects of Internet usage (social, non-social and time spent online). This study was carried out on 396 participants aged between 12 and 18 years old. The results indicated that using the Internet for social purposes had a significantly negative association with self-esteem while using the Internet for non-social purposes and time spent online were not significantly correlated with self-esteem. Similarly, time spent online can reduce the level of satisfaction with life. A study by Stepanikova (2010) studied the relationship between the time spent online on different activities, such as seeking information online, creating new websites, emailing, and the level of satisfaction with life. The results of the study revealed that the time spent browsing the Internet was negatively associated with satisfaction with life.

3.3.2.3 No Impact of Internet Usage and Self-Esteem, and Satisfaction with Life:

Other studies have indicated that Internet usage does not impact on self-esteem and satisfaction with life directly but indirectly by users' perceptions of feedback they receive online. A study by Valkenburg (2006) investigated the Friends' Online network among 88 participants aged between 10 and 19 years. The sample consisted of 45% males and 55% females. The results showed that the Friends' Online network can increase the level of self-esteem and satisfaction with life by the type of feedback that participants have received on their profile. That means the Internet might not impact directly on self-esteem and life satisfaction on its own. But comments made by friends on users' online profiles, especially

if the comments are negative, can decrease the level of self-esteem and life satisfaction. Alternatively, if comments are positive they can increase self-esteem and life satisfaction.

3.3.3 The Internet and other psychological variables:

Other studies investigated the impact of Internet usage on social anxiety, identity development, and social problems. For instance, Mazalin (2004) investigated how Internet usage is associated with the level of identity development and social anxiety. The study was conducted on 161 undergraduate students, who were studying at university in Melbourne, Australia, with 60% female at an average age of 18.9 years and 64 males with an average age of 19.40 years. Internet use was measured based on Wolfradt and Doll's Internet motivation scale (Wolfradt & Doll, 2001). For this scale the participant responses determined the applications they used on the internet, such as chat room, browsing, reading, shopping online and so forth. Also, the estimate of time those participants spent online in a typical week on those applications was measured. The identity status was assessed by using EOM-EIS self-report (Bennion & Adams, 1986) and the LSAS-SR (Liebowitz, 1987) to measure social anxiety. The result indicated that there was a difference between females and males among the study's variables. In more detail, the result showed that males reported a higher score on both social anxiety and Internet usage, while females reported a higher score on identity status. In addition, male Internet users showed higher use of the Internet and reported lower psychological well-being. The core findings of this study were that using the Internet for chatting and online browsing was associated with less identity status and high social anxiety for male users but not for female users. Also, Jackson (2008) investigated the impact of Internet usage on psychological well-being using four types of Internet use (videogames, communication, using a cell phone and using the Internet in general) and eight dimensions of psychological well-being (aggressive behaviour, withdrawn/ depressed, anxious/depressed, attention problems, rule-breaking behaviour, social problems, somatic

complaints and thought disturbances). A total of 500 children with an average age of 12 years, and 500 parents (African American and Anglo American) took part in this study. The parents were given the Child Behaviour Checklist (CBCL) develop in this study as the first section to observe their children's behaviour. The second section was information about how children use the technology. The results of the study indicated that the children who played more videogames were rated by their parents as more aggressive, withdrawn/depressed, anxious/depressed, with more rule-breaking behaviour, social problems and somatic complaints, than those who played less. Moreover, the results showed that greater Internet use for communication was significantly associated with social problems. In addition, the more use of cell phones, the more somatic complaints were reported. Also, the Internet was associated with symptoms of depression. A study by Ybarra (2005) was conducted on young people aged between 10-17 years, in order to examine the relationship between online communications and depressive symptomology. The results indicated that about a third of the participants, who were suffering from depression, spent more than three hours per day on the internet.

A recent study (Cotten et al., 2014) claimed that Internet use can reduce the feeling of depression in elderly people. Cotten et al (2014) examined the association between using the Internet and feeling depressive among retired people from the United States. A sample of 3075 nonworking people took part in the survey; they were aged 50 years and above. The results showed that people who were using the Internet scored a high level on psychological well-being. Furthermore, the study suggested that the Internet helps retired people reduce their feelings of depression.

Recently, more studies have argued that Internet use has no direct impact on psychological well-being directly but that it might lead to disorders such as compulsive Internet usage (CIU), problematic Internet usage (PIU), and Internet addiction (IA), which are all related

to low psychological well-being. A study by Ghassemzadeh (2008) investigated the prevalence of Internet addiction in Iran and examined whether Iranian Internet addicts were suffering from loneliness and low self-esteem. The study was conducted on 1968 participants, 1029 boys and 939 girls aged between 14 and-16 years. This study divided the participants into three groups, based on their scores on the Internet Addiction Scale (high addicts, moderate addicts and non-users). The findings revealed that the group diagnosed as high and moderate addicts showed more loneliness and low self-esteem than non-users. Likewise, Van Der (2009) indicated that daily Internet usage is strongly correlated with CIU and CIU is associated with low well-being, such as low self-esteem, and positively associated with loneliness and a depressive mood. Also, the time spent on the Internet was associated with PIU. Kim (2009) studied the relationship between time spent online as a predictor of problematic Internet use and psychological well-being among 279 students. The results revealed that the time spent online per day can lead to have problematic Internet use which is associated with low self-esteem. In addition, a study by Chen (2012) indicated that the frequency of Internet use is a major predictor of problematic use. Results were obtained from 757 students at university in Taiwan.

3.4 Summary

The previous section presented studies which investigated the impact of Internet usage aspects, such as time spent online, frequency of using the internet, different online activities including communication online, emailing, games online, on individual psychological well-being, from the time in the 1990s when the Internet became available and accessible to everyone up to the present.

The structure of the previous section focused on the type of association that Internet aspects have with the well-being variables of loneliness, self-esteem, and satisfaction with life,

beginning with a negative impact of Internet aspects, then a positive impact, and also evidence of no direct relationship among the Internet and well-being variables. After that, the section presented an investigation of the impact of Internet usage on other relevant psychological variables, namely depression, anxiety, social problems, Internet addiction, problematic Internet use, and compulsive Internet use.

The results of the previous studies on the impact of Internet usage on psychological well-being are inconsistent and conflicting. Some studies considered the Internet as a good factor in increasing the well-being variables and others indicated that the Internet was harmful. The possible reason could be because of the constant evolution of the technology. Also, the Internet nowadays is available anytime, anywhere, compared with the past and there are new devices, such as smart phone, tablets, and laptops to facilitate connection to the Internet (Huang, 2010). Most studies reviewed were cross-sectional and not suited to draw any strong conclusions on cause and effect. Finally, a summary of the previous studies is also presented in table 3.1.

From previous studies in Saudi society and other societies it can be seen that the Internet is used for similar purposes. For example, in Saudi Arabia Internet uses include browsing, communication, gaming, listening, watching, entertainment, expressing feelings, and making friends. Similarly, in other societies the Internet is used for communication, searching for particular information, academic purposes. The Internet is providing and adding services to facilitate the life for users. In the current study, another purpose of using the Internet is added in trying to cover the concept and the main purposes of using the Internet, which is shopping online. A summary of the purposes of using the Internet from the previous literatures can be seen in table 3.2.

Table 3.1 A summary of the previous literature review.

Variables	*Type of relationships*	*Author & date*	*Participants characterised & and sample size*
Internet usage and Loneliness.	**Positive**	Williams (2000)	High School students. 37 males and 52 females.
		Mesch (2001)	Adolescent. 16 years.
		Erick & Moody (2001)	166 Undergraduate students. M=19.2
		Morhan (2003)	277 undergraduate Internet users. M=20.7
		Elizabeth (2004)	(41) Students 20 women and 21 men. M=21.1
		Whitty (2007)	150 undergraduate students. M=20.6
		McKillop (2011)	1204 participants. Age= 18 and above.
		Yao (2014)	361 Participants. College students.
	Negative	Kraut (2002)	93 Families, 208 Participants.
		Show (2002)	40 Students. undergraduate students at the University of North Carolina
		Regina (2008)	Adolescents. M=13.37
	No relations	Gross (2002)	130 Participants. M=12.1
		Gross (2004)	261 Participants. M=12.
		Arruda (2007)	192 participants. M=16.2
Internet Usage & Self-Esteem, Satisfaction with life.	**Positive**	Show (2002)	40 Students. undergraduate students at the University of North Carolina.
		Ellison (2002)	286 Participants. Undergraduate Student. Michigan
		Lissitsa (2016)	7500 Participants. Age 20 and above. Israel
	Negative	Mesch (2006)	396 Participants. Age 12 to 18.
		Stepanikova (2010)	1000 participants. Age 10 to 70.
	No relation	Valkenburg (2006)	88 Participants. Age 10 to 19.
Internet Usage & other Psychological well-being.	**Positive**	Cotten (2014)	3075 Participants. Age= 50 and above.
		Mazalin (2004)	161 Participants. Age between 18-25. M=18.9.
	Negative	Ybarra (2005)	501 Participants. Age between 10 to 17.
		Jakson (2008)	500 Participants. M=12
Internet Usage & Internet Addiction	**Positive**	Ghassemzadeh (2008)	1968 Participants. Age between 14-16
		Van der (2009)	7888 Participants. Age between 11 to 21.
		Kim (2009)	279 Participants. Age between 16 to 25. M=21.4
		Chen (2012)	757 Participants. Undergraduate students.

Table 3.2 A summary of the Internet activities.

Author	Date	Online Activities
King Abdul-Aziz of Technology and Science	1999	1. Browsing webs. 2. Email. 3. Chatting.
Alfrm	2001	1. Knowledge. 2. Entertainment.
Alawidi	2004	1. Social Networking
Jwahr	2005	1. Chatting with strangers.
CITC	2007	1. Browsing. 2. Communication. 3. Gaming. 4. Listening. 5. Watching. 6. Education.
Simsim	2011	1. Emails. 2. Chatting. 3. Entertainments.
Alzoman	2012	1. Using google 2. Using YouTube. 3. Using Twitter. 4. Reading.
Nomar	2012	1. Social Networking (Facebook).
Mickus and Luz	2002	1. Communication with relatives and friends.
Lannigan	2009	1. Communication with family members.
Steveson	2011	1. Communication with family.
Kennedy and Wellman	2011	1. Communication with family.
Carvalho	2015	1. Communication with family and friends.
Mesch	2003-2006	1. Social purposes (communication with other) 2. Non-social purposes (reading, watching)
Valenzula	2014	1. Social Networking sites.
Lee	2007	1. Communication with family. 2. Education. 3. Entertainment.
McKillop	2011	1. Social purposes.
Witty	2007	1. Entertainment.
Kraut et al	2002	1. Email. 2. Read newspapers. 3. Social sites.
Gross	2002	1. Instant Messaging.
Lissitsa	2016	1. Browsing for information. 2. Shopping 3. Email 4. Discussion 5. Communication 6. Gaming

3.5 Research Aims:

From the previous studies, it can be seen that there is no consensus on the effects of using the Internet on psychological well-being, and also that there are only few studies concerned with the impact of the Internet on family functioning. From the previous literatures, it was found that the main purposes of using the Internet are as follows: Search (Education),

Pleasure (Entrainment), Communications, Friendships, Game, and Shopping online. Also, the present work measures the time spent on these online activities as the second aspect of Internet concept. The present work investigates the impact of using the Internet on both family and psychological well-being. Moreover, this project examines family functioning as a mediating variable between Internet use and well-being.

The main aims of the present work are as follows:

1. To find out the impact of Internet usage on family functioning.

    1.1: To investigate the impact of online activities on family functioning.

    1.2: To investigate the impact of time spent on online activities on family functioning.

2. To investigate the impact of the Internet usage on couple functioning.

    2.1: To investigate the impact of online activities on couple functioning.

    2.2: To investigate the impact of time spent on online activities on couple functioning.

3. To investigate the impact of Internet usage on psychological well-being. (self-esteem, satisfaction with family life, and satisfaction with life).

    3.1. To investigate the impact of online activities on psychological well-being.

    3.2. To investigate the impact of the time spent on online activities on psychological well-being

4. To investigate the impact of the family functioning on psychological well-being.

5. To investigate the impact of the couple functioning on psychological well-being.

6. To investigate the impact of Internet usage on psychological well-being through family functioning.

6.1. To investigate the impact of online activities on psychological well-being through the family functioning.

6.2. To investigate the impact of time spent on online activities on psychological well-

7. To investigate the impact of Internet usage on psychological well-being through couple functioning.

7.1. To investigate the impact of online activities on psychological well-being through the couple functioning.

7.2. To investigate the impact of time spent on online activities on psychological well-being through the couple functioning.

4. Chapter Four: Methodology

4.1 General Methodology

This chapter presents the procedure of preparing the instruments under this study. The chapter first presents the general method of this project and considerations of how to select the participants. The chapter then moves to the instruments which are selected in order to measure the project's variables.

4.2 Methodological Approach

The study of this project uses a longitudinal design in order to shed more light of the impact of Internet use on family system and psychological well-being. A longitudinal design gives researcher the opportunity to examine the effect of the Internet on family functioning and well-being over the time. Therefore, it allows for better causal interpretations of associations and goes substantially beyond cross-sectional designs (Bryman,2015).

4.3 Participants

In this thesis, different studies were carried out in a sequence in order to examine the effect of using the Internet on the family system and well-being. It started with the translation study followed by a pilot and a validation study, a first wave study (cross-sectional) and the second wave study (longitudinal). All the samples for the current project used Saudi nationals as participants. The total sample size across studies is over 500 participants. Table 4.1 and 4.2 show the type of study, total numbers, numbers by gender, and the average sample age for all the studies in this project.

Table 4.1 A summary of the studies under this project.

Study	***Aims***	***Male***	***Female***	***S.D***	***N***
1	Translation Back/Statistic	*6/8*	*4/2*		*20*

Table 4.2 Continued summary of the studies under this project.

Studies/ Members	*Fathers*	*Mothers*	*Sons*	*Daughters*	*Total*
Pilot Study	32	15	8	3	58
Validation	52	68	48	13	181
Cross-Sectional	197	91	67	78	433
Longitudinal	44	15	4	11	74
Total	325	189	127	105	746

The data of the current project were collected by online surveys and paper copies in order to guarantee enough numbers of participants. This study was conducted on Saudi people but in two different countries the Kingdom of Saudi Arabia (KSA) and the United Kingdom (UK). Data collection for the studies of the current project occupied a period of about more than one year between the end of 2014 until the beginning of 2016.

4.4 Ethical Approval and Promotional Activities

The project received a support letter from the Saudi Arabian Cultural Bureau in London to be sent to Saudi clubs and societies across the United Kingdom where Saudi students meet each other and celebrate religious and national holidays, such as Saudi national day, Eid days. Also, the letter was sent to Al-Baha University in Saudi Arabia to facilitate conducting the research in KSA. For young participants under 18 the researcher wrote a letter for their carers or parents to let them participate in the survey. The procedure was ethically approved by the Nottingham Trent University Research Ethics Committee in 2014.

The project used the Bristol Online Survey (BOS) tools and paper copies to assess all variables. For the UK sample the online survey was promoted via social networking sites such as twitter, Facebook, targeting which Saudi clubs and societies in the UK.

In term of the KSA sample, the researcher went to Saudi Arabia in September 2014 and held an event at Al-Baha University in collaboration with the education and psychology divisions. The researcher collected contact details of students and staff members and provided small incentives to encourage participants to take part in the survey and also send the survey to their family members. Also, through Al-Baha university in Saudi Arabia letters were sent to the Ministry of Education, the Ministry of High Education, and other universities such as King Abdul-Aziz University in Jeddah and King Saud University in Riyadh and ask students to take part in the survey and send it to other family members. Additionally, the researcher used social networking in order to receive more participants from Saudi Arabia. (See Appendix 2 for the Participants sheet, Informed and consent form, and Debriefing Information)

Some minor delays during data collection occurred due to administrative issues outside the researcher's control, but overall the main time line could be implemented

4.5 Instruments

The aim of this section is to choose an appropriate instrument in order to measure the study's variables. Seven variables have been measured in this study which are demographic information, Internet usage, family system, four psychological well-being which are self-esteem, loneliness, satisfaction with life, and satisfaction with family life. These instruments are selected based on heavily and widely used. The next paragraphs describe each scale in term of developers, the date, their aims, number of items, psychometrics, the method in how to score them.

4.5.1 Demographic Information

The first part of the questionnaire consisted of various demographic questions, including name (option), gender, age, member of family (father, mother, son, daughter), job, education, marital status, Your order among your siblings, income, number of members of family.

4.5.2 Internet usage scale

There are two aspects of Internet Usage have been selected to be characterised the Internet usage concept. First aspect is time spent using the Internet and it has been measured by asking the participants how many hours do they use the Internet on weekdays, weekend. The second aspect is the purpose of using the Internet and it has been divided into two purposes for social use and some items have been selected which illustrate the social activates in the Internet such as playing online with other, chatting, discussion, making friends, making a comment after watching or listening to share with other people, using an email to contact with other, and voting online. However, using the Internet for non-social purposes have been determined to be measured by the other items; downloading software, surfing the net for information, listening, watching, reading, shopping, playing online (single play game). (See Appendix 1)

4.5.3 Family system:

Family system variables were measured by using the Family Adaptability and Cohesion Evaluation Scale (FACES) developed by Olson (1983). The scale revolves around two main dimensions, Family adaptability and Family cohesion. This scale has two types of versions one is evaluating cohesion and adaptability in family members and the other one is for couples.

4.5.3.1 Development of FACESII

FACES II developed first with 50 items in 1981in order to provide simple statements that measure family cohesion and adaptability to be suitable for different ages and for people with limited reading ability (Olson et al.,1992). In 1983 FACES II with 50 items were conducted on 2412 in order to evaluate the psychometric reliability and validity. The final version of FACES II consists of 30 items 16 to measure family cohesion and 14 for family adaptability (Olson et al.,1983). The reliability of 30 items were determined using two methods. The first method was Internal Consistency. The results of Cronbach's Alpha coefficients shown in Table 4.3.

Table 4.3 Reliabilities of the FACESII.

	Total Sample
Cohesion	*.87*
Flexibility	*.78*
Total scale	*.90*

In addition, the reliability of the 30 items was obtained by using the Test –Retest approach on a sample of 124 respondents and the results are shown in table 4.4 (Olson, 1992).

Table 4.4 Reliabilities of the FACESII using t-test.

	Total	*Family Cohesion*	*Family Adaptability*
Test- Retest	*.84*	*.83*	*.80*

In terms of validity for scale, it was showed high correlation with other global measure of family characteristics. For example, correlation between FACES and the Self-Report Family Inventory (SFI) was 0.79 for the Family Flexibility dimension and 0.79 as well for the Family Cohesion dimension (Kouneski,2000).

4.5.4 Loneliness Scale

Loneliness is measured using the University of California Loneliness Scale (UCLA) developed by Russell (1982). It consists of 20 items that reflect how people lonely feel (Russell, 1996). This scale was developed using with the student responses but much research on loneliness has used the UCLA measure with differently aged samples and it is a standard instrument in this area. Consequently, Russell (1996) developed the new version of the Loneliness scale (Version 3) and the sample of the new version is not restricted to students but adds people from different jobs (teachers, nurses) and different age groups making it an appropriate scale to be used with a range of populations (Russell, 1996).Moreover, further research has developed a Version 3 for teenagers aged 13-19 (Neto,1992; Lasagaard, 2007).

In terms of reliability, Cronbach's Alpha was used and it ranged from 0.89 to 0.94 and using a test – retest approach reliability was 0.73 (Lasagaard, 2007).

In terms of validity, The UCLA was strongly associated with other instruments which evaluate Loneliness such as the NYU Loneliness scale (Rubenstein et al, 1982) 0.65 and Differential Loneliness Scale (Schmidt et al.,1983) 0.72 and it is also negatively associated with the measure of social support (Russell, 1996).

4.5.5 Self -Esteem scale

Self-Esteem is measured by Rosenberg's Self-Esteem Scale (RSES) developed by Rosenberg it consists of 10 Items (Rosenberg, 1965). The RSES has been used with different groups of ages (Ciarrochi & Bilich, 2006). In addition, for this project one direct single item was taken from Robins (2001) to be added "I have highly self-esteem" (Robins, 2001).

Reliability of the RSES was obtained by Guttman scale coefficient of reproducibility of 0.92 indicating excellent internal consistency, and using test-retest over 2 weeks and it was 0.85.

The RSES correlates significantly with other known measures of self-esteem such as Coppersmith Self-Esteem Inventory and the RSES correlates in the predicted direction with measures of depression and anxiety (Ciarrochi & Bilich, 2006).

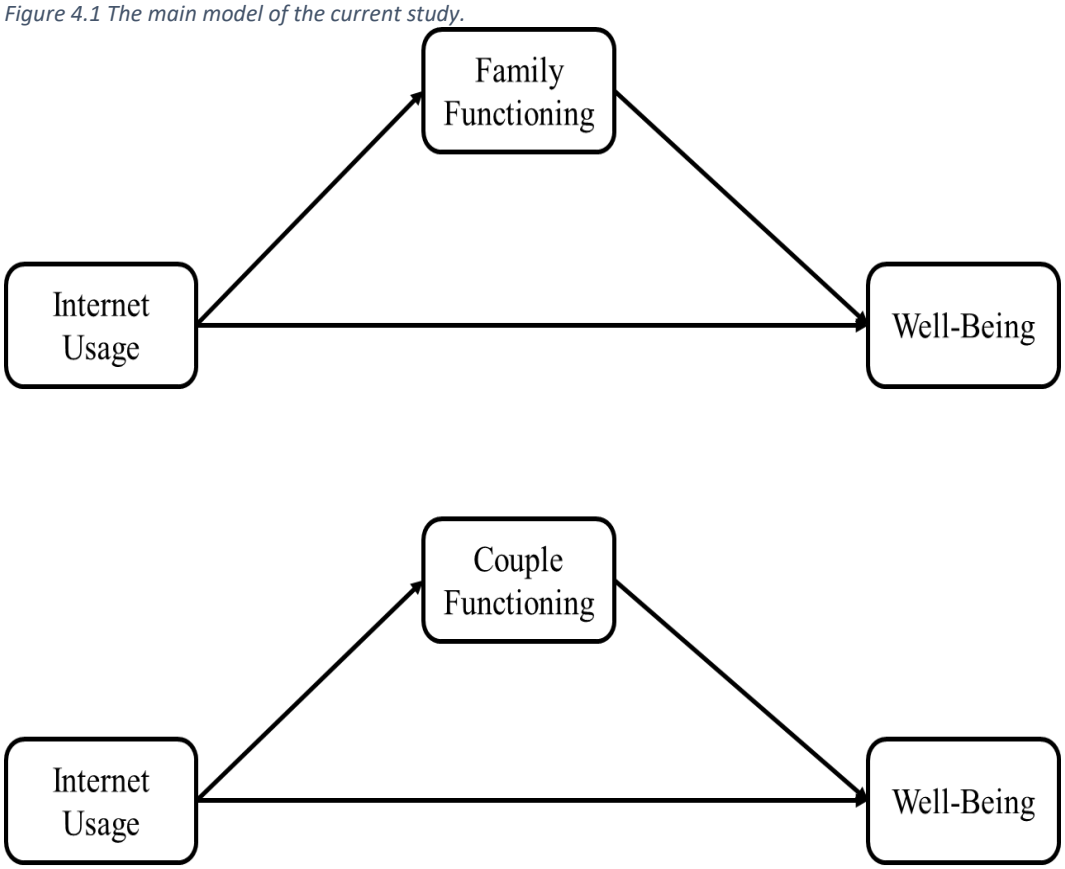
4.5.6 Satisfaction with Life and family life

Satisfaction with life is measured by using The Satisfaction with Life Scale developed by Diener (1985). The scale consists of five items to evaluate how people are satisfied with their life (Diener et al., 1985). In addition, for this project items were further modified by adding "Family" to the wording in order to assess the Satisfaction with family life as well (SWFLS).

4.6 Research Design and process

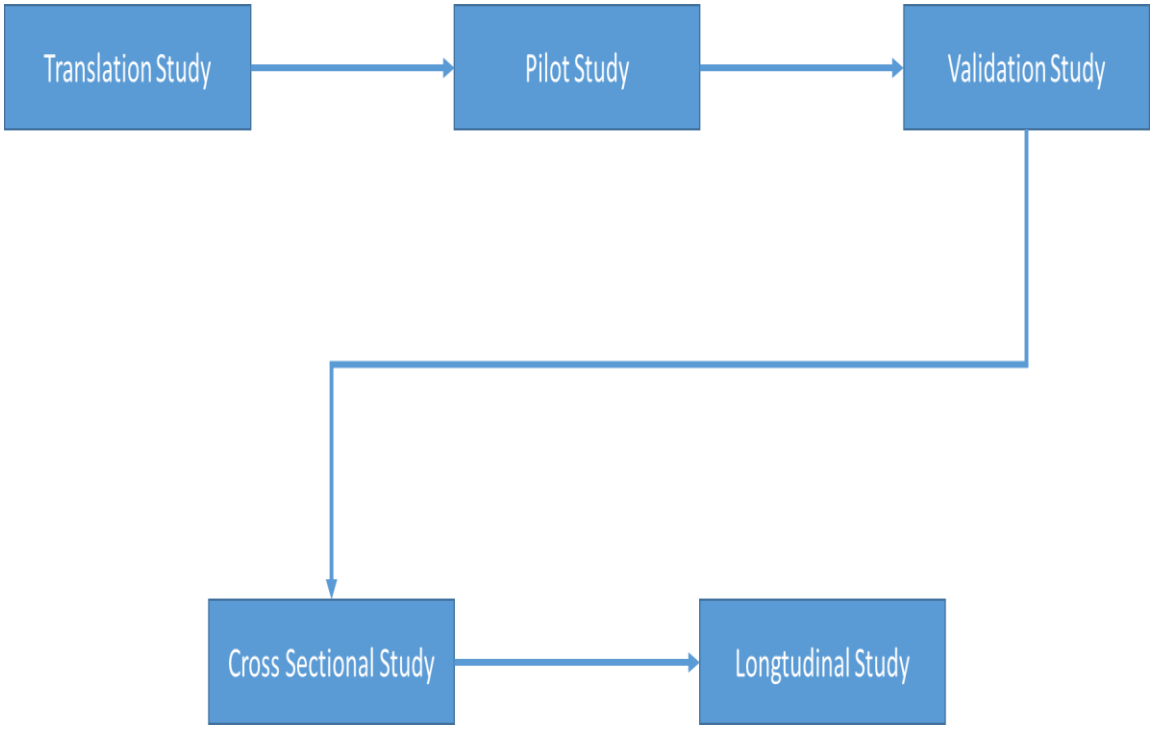
The aim of this project is to examine the impact of Internet use (with two main aspects type of online, online activities, and time spent online) on the family system and psychological well-being over time. As figure 5.1 shows aspects of Internet use are assumed to be causal variables which impact on family system and then the family functioning variables impact on individual psychological well-being. In other words, the project tests the impact of Internet usage on psychological well-being through the family system. Also, the couple functioning is mediated the relationships between Internet usage and well-being.

Figure 4.1 The main model of the current study.



A sequence of research studies was pursued in order to examine the impact of Internet use on the family and well-being variables. Figure 4.2 shows the studies that were carried out during the process. The first study focused on translation of the instruments into Arabic. The second and third studies aimed to investigate the psychometric proprieties of the scales and to examine the relationships among the projects variables. After that, the main study included more participants and advanced statistical methods were used for testing the main model and the alternative model. About six months later, the last study was carried out to shed more light on the impact of the Internet use on family system and well-being variables over time.

Figure 4.2 Process of the study.



5. Chapter Five: Translation Study

5.1 Introduction to the Translation process:

Using appropriate and validated instruments for research has the advantages of saving time rather than creating new instruments to assess the same concept across studies, of increasing reliability and validity of the scale and of increasing generalizability. Also, use of the same instruments allows researchers from different cultures to assess the same conceptualization of the studied phenomenon, and the findings can then be compared (Brislin,1970;1986; Cha,2007). It has been argued that if the developed instruments are used in a linguistically different population, the translation would be a critical step (Yu,2004). For these reasons, the process of translation becomes an important task and needed to enable instruments to be used in different cultures and languages.

One of the most common method of translation is called the back translation described by Brislin (1986). The idea of this method is to translate the original content or scale to another language based on translators who are qualified in both languages. This method produces two versions of the scale, and these two versions would be compared in order to assess whether the new version has similar meaning whilst maintaining equivalence with the original version. This method helps cross-cultural studies to use advanced instruments in different languages. However, many cross-cultural studies used one or two people to carry out this method of translation and the process might be affected by the translators in some way, the back translation cannot guarantee the equivalent meaning of the original instrument to be used in other languages and cultures. Consequently, this study provides a new method of translation in addition to back translation in order to obtain an equivalent scale. The aim of the current study is to translate the instruments of the current work, FACES II (Olson,1983), and psychological well-being scale represented by Self-Esteem Scale

(Resonberge,1965), Loneliness Scale (Russel,1996), and Satisfaction with Life scale (Diener,1985) to be suitable for Saudi society context.

5.2 The translation method:

This study used two methods of translation in order to guarantee the equivalent meaning of the statements of the scales which were used in this project. Also, these two methods of translation would help to avoid cultural bias. The first method of translation is back translation which was proposed by Brislin (1986).

To do the back translation, A 20 Arab PhD students (14 male, and 6 female) in the United Kingdom were selected in order to curry out the translation for the scales. The sample studied in different universities cross the UK; University of Nottingham, Nottingham Trent University, Leicester University, University of Bedfordshire, and University of Lincoln. In terms of their English level, all students who want to study PhD programme in the UK must have a certificate in IELTS English exam or any alternative qualifications such as pre-sessional English course that are provided by universities in the UK which indicated that the students are qualified in English language. The researcher sent a message using Email, Twitter, and Facebook to the Saudi societies in Leicester, Nottingham, Birmingham, to ask PhD students to take part in translation process. After recruiting the sample of the translation, the researcher divided the sample into two groups the first group to do the first method of translation (Back Translation) and the second group was used to do the second method of translation (Statistical Translation). The following steps describe the process of doing the method of translation.

5.2.1 Back translation:

I. The researcher selected a focus group of five Arab students who were studying for PhD in the United Kingdom able to speak, read and write the English Language.

II. The focus group was asked to read the questionnaires (English Version) and had a discussion to select appropriate Arabic statements for the original English version statements.

III. After discussion the Arabic statements for the scales were obtained and agreement on the wording was reached.

IV. The researcher selected five other Arabic students in order to translate the Arabic version of the scales into English.

V. By the end of the previous step, we had two English versions of questionnaire scales.

VI. The final step was to compare the first original English version with the second English version. In doing that, the researcher asked the two focus group to compare the two version.

The two focus groups indicated that the second English version of the scales had an equivalent meaning of the original English version. As mentioned in the beginning of the chapter this project then used an additional translation transition method to support the back translation.

5.2.2 Statistical Method of Translation:

The second method of translation relies on statistical methods to support the back-translation method. The idea of this method was derived from the technique of how to develop an achievement test by checking whether the aim is measured by the question from a referee's perspectives (Abu-Lobdah,2008). Thus this method of the translation aims to compare the

meaning of the original English statements with the translated items obtained through the back translation. The process of this method is explained as follows:

A group of 10 Arab referees were selected to carry out the second method. All referees were psychologists (8 males, 2 females). The researcher provided a form to present their opinions about how the Arabic statements translated compared with the English statements in the original version.

Table 5.1 Referees form of the statistical Method

FACES Scale 2 مقياس العلاقه بين الزوجين							
	English version	Arabic Version	25%	50%	75%	100%	Comments
1	We are supportive of each other during difficult times.	نحن ندعم بعضنا في الاوقات والمواقف الصعبه.					

I. Table 5.1 consists of seven columns. The first column shows the English statements in the original version and the second one shows the Arabic statements after translation in the first method (Back Translation) and columns three to six showed to what extent Arabic statements matched with the English statements by using percentages; the final column was for comments.

II. The referees were asked to give their opinion about each statement by choosing the appropriate percentage which expressed extent to which the Arabic statements have similar meaning with English statements.

5.2.2.1 Administration of the Statistical Method of translation:

This section explains the steps of using the Statistical method of translation as follow:

I. Obtain the means of each statement.

$$S.M = \frac{\sum RP}{\sum R}$$

II. S.M= Statistical Method, R=referees, P=percentage.

5.2.2.2 Results:

The results of the statistical method of translation showed that the percentages of all scale statements had reached or exceeded 75%. The percentage for the items of the family cohesion and adaptability scales was in the range of 87.5% to 95%. Also, the items of the couple cohesion scale have the same range. In terms of the items for the couple adaptability the lowest percentage was 90%. The items of the psychological well-being scales showed also good results and all of them were at least acceptable. Item number nine in the self-esteem scale showed the lowest percentage, although it still met the cut-off score of 75%. The results are summarized in table 5.2.

Table 5.2 Results of the statistical translation method

	F.C %	***F.A***	***%***	***C.C***	***%***	***C.A***	***%***	***SES***	***%***	***LONE***	***%***	***SWL***	***%***	***SWLF***	***%***
1	90	**2**	92.5	**1**	95	**2**	95	**1**	85	**1**	87.5	**1**	87.5	**1**	85
3	95	**4**	92.5	**3**	85	**4**	95	**2**	87.5	**2**	82.5	**2**	95	**2**	92.5
5	92.5	**6**	90	**5**	92.5	**6**	95	**3**	90	**3**	77.5	**3**	95	**3**	92.5
7	92.5	**8**	90	**7**	87.5	**8**	95	**4**	95	**4**	87.5	**4**	90	**4**	87.5
9	92.5	**10**	92.5	**9**	92.5	**10**	95	**5**	92.5	**5**	82.5	**5**	92.5	**5**	87.5
11	92.5	**12**	95	**11**	92.5	**12**	95	**6**	87.5	**6**	82.5				
13	95	**14**	95	**13**	92.5	**14**	92.5	**7**	95	**7**	85				
15	95	**16**	90	**15**	95	**16**	92.5	**8**	87.5	**8**	82.5				
17	92.5	**18**	90	**17**	90	**18**	92.5	**9**	75	**9**	85				

19	95	**20**	90	**19**	95	**20**	95	**10**	95	**10**	87.5
21	87.5	**22**	90	**21**	92.5	**22**	95	**11**	95	**11**	87.5
23	95	**24**	92.5	**23**	92.5	**24**	92.5	**12**		**12**	87.5
25	87.5	**26**	87.5	**25**	95	**26**	90	**13**		**13**	77.5
27	90	**28**	87.5	**27**	97.5	**28**	95	**14**		**14**	87.5
29	90			**29**	92.5			**15**		**15**	85
30	92.5			**30**	90			**16**		**16**	87.5
										17	87.5
										18	82.5
										19	85
										20	85

Note: FC=Family Cohesion, FA=Family Adaptability, CF=Couple Cohesion, CA=Couple Adaptability, SES=Self-Esteem, Lone=Loneliness, SWL=Satisfaction with life, SWLF=Satisfaction with family life.

5.3 Summary:

After selecting the instruments that were used in this project the next step was to prepare the scales to be conducted on the study sample. This section aimed to translate the scales under study from the original versions (English statements) into Arabic statements to be appropriate for the Saudi society context. Also, this process aimed to avoid some issues of translation such as cultural bias, and maintaining equivalent meaning of the scales' statements. Two methods of translation were carried out in order to obtain Arabic versions that can assess the same concepts of the FACES scales, the family system, and psychological well-being scales. The first method was back translation, and the second method was statistical translation. The output of the translation process indicated that the focus groups were in agreement that the Arabic version of the scales measured the same concepts as the original scales. Also, the results were supported by the second method of translation which showed that all the Arabic statements well matched the English statements in terms of meaning and the extent to which the new versions of the scales were appropriate to their cultural context.

6. Chapter six: Pilot Study

6.1 Introduction:

This chapter presents the results of the pilot study. It starts by explaining the importance of doing the pilot study. Then, the chapter presents the results including, psychometric proprieties of the measures, and examines the relationships among the variables in the study. The chapter ends with a summary and introduces for the validation study as the next step in this project.

A pilot study commonly called “feasibility study” is highly recommended as a fundamental step in research for many reasons. For example, as Van (2001) points out, a pilot study can provide the researchers an early warning message about where the main project could fail, the model of the project is inappropriate, or find out the psychometric priorities of the instruments under study. In addition, some points can be determined by doing a pilot study. For instance, the time to carry out the study, and administer the instruments to pilot sample in exactly the same way as it will be in the project. Moreover, there is concern for feedback from participants (Van & Hundley, 2001). In this study seven instruments were used which were (family system and couple system (Olson, 1983), self-esteem (Rosenberg, 1965), loneliness (Ressell,1982) , satisfaction with life, satisfaction with family life (Diener et al,1985), and Internet usage was developed by researcher). This study aimed to investigate the following objectives.

6.2 Study Aim:

The main purposes of pilot study are to test the reliabilities of the scales, and the correlations among them, and not testing for multivariate models as in regression or Structural Equation Modelling; multivariate analyses are confined to the study presented in chapter Eight, Nine,

and Ten where a larger sample took place. the sample used here was thought to be too small, and lacking statistical power.

6.3 Administration the survey:

The researcher received a permission letter from Saudi Royal Embassy in London to carry out the survey on the sample. After that, five Saudi clubs were selected where located in different cities in the United Kingdom (Leicester, Nottingham, London, Cardiff, Exeter). The clubs administer many activities and events for students who are studying at Universities in the United Kingdom. For example, an Arabic school for children, and celebrating Saudi National day and religious days.

6.4 Sample Description:

The survey of 139 questions has been conducted on 58 participants (39 males, 18 Females, 2 Under 18s) and the mean of their age is 31.6. The total number of the pilot study sample was 58, 67% of the sample was male while just below a third was female. In term of the participants' age only two participants represented the age under 18s. In addition, the results showed that more than half percentage of the male sample was married while one quarter of the females were married. The results are presented in table 6.1, and 6.2.

Table 6.1 sample description Pilot study.

Gender	***Number***	***Percentage***
Male	*39*	*67%*
Female	*18*	*29%*
Under 18 M/F	*2*	*.03%*
Total	*58*	

Table 6.2 sample description.

Status	*Gender*	*Number*	*percentage*
Married	Male	32	55%
	Female	15	25%
Single	Male	8	13%
	Female	3	0.05%
Total		58	

6.5 Result:

This section presents the results of the first objective of the current pilot study which is to find the internal consistency reliability of each scale under this study. In addition, the section presents item-total for each item.

6.5.1 Internet Usage Scale:

As has mentioned in the beginning of this report that the Internet usage covered two aspects which are time spent on the Internet during the weekdays, weekends and how much time people spend on Internet in different places such as at work, at home, regardless the material is connected with. The second aspect is the purposes of using the internet. The first was using the Internet for social purposes and seven items were used to measure this; play *online with other people, chatting with friends, discussion, making new friends, making a comments after watching or listening, voting online and using an email to contact with other people*. The second is to use the Internet for non-social activities, and seven items were used to assess it; downloading *software, surfing for the information, listening and watching, reading, shopping and play online alone.*

6.5.1.1 Reliability

In order to find the reliability of this scale, the Cronbach's coefficient alpha was employed to obtain the reliability. The results showed that the Internet scale has a reasonably good reliability, it was found .75 for the social purposes and .82 for non-social purposes. The results are provided in table 6.3.

Table 6.3 Reliability of the Internet scale.

Internet usage	***Social purposes (95% CI)***	***Non-Social purposes (95% CI)***
Cronbach's Alpha	*.75 (.64,.84)*	*.82(.74,.82)*

6.5.1.2 The item-total correlations internal of the Internet scale:

After finding the reliability for the Internet scales, the internal consistency of the items which represent the correlation between the items and the total of the scales. The results showed that the correlations between items and the total were positive and ranging from (*r=.41 to.81*) for the social scales and all of items are significant *p<.005*. Also, the items of the non-social purposes showed significant correlations, *p<.005* with the total of the scales and they ranging from (*0.56 to 0.81*). The individual results presented in Table 6.4.

Table 6.4 Total-Items correlations for Internet use scale.

Item	***Social Use (95% CI)***	***Non-Social Use (95% CI)***
1	*0.57** (.36,.72)*	*0.65** (.47,.78)*
2	*0.62** (.43,.76)*	*0.56**(.35,.71)*
3	*0.65**(.47,.78)*	*0.78**(.65,.86)*
4	*0.79**(.67,87)*	*0.81**(.70,.88)*
5	*0.81**(.70,.88)*	*0.61**(.42,.75)*
6	*0.63**(.44,,76)*	*0.68**(.51,.80)*
7	*0.41**(.17,.60)*	*0.78**(.56,.86)*

6.5.1.3 Summary:

The previous section was to develop the proprieties of the Internet usage scale which aimed to measure the two aspects of using the internet. Seven items assess the social purposes of using the Internet and other to assess the non-social purposes. The reliability of the Internet usage was calculated by using the Cronbach's Alpha, and the results indicated that the scale has a good reliability for both scales social and non-social purposes. Also, the correlations between the items and the total of the scales were found and the results showed that the items were positively correlated and significant with the total which meant that all the items contribute to the overall scale score.

6.5.2 Family and couple Adaptability and Cohesion Evaluation Scale (FACESII)

6.5.2.1 Reliability

The reliability of the family system scales cohesion and adaptability were found by using the Coronbch's Alpha. The results showed that the reliability of family cohesion scale was .90 and .87 for the family adaptability. The detailed results are provided in table 6.5.

Table 6.5 the reliability of the family cohesion and adaptability scales.

FACES	*Alpha (Olson)*	*Alpha current study*
Family Cohesion	*.87*	*.90 (.86,.93)*
Family Adaptability	*.78*	*.87(.82,.91)*
Total	*.90*	*.91(.87,.94)*

6.5.2.2 The item-total correlations internal of the family and couple scales:

After finding the reliability of the family system and couple scale, the correlations between the items and the total of the scale were generalized. The results showed that all the items

correlated positively with the totals of the scales. For the family cohesion the correlations were ranging from (*r=.34 to .84*) and they were significant when *p<.005*. In terms of the family adaptability scale, most of the items were correlated significantly with the total and they ranging between (*r=.821 to .382, p<.05*) except item number 24 *r=.162, p>.05.* In addition, the correlations between the items of the couple cohesion scale were significant (*r= .350 to .734, <.005*). Finally, the items of couple adaptability scale were also significantly correlated with the total with *r* ranging from *(.307 to .854, p<.05)* except item number 24 the *r=.288, p>.05*. The results are provided in Table 6.6.

Table 6.6 total-items correlations for the family and couple scales (FACES II)

Items	***Family cohesion***	***Item***	***Family Adaptability***	***Item***	***Couple Cohesion***	***Item***	***Couple Adaptability***
1	0.58 **(.38,.73)	**2**	0.71**(.55,.82)	**1**	0.73**(.58,.83)	**2**	0.64**(.46,.77)
3	0.59**(.39,.74)	**4**	0.68**(.51,.80)	**3**	0.53**(.31,.69)	**4**	0.81**(.70,.88)
5	0.84**(.74,.90)	**6**	0.38**(.13,.58)	**5**	0.68**(.51,.80)	**6**	0.75**(.61,.84)
7	0.71**(.55,.82)	**8**	0.82**(.71,.89)	**7**	0.47**(.24,.65)	**8**	0.70**(.54,.81)
9	0.35**(.10,.56)	**10**	0.48**(.25,.66)	**9**	0.49**(.29,.66)	**10**	0.30*(.04,.52)
11	0.59**(.39,.74)	**12**	0.54**(.33,.70)	**11**	0.39**(.9,.59)	**12**	0.63**(.44,.76)
13	0.61**(.42,.75)	**14**	0.81**(.70,.88)	**13**	0.69**(.52,.80)	**14**	0.85**(.76,.91)
15	0.71**(.55,.82)	**16**	0.48**(.25,.66)	**15**	0.56**(.35,.71)	**16**	0.56**(.35,.71)
17	0.84**(.74,.90)	**18**	0.78**(.65,.86)	**17**	0.69**(.52,.80)	**18**	0.83**(.73,.90)
19	0.75**(.61,.84)	**20**	0.72**(.57,.82)	**19**	0.67**(.50,.79)	**20**	0.71**(.55,.82)
21	0.72**(.57,.82)	**22**	0.68**(.51,.80)	**21**	0.45**(.22,.63)	**22**	0.70**(.54,.81)
23	0.71**(.55,.82)	**24**	0.16 (.10,.14)	**23**	0.65**(.47,.78)	**24**	0.29 (.03,.51)
25	0.73**(.58,.83)	**26**	0.71**(.55,.82)	**25**	0.57**(.36,.72)	**26**	0.71**(.55,.82)
27	0.69**(.52,.80)	**28**	0.72**(.57,.82)	**27**	0.49**(.29,.66)	**28**	0.44**(.20,.63)
29	0.43**(.19,.62)			**29**	0.53**(.31,.69)		
30	0.62**(.43,.76)			**30**	0.67**(.62,.85)		

6.5.2.3 Summary:

The aim of the previous process is to evaluate the reliability and items-total correlations of the family, couple cohesion and adaptability. In order to find the internal consistency reliability, the Cronbach's Alpha was used and the results showed that the family and couple scales have higher reliability compared with the original scales see Table 6.5. In term of the internal consistency, the results showed that all the items were positively correlated and significant. However, the results indicated that the items number 24 in the family and couple adaptability were not significant.

6.5.3 Psychological well-being Scales

6.5.3.1 Reliabilities:

Four scales were selected to measure the psychological well-being which are; loneliness, self-esteem, satisfaction with family life, and life satisfaction. The Cronbach's Alpha was conducted in order to find the reliability of the psychological well-being scales under this study. The results showed that the reliability of the loneliness scale was high, it was .94, also, for the self-esteem was .838. For the family life satisfaction and life satisfaction scales were .775, and .764 respectively. The results are presented in table 6.7.

Table 6.7 reliabilities for the psychological well-being scales.

Scales	*Current study (95% CI)*
Loneliness	.94 (.92,.96)
Self-esteem	.84 (.80,.91)
Satisfaction with family life	.78 (.68,.86)
Satisfaction with life	.76 (.65,.86)

6.5.3.2 The item-total correlations internal of Psychological Well-being Scales:

This process is to find out the correlations between the items of each scales of psychological well-being with the total of the scales. the results of the correlations between the loneliness scale and their total showed all the items correlated positively and most of them were significant the correlations were ranging between *(r=.43 and .87, all p<.05)* except item 20 *r=.14, p>.05*. In term of the self-esteem scale, the results showed that all the items were positively and significant correlated with the total of the scale the correlations were ranging from *(r=.47 to .82, p<.005)*. The last two scales of the psychological well-being are satisfaction with family life and with life, the results of the correlations between the items and their total were positively and significant. The correlation values were ranging from *(r=.587 to .890, p<.005)*. The full results are provided in Table 6.8.

Table 6.8 Total-items correlation for the psychological well-being scales.

Items	***Loneliness (ci 59%)***	***Items***	***Self Esteem(ci 59%)***	***Items***	***Satisfaction with family life(ci 59%)***	***Items***	***Satisfaction with life(ci 59%)***
1	*0.53**(.31,.69)*	***1***	*0.60**(.40,.74)*	***1***	*0.80**(.68,.88)*	***1***	*0.79**(.67,.87)*
2	*0.82**(.71,.89)*	***2***	*0.60**(.40,.74)*	***2***	*0.89**(.82,.93)*	***2***	*0.84**(.74,.90)*
3	*0.63**(.44,.67)*	***3***	*0.82**(.71,.89)*	***3***	*0.82**(.71,.89)*	***3***	*0.74**(.59,.84)*
4	*0.86**(.77,.91)*	***4***	*0.47*(.24,.65)*	***4***	*0.71**(.55,.82)*	***4***	*0.77**(.64,.86)*
5	*0.63**(.44,.67)*	***5***	*0.82**(.71,.89)*	***5***	*0.59**(.39,.74)*	***5***	*0.59**(.39,.74)*
6	*0.51**(.29,.68)*	***6***	*0.62**(.43,.76)*				
7	*0.90**(.84,.94)*	***7***	*0.58**(.38,.73)*				
8	*0.53**(.31,.69)*	***8***	*0.54**(.33,.70)*				
9	*0.63**(.44,.67)*	***9***	*0.77**(.64,.86)*				
10	*0.79**(.67,.87)*	***10***	*0.66**(.48,.78)*				
11	*0.75**(.61,.84)*	***11***	*0.49**(.26,.66)*				
12	*0.82**(.71,.89)*						
13	*0.72**(.75,.82)*						
14	*0.87**(.79,.92)*						

15	*0.65**(.47,.78)*
16	*0.68**(.51,.80)*
17	*0.43*(.19,.62)*
18	*0.86**(.77,.91)*
19	*0.66**(.84,.78)*
20	*0.14 (.12,.38)*

6.5.3.3 Summary:

The aim of the previous process is to examine the reliability of the psychological well-being scales and to find out the internal consistency among the items of the scales. The Cronbach's Alpha was used in order to find the reliabilities for the scales. the results indicated that all the well-being scales have good reliabilities. In addition, the results showed that the items of the scales were positively correlated and significant. However, the result of the item 20 in loneliness scale showed the correlation was not significant. Overall, the results of the reliabilities' for all the scales showed an acceptable output and the scales can be used for the next step which involve evaluating the correlations among the study's variables.

6.5.4 The correlations among the study's variables:

This section presents the results of the second objective of the current study which investigate the relationships among the variables. It will be an essential process in order to give the researcher a feedback before examining the main model with a large sample and to avoid errors before doing the main model. Seven variables were included in order to examine the correlations among them; the Internet scale, family and couple adaptability and cohesion, loneliness, self-esteem, satisfaction with family life, and satisfaction with life.

6.5.4.1 Examining the model of the current study:

In order to examine the model of this study the correlation was used. The results showed that the showed some significant relationships between the Internet usage and family system, especially the using of Internet for non-social purposes. The results indicated that the using of Internet was negatively related to the family cohesion *r=-.27, p<.05*, also with couple cohesion *r=-.25, p<.05*. Similarly, the results found that the using the Internet for no-social purposes was negatively correlated with self-esteem *r=-31, p<.05*. However, the non-social activity on Internet was positively correlated with the loneliness *r=.29, p<.05*. In term of the relationships between the social activities, the results showed there was no significant with family system nor with psychological well-being.

The second part of the current model is to test the relationships between the family/couple system and psychological well-being. The results showed that all the variables are significantly correlated. The family cohesion correlated with family adaptability, couple cohesion, couple adaptability, self-esteem, satisfaction with family life and satisfaction with life positively *(r=.85,.76,.70,.60, .63,and .53, all p<.05)* respectively, while negatively correlated with loneliness *(r=-.67, p<.05).* Similarly, the family adaptability was positively correlated with couple cohesion and adaptability, self-esteem, satisfaction with family life, and satisfaction with life *(r=.68,.67,.66,.52, and .60, all p<.05)* and negatively correlated with the loneliness *(r=-57, p<.05).* The results also indicated that the loneliness was negatively related to the self-esteem, satisfaction with family life, and satisfaction with life *(r=-.70, -.72, and -.60, all p<.05)* respectively. the results also showed that the self-esteem was positively correlated with satisfaction with family life and satisfaction with life *(with both r=.50, all p<.05)*. Finally, the results indicated that the satisfaction with family life was correlated positively with life satisfaction *(r=.76, p<.05)*. The full results are summarised in Table 6.9.

Table 6.9 The correlations among the variables.

	Internet social (95% CI)	**Internet Non-social** (95% CI)	**Family Cohesion** (95% CI)	**Family Adaptability** (95% CI)	**Couple Cohesion** (95% CI)	**Couple Adaptability** (95% CI)	**Loneliness** (95% CI)	**Self Esteem** (95% CI)	**Sat with Life** (95% CI)
Internet social	*1*								
Internet social	*.62** (.43,.76)*	*1*							
Family Cohesion	*-.07 (-.32,.19)*	*-.27* (-.49,.01)*	*1*						
Family Adaptability	*.12 (.14,.37)*	*-.14 (-.38,.12)*	*.85** (.76,.91)*	*1*					
Couple Cohesion	*-.18 (-.42,.08)*	*-.25* (-.48,.01)*	*.76** (.62,.85)*	*.68** (.51,.80)*	*1*				
Couple Adaptability	*.14 (-.12,.38)*	*-.20 (-.44,.06)*	*.70** (.54,.81)*	*.67** (.50,.79)*	*.86** (.77,.91)*	*1*			
Loneliness	*.06 (-.2,.31)*	*.29* (.03,.51)*	*-.67** (-.79,-.50)*	*-.57** (-.72,-.36)*	*-.62** (-.76,-.43)*	*-.64** (-.77,-.46)*	*1*		
Self Esteem	*-.12 (-.37,.14)*	*-.31* (-.53,-.06)*	*.60** (.40,.74)*	*.66** (.48,.78)*	*.64** (.46,.77)*	*.64** (.46,.77)*	*-.70** (-.81,-54)*	*1*	
Sat with Life	*-.10 (-.35,.16)*	*-.14 (-.38,.12)*	*.63** (.44,.76)*	*.52** (.30,.69)*	*.57** (.36,.72)*	*.50** (.28,.67)*	*-.72** (-.82,-.57)*	*.50** (.28,67)*	*1*
Sat With Family Life	*-.10 (-.35,.16)*	*-.24 (-.47,.02)*	*.53** (.31,.69)*	*.60** (.40,.74)*	*.58** (.38,.73)*	*.58** (.38,.73)*	*-.60** (-.74,-.40)*	*.50** (.28,67)*	*.76** (.62,.85)*

6.6 Conclusion:

The aim of the pilot study is to prepare the instruments under this study to be appropriate for main sample of this study in term of the psychometric priorities, the convenient time for doing the survey. Furthermore, this study aimed to evaluate the correlations among the variables Internet scale, family /couple cohesion and adaptability, and psychological well-being scales.

According to the results, the scales of this study showed acceptable reliabilities, the Cronbach's Alpha showed that all the scales have adequate or better internal consistency reliability. Also, these results are supported by the output that generated from item-total correlations. It showed that all the items were positively correlated with the total of the

scales in which meant that the items measured the same concepts of the scales. However, three items from three scales were not significant, item number 24 in the family adaptability, item 24 in the couple adaptability, and item number 20 in the loneliness scale. The possible reason for that is the sample size.

In terms of the evolution of the correlations among the main variables, the results indicated that the Internet usage (especially for non-social activities) can affect the family cohesion and couple cohesion. Furthermore, the results showed the self-esteem can be negatively affected by the Internet usage. However, Internet usage can make users feel lonelier. In term of the relationships among family system and couple with the psychological well-being, the results confirmed that the family cohesion and adaptability were highly correlated to each other. Also, it was found give an indication that the high level of self-esteem decrease significantly the level of loneliness and the high and vice versa. The results could be used as indication for the validity of the scales and it also supported the process of the translation for measures used this study.

Based on the results of the pilot study some changes have been made before doing the main study. First, the scale of the Internet usage especially the time spent online has been extended to capture the right time that the users they spent in three deferent times on the week (weekends, weekdays at home, and weekdays at work) in different online activities. Also, one question was suggested to assess the age of marriage. It was also decided to extent the sample in order to validate the Family Adaptability and Cohesion Evaluation Scale (FACES II).

To sum up, the results of pilot study indicated that the instruments are appropriate for samples from Saudi society. However, Internet usage scale should include other items in order to capture the concept of the two aspects purposes and time of using the internet. Also,

findings of this pilot study suggested that the Internet may be associated with family and couple functioning.

The next study will investigate the psychometric proprieties of the Arabic version of the (FACES II). This is because this scale would be the first time to be conducted in Saudi society, so it needs more investigation. Also, because of the low number of participants for the pilot sample, it more participants should be included to validate the FACES II scale.

7. Chapter Seven: (Study Three) Validation Study of the FACES II.

7.1 Introduction:

According to the results of the pilot study in the previous chapter that the (FACES II) needs further investigation with respect to its psychometric properties.

7.2 Study Aims:

This study aims to investigate the properties of the Family Adaptability Cohesion and Evaluation Scale (FACESII) after translating the items from the English to Arabic. The sample in this study was extended and therefore increased the statistical power to detect multivariate associations.

7.3 Methods:

7.3.1 Measures:

Demographic characteristics and demographic information such as age, family members, employment, education level, status and family income, were collected through structured questionnaires administrated by the researcher.

Three scales were used: the 30 items of the FACES II scale, along with the Loneliness scale, which is the University of California Loneliness Scale (UCLA) Version 3 designed by Russell (1982) to measure how lonely participants feel, and the Self-Esteem Scale, which was developed by Rosenberg (1965), were administered. The Loneliness Scale consists of 20 items, and responses were rated from “1=Never” to “4=Always”. The Self-Esteem scale, it consists of 10 Items to measure self-esteem and rates these from 1“Strongly Disagree” to 4” Strongly Agree”. (Ciarrochi & Bilich, 2006).

7.3.2 Participants:

In order to validate the Arabic version of the FACES II scale within a Saudi context, A total sample of 181 participants recruited from Saudi society to take part in the survey for the current study, with 100 males (55%), and 81 females (44%), ranging in age from 13 to 58, with an average 30.58 years *(SD= 9.1)*. In terms of family members, it is about 37% is mothers and the lowest percentage is daughters with about 7%. Furthermore, regarding the educated participants, a high percentage of the sample has a post graduate degree, and the smallest percentage is 8% for the participants who have a Diploma degree. The percentage married in the sample was just above 69%, and thus under half were single. The socio-demographic data for the participants are presented in Table (7.1).

7.4 Results:

7.4.1 Reliabilities:

Internal consistency reliabilities for the two subscales of the Arabic version of FACES II for family and couple were good. Reliability was found by using Cronbach's Alpha, and it is .84 for the cohesion scale and .84 for the adaptability scale, and for all scale was .91. Also, for couple cohesion and adaptability the reliability was .90 and .93 respectively, and for all scale of FACES II for couple was .96. The result of reliability analyses are presented in Table (7.2).

Moreover, item-total correlations between each item with the total of each scale were from *r=.32 to .76 ,all p<.005* for the family Cohesion Scale, and for the family Adaptability Scale the correlations are between r=.236 to .740, *all* p<.05. In term of couple version of FACES II the correlations between each item and total for couple cohesion were from *r=.43 to .85, all p<.05*, and for couple adaptability the correlations were from *r=.40 to .86, all p<.05*. The full results of the total items correlations are presented in Tables (7.3, and 7.4).

7.4.2 Validity:

In terms of the validity of the Arabic version of FACES II for family and couple, different types of validation were used to investigate whether FACES II is valid for use in a Saudi context and are as follows:

7.4.2.1 Concurrent validity:

FACES II was administered, along with the Loneliness scale -University of California Loneliness Scale (UCLA) Version 3, developed by Russell (1982) - and the Scale of Self-Esteem, developed by Rosenberg (1965). The assumption is that cohesion and adaptability are negatively correlated with loneliness and positively correlated with self-esteem. To assess these hypotheses, the Pearson correlation coefficient was used to find out whether there was a correlation.

There was a strong, negative correlation between family cohesion, adaptability and loneliness, $r=-.60$, *and* $-.50$, $p<.005$ for cohesion and adaptability respectively. Also, negative correlations between couple cohesion and adaptability version of the FACES II, $r=-.32$, $-.32$, $p<.05$ for couple cohesion and adaptability respectively. The results are presented in Table (7.5).

However, the family cohesion and adaptability are positively correlated with self-esteem, $r=.60$, *and* $.50$, $p<.05$ respectively. Also, for couple cohesion and adaptability were found a positive correlated with self-esteem $r=.44$, *and* $.42$, $p<.05$, respectively. The results of correlations are presented in Table (7.5).

7.4.2.2 Construct Validity:

In order to investigate the structure of the dimensions of family and couple FACES II scales, the items of the Loneliness and self-esteem scales, along with the items of FACES II for family and couple scale, were subjected to Principal Components Analysis (PCA), to find out whether the FACES II items would load in different factors from the loneliness and self-esteem items. SPSS version 21 was used, prior to performing PCA, and the suitability of data for factor analysis was assessed.

It is understood that the sample size is an important factor to carry out the factor analysis, and some recommendations were proposed in terms of a good sample size. For example, Nunnally (1978) recommended to have ten responses for one items, also Steven (1996) suggested fifteen responses per item. Furthermore, it was suggested that a number of 300 sample size tend to be good for carrying factor analysis regardless of the cases to variables (Tabachnick el at, 2012). Comrey and Lee (1992) class 100 cases as sample size is poor, 300 is a good sample size an excellent when sample size is 1000 or more. In addition, another rules to accept the result of factor analysis were proposed that based on the number of items that loaded in one factor and the value of the loading. For instance, Guadagnoli and Velicer (1988) found that if there are four or more variables loaded equal or greater than .6 then it is reliable regardless of the sample size, or ten variables loaded equal or greater than .40 and sample size is equal or greater than 150.

16 items of family cohesion were entered along with loneliness and self-esteem scale. The KOM was .86, which was higher than the recommended value of .6 (Kaiser 1970,1974).

Principal Components Analysis revealed the presence of four components with eigenvalues exceeding 1, and explained 26.5%, 6.2%, 5.5%, and 4.9% of the variance respectively. The items of the Cohesion Scale loaded on two components (3 and 4), with a value more than

.30. However, the majority of items Loneliness Scale loaded on components number 1 (with a value of more than .30). However, item 20 from loneliness scale loaded with items of family cohesion on component number 4 with a value of .27. The results of the loading of the scales items are presented in Table 4. In term of self-esteem items, 11 items for self-esteem loaded on component number 2 with value ranging from .28 to .66.

Secondly, the 14 items of family adaptability Scale of family version have the same procedure was used by entering the adaptability items along with the items of the Loneliness and self-esteem Scales to Principal Components Analysis (PCA), to investigate whether the Adaptability Scale would load in different components than the Loneliness and self-esteem Scales. Prior to performing PCA, the suitability of data for factor analysis was assessed. Examination of the correlation matrix revealed the presence of many coefficients of .30 and above. The Kaiser-Meyer- Olkin (KOM) value was .85, which was higher than recommended value of .60 (Kaiser 1970,1974).

Principal Components Analysis revealed the presence of five components with eigenvalues exceeding 1, and explained 26.2%, 7.6%, 6.1%, 4.4%, and 3.8%, of the variance respectively. Fourteen items for the adaptability scale loaded on two components (2, and 3), and all of them having a value of more than .30, except item 24 did not load on any component. The items for Loneliness Scale loaded on two different components (1, and 4) with a value of more than .30. Items for self-esteem loaded on two components (3, and 5) with a value of more than .30.

Thirdly, 16 items of couple cohesion were entered along with loneliness and Self-esteem scales to Principal Components Analysis (PCA), to investigate whether the couple cohesion Scale would load in different components than the Loneliness and self-esteem Scales. Prior to performing PCA, the suitability of data for factor analysis was assessed. Examination of

the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Meyer- Olkin (KOM) value was .82, which was higher than recommended value of .6 (Kaiser 1970,1974).

Principal Components Analysis revealed the presence of three components with eigenvalues exceeding 1, and explained 27.4%, 11.7%, and 6.1% of the variance respectively. The items for the couple cohesion Scale loaded on one component 2, and all of them having a value of more than .30. The 20 items of the Loneliness scale loaded on one different component number 1, with a value of more than .30. In contrast, Self-esteem items loaded on one component 3 with a value of more than .30.

Finally, 14 items of couple adaptability scale were entered along with loneliness and self-esteem scales to Principal Components Analysis (PCA), to investigate whether the couple adaptability Scale would load in different components than the Loneliness and self-esteem Scales. Prior to performing PCA, the suitability of data for factor analysis was assessed. Examination of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Meyer- Olkin (KOM) value was .83, which was higher than recommended value of .6 (Kaiser 1970;1974).

Principal Components Analysis revealed the presence of four components with eigenvalues exceeding 1, and explained 28.7%, 12.8%, 6.2%, and 4.8 of the variance respectively. The items of the couple adaptability Scale loaded on component 2, and all of them having a value of more than .30. The 20 items for the Loneliness scale loaded on two different components (1, and 3) with a value of more than .30. Self-esteem items loaded on component number 4 with a value of more than .30.

7. 1 Sample Description.

Sample	*Range*	*M*	*SD*
Age	*13-58*	*30.53*	*9.1*

7.2 Demographic information

Gender	**Male**	*100*
	Female	*81*
Family Position	**Father**	*52*
	Mother	*68*
	Son	*48*
	Daughter	*13*
Status	**Married**	*125*
	Single	*56*
Education	**High school**	*28*
	Diploma	*16*
	B.SC	*47*
	Post graduate	*60*
Income (Monthly)	**Less than £1000**	***33***
	From £1000 up to £2000	***17***
	From £2000 up to £3000	***10***
	From £3000 up £5000	***33***
	More than £5000	***78***

7. 3 Reliabilities of FACES II family, and Couple versions

FACES II	*Alpha (95% CI)*
Cohesion	*.84 (.80,.87)*
Adaptability	*.84 (.80,.87)*
Total	*.91(.89,.93)*
Couple Cohesion	*.90 (.88,.92)*
Couple Adaptability	*.93 (.91,.94)*
Total	*.96 (.95,.96)*

7. 4 Table Item-total correlations for the family cohesion and adaptability scale. (FACESII)

Cohesion Items	*r (95% CI)*	*Adaptability Items*	*r (95% CI)*
1	*.61**(.51,.69)*	***2***	*.74**(.67,.80)*
3	*.43**(.30,.54)*	***4***	*.62**(.52,.70)*
5	*.66**(.57,.73)*	***6***	*.35**(.21,.47)*
7	*.57**(.46,.66)*	***8***	*.68**(.59,.75)*
9	*.32**(.18,.44)*	***10***	*.47**(.35,.58)*
11	*.41**(.28,.52)*	***12***	*.52**(.40,.62)*
13	*.49**(.37,.59)*	***14***	*.73**(.56,.73)*
15	*.61**(.51,.69)*	***16***	*.52**(.40,.62)*
17	*.76**(.69,.82)*	***18***	*.65**(.56,.73)*
19	*.69**(.60,76)*	***20***	*.60**(.50,.69)*
21	*.64**(.54,.72)*	***22***	*.63**(.53,.71)*
23	*.55**((.44,.64)*	***24***	*.24**(.10,.37)*
25	*.59**(.49,.68)*	***26***	*.67**(.58,.74)*
27	*.49**(.37,.59)*	***28***	*.56**(.45,.65)*
29	*.33**(.19,.45)*		
Cohesion Items	**r (95% CI)**	**Adaptability Items**	**r (95% CI)**
30	*.53**(42,.63)*		

7. 5 Table Item-total correlations for the Couple cohesion and adaptability scale. (FACESII)

Cohesion Item	*r (95% CI)*	*Adaptability Item*	*r (95% CI)*
1	*.75**(.86,.81)*	***2***	*.75**(.86,.81)*
3	*.55**(.44,.64)*	***4***	*.74**(.67,.80)*
5	*.76**(.69,.82)*	***6***	*.78**(.71,.83)*
7	*.64**(.34,.57)*	***8***	*.75**(.86,.81)*
9	*.43**(.30,.54)*	***10***	*.56**(.45,.65)*
11	*.57**(.46,.66)*	***12***	*.55**(.44,.64)*
13	*.73**(.56,.73)*	***14***	*.76**(.69,.82)*
15	*.65**(.56,.73)*	***16***	*.82**(.77,.86)*
17	*.85**(.80,.89)*	***18***	*.86**(.82..89)*
19	*.75**(.86,.81)*	***20***	*.75**(.86,.81)*
21	*.59**(.49,.68)*	***22***	*.79**(.73,.84)*
23	*.79**(.73,.84)*	***24***	*.40**(.27,.52)*
25	*.57**(.46,.66)*	***26***	*.84**(.79,.82)*
27	*.49**(.37,.59)*	***28***	*.68**(.59,.75)*
29	*.49**(.37,.59)*		
30	*.72**(.64,.78)*		

7. 6 Table Correlation between Family Cohesion, Adaptability, Loneliness, and Self-esteem (with 95% CIs).

Scales	*Loneliness*	*Self Esteem*
Cohesion	*-.60**(-.69,-.50)*	*.56**(.45,.65)*
Adaptability	*-.48**(-.58,-.36)*	*.46**(.34,.57)*
Couple Cohesion	*-.32**(-.44,-.18)*	*.44**(.31,.55)*
Couple Adaptability	*-.32**(-.44,-.18)*	*.42**(.29,.53)*

7.5 Discussion:

This study aimed to examine the psychometrics proprieties of the Arabic version of the family adaptability and cohesion evaluation scale FACES II. The findings suggest that the two dimensions, family and couple cohesion, and adaptability of Arabic version of FACES II have been developed that can now be used for this type of research in an Arab context.

The findings of the translation process were supported by the result of item-total correlations and the internal consistency reliability. It shows that all the items of the Arabic version of FACES II were high positively correlated with the total of the scale in which provide evidence that the items of the scale of cohesion and adaptability assess the same concept. However, the correlations between items number 24 in both family and couple versions were lower with the total of the scales compared with others. The reliability of the two dimensions of the FACES II was found by Cronbach's Alpha to be high for the subscales. For example, it was equal or higher than the reliability reported by Olson (1983), and similar to the Spanish and Chinese versions (Youngblut, 2006; Phillips *et al*, 1998; P.Greeff, 2000).

In term of the validity of the Arabic version of FACES II, this study used the factor analysis in order to examine the construct validity of the scales. It should be mentioned here that the sample size of the current study did not meet the criteria of using the factor analysis but it gives indications that the items belonging to family scale did not load into variables of loneliness either self-esteem. The findings found that the items of the two dimensions; cohesion and adaptability for the family and couple versions loaded on different factors than those that the items of loneliness and self-esteem scales loaded. In more detail, it was found that the item number 24 which is "*It is difficult to get a rule changed in our family*" and in the couple version "*It is difficult to get a rule changed in our relationship*" in the family adaptability scale did not strongly load on any factor, and in the couple adaptability scale it

has a loading less than .30. One possible reason for that is due to culture. In Western culture rules can normally be changed by parents or the oldest person in the family and the youngest especially children have less likelihood to change rules in the family. Also, in Western culture the society especially in Saudi Arabia is more likely to be patriarchal society so women have less opportunity to change rules in a marital relationship. Consequently, this item might not be suitable especially for a sample that consisted of more than 70% women and children (under the age of 20). The construct validity of the Arabic version of FACES II was found by investigating the correlations between the two dimensions; cohesion and adaptability of the FACES II with loneliness and self-esteem scales. The results revealed that the two dimensions of the FACES II were correlated negatively with loneliness and positively with self-esteem.

The results suggest that properties of the Arabic FACES II scale indicate it is suitable to be used to investigate the dimensions of the family functioning in the Arabic world especially in Saudi Arabia. However, further confirmatory studies are desirable with this scale using larger samples, and it might be good idea to explore the scale with family members belonging to one family and follow up over time in order to provide more evidence of its psychometrics properties. It could also be worth carrying out studies on stages of the family life cycle, beginning with young couples without children, couples with preschool children, families with school age children, couple with adolescents in the home, lunching family, empty nest family, and family retirement to investigate the level of adaptability and cohesion across these contexts.

After checking the properties of the FACES II scale chapters 8,9, and 10 examine the main data set for the current project.

8. Chapter Eight: Study Four: (Cross Sectional)

8.1 Introduction:

The results which were obtained from the pilot study revealed some relationships among the Internet use, family system (cohesion & adaptability), and psychological well-being. Also, some recommendations from the pilot study has been provided in term of developing the scale of the Internet use by adding some questions in order to capture the two aspects of the Internet use concept as much as it could. Thus, scale of Internet was developed and in the separate study the family and well-being scales under this study have been validated in order to be appropriate for the Saudi society.

8.2 Study Aims:

This section aimed to continue investigating the impact of Internet use on the family system and psychological well-being. To achieve this aim, this study used the advance statistical method which are the Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM). In order to use the CFA and SEM, it might be useful to explain the issues related them such as the guide line of model judgment, and another requirement that should be met before proceeding to use the CFA and SEM like missing data, the normality of data distributed. The next part of this study is to explain these matters.

1. To Explain the guide of using (CFA & SEM).
2. To describe the sample of the cross-sectional study.
3. To investigate the Internet pattern of the sample.
4. To investigate the differences between time spent on online activities between weekdays and weekends.

8.3 Introduction of Confirmatory Factor Analysis & Structural Equation Modelling:

Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) are considered as powerful statistical tools in order to examine relationships among the observed and latent variables (Jackson *et al*, 2009). CFA is a fundamental and a previous step before doing SEM. It examines the relationships between the observed (items of the scale) and the latent variables that observed items belonging to (Brown, 2006,2015; Russell, 2002; Jackson, 2009).

Structural Equation Modelling (SEM) is a method of statistics which is designed to examine the causal relationships among the variables which are theoretically established. (Byrne,1994;2010).

In this type of statistical method, there are two different variables in the structural equation modelling; observed variables which are the items that can be measured directly and observed they form the concepts of the latent variables. Secondly, latent variables that present a meaning for group of observed variables. (Byrne, 1994).

8.3.1 Model Fit Indices:

There are several measures to make a judgment of the overall model fit when CFA and SEM are used. The measures of the overall model fit can be divided into two main types of measures. The first one is called absolute measures, and it refers to how well the assumption model fits the sample data (McDonald, 2002). The main measure in the absolute indices is the Chi-Square (X^2). The x^2 indicates a good model fit when the *p*-value is insignificant, which means that there is no significant between a variance of the data from a sample and an estimate variance. However, there is an agreement from many statisticians that the X^2 is

very sensitive to the sample size, especially large samples, and consequently the X^2 is more likely to be significant (Bentler & Bonnet, 1980; Hair *et al*., 2006; Gefen *et al*., 2000).In addition, the other absolute indices such as GFI Goodness-of-Fit and the Adjusted Goodness-of Model Index (AGFI) are found to be very sensitive to the sample size. Nevertheless, there is an alternative measure was provided by researchers to avoids the x^2 sensitivity to the large sample by dividing the x^2 value by the degree of freedom and when the results are equal or less than ≤3 indicates a good model fit (CMIN/DF) (Kline, 2005; Byrne, 2010; Shevlin & Miles, 1998; Sharma et al, 2005).

The Root Means Square Residual (RMSR or RMR) measures the square roots of the differences of covariance of the hypotheses model and the residual of the actual sample covariance matrix (Hooper et al, 2008). The range of the RMR is from zero to one and the value that indicates a good model fit is ≤.08 (Byrne, 1998, Hu & Benteler, 1999).

Another set of indices is the Root Mean Square Error of Approximation (RMSEA). This concept was provided by Steiger and Lind in (1980), and it is an important as one of the most useful criteria in Structural Equation Modelling (Byrne,2010). The value range of the RMSEA is between zero up to .08 and the range is classified as a perfect fit when the value of RMSEA is less than .05 (RMSEA≤.05); for a reasonable model when the values are equal or greater than .05 to up to .08 (Byrne,2001;2010; Hire et al.,2006; Hu & Bentler,1999).

The second type of fit measures is called incremental indices, also known as comparative measures (Byrne, 2010). Several measures under the incremental indices, such as Normed Fit Index (NFI), Confirmative Fit Index (CFI) and, the Tucker-Lewis Index (TLI). (Hu & Bentler, 1999; Hire et al., 2006; Jaccard & Wan, 1996).

8.3.2 The fit indices used in the current study:

According to the literature, there is no agreement about what the best index is to use, and it becomes a matter of choice to select the best indices which indicate a good model fit (Brown, 2006; Hooper, 2008). The possible reason for disagreement is that each index measure of the model fit assesses the model from a different angle. Also, it may be because there are no clear instructions on selecting the better measures. Consequently, different guidelines have been provided in order to achieve good results for the overall model fit. For example, MacDonald and Ho (2002) found that the following measures should be used: these are CFI, GFI, NFI, and NNFI. However, as discussed above, for example, GFI and AGFI are sensitive to the sample size. Kline (2005) suggests using $X^{2,}$ RMSEA, CFI, and RMR, while Hu and Bentler (1999) classify three groups of indices and the CFA or SEM examiner can select one of them; the first group is to present NNFI and SRMR, the second group is to provide RMSEA along with SRMR, finally there is CFI and SRMR.

Based on the discussion above, it is very clear that there is no excellent rule to be followed to choose the best measures for model fit, and also these fit measures can be changed over time. In this study, the following measures are used to make a judgement of the overall model fit; RMSEA, X^2 and X^2/df. Table 8.1 provides the guide of the fit indices for this study.

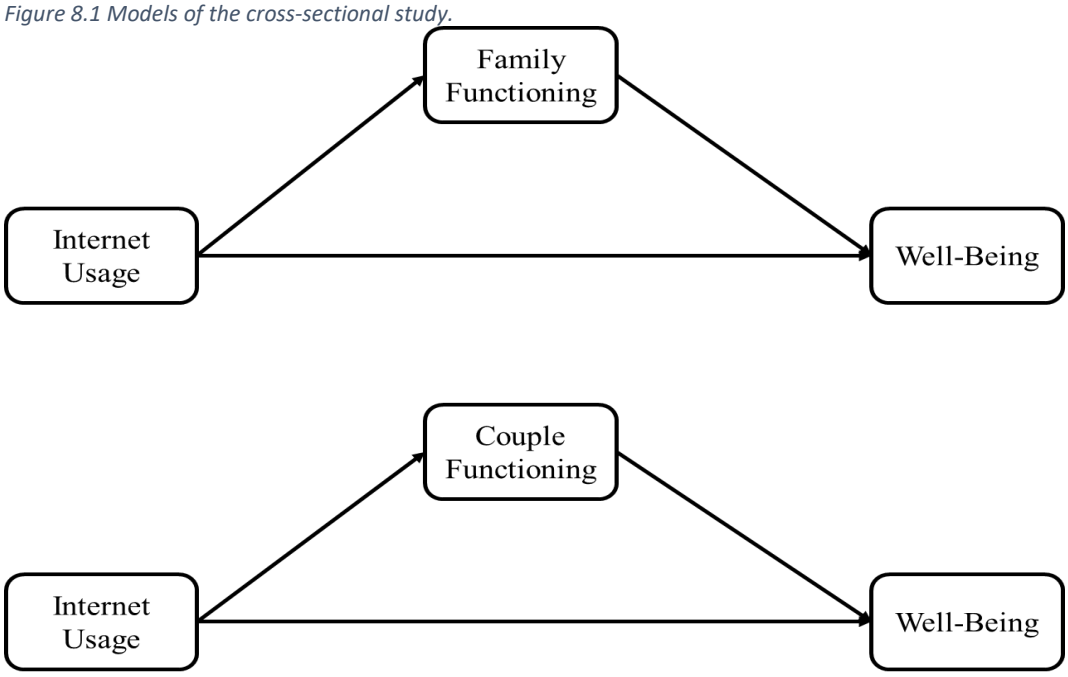
Table 8.1 The fit indices in this study for CFA and SEM

Fit Indices	Cut-off score
X^2	X^2 where *p* value ≥.05 and
X^2/df	= <3
RMSEA	<0.05 for good fit or .05-.08 for adequate fit

8.4 Research Design:

There are two type of models are tested in this study, the first one is the model that measure the impact of the Internet as an independent variable, while family functioning works as a mediation variable while well-being as an independent variable. However, the second model is the model which measure the impact of the Internet use on couple functioning as a mediation variable while the well-being variables as dependent variables. see Figure 8.1.

Figure 8.1 Models of the cross-sectional study.



8.5 Method:

In order to understand the impact of the Internet use on the family system and well-being variables, more surveys were sent over the Saudi clubs in the United Kingdom and Saudi Arabia by the emails. Sample of 433 participants were collected 221 participants lived in Kingdom of Saudi Arabia and 212 lived in the United Kingdom when the study was being conducted. The age of the sample range from 12 to 54 years with average mean of 30.23 and standard deviation of 8.1 (see the methodology chapter and Table 8.2 for more details).

Table 8.2 Sample description.

Demographic variables	*Category*	*Count*	*Percentage*
Country	**KSA**	*221*	*51%*
	UK	*212*	*49%*
	Total	*433*	
Gender	**Male**	*264*	*61%*
	Female	*169*	*39%*
	Total	*433*	
Status	**Married**	*300*	*69.3%*
	Single	*128*	*29.6%*
	Divorce	*5*	*1.2%*
	Total	*433*	
Family Members	**Father**	*197*	*45.5%*
	Mother	*91*	*21%*
	Sons	*67*	*15.5%*
	Daughter	*78*	*18%*
	Total	*433*	
Education	**Less than High school**	*15*	*3.5%*
	High School	*58*	*13.4%*
	Diploma	*28*	*7.5%*
	Bachelor	*150*	*34.6%*
	Graduate	*182*	*42%*
	Total	*433*	
Job	**Student**	*126*	*29.1%*
	Employed	*212*	*49%*
	Business	*43*	*9.9*
	Unemployed	*51*	*12.8%*
	Other	*1*	*.2%*
	Total	*433*	
Income	**Up to £500**	*69*	*15.9%*
	£500 up to £800	*29*	*6.7%*
	£800 up to £1100	*49*	*12.3%*
	£1100 up to £1800	*250*	*57.7%*
	More than £1800	*36*	*8.3%*
	Total	*433*	

8.6 Data Preparation:

Before starting to use CFA and SEM, the data set should be prepared. Two fundamental steps related to the preparation of data were taken into account; the first one is to check whether any data is missing, and then to check the normal distribution of the data set. In terms of missing data, this study used an online questionnaire and the important items were made as a compulsory, which meant that the participants were not able to skip the page until they answered the questions that were required. As a result, no missing data were found.

In terms of the normal distribution of the data, two tests were used in order to investigate the normality of the data. The property to check is skewness, and which describes the asymmetry of the data compared with the normal curve (which is symmetrical). The second property to check is called kurtosis, which describes the heaviness of the tails relative to normal data. When the value of the skewness is no greater than <3.0 and the kurtosis no greater than <5.0 the data are very approximately in the range of normality distribution (Hair *et al.*, 2006; Kline, 2005).

According to the results of the tests of normality, all the scale items under investigation are approximately normal.

8.7 Results:

The results of the current study were divided into four sections as follow; the first section is to describe the Internet use pattern, and this section includes year of using the internet, the devices such as smart phone that the participants hold, and the differences between the time spent on online activities at weekdays and weekends. The second section is to present the results of the missing data, data distribution. The third section presents the results of the confirmatory factor analysis for the scales under the current study. The final section presents the results of the main models by using the structure equation modelling.

8.7.1 Internet Pattern:

This section describes the Internet usage pattern includes the number of devices which enable the people to connect to the internet, how many years the participants have used the Internet, also to describe how the participants use the Internet in term of the time spent on online activities cross a week.

8.7.1.1 The number of devices:

The results of the number of devices that the participants have showed that the smart phone has the highest mean =1.67, followed up by the mean of the laptop M=1.17, tablets M=.90, consoles M=.56, and the smallest mean showed is the desktop M=.32. Table 8.3 describes the type of devices and the number the participants have.

Table 8.3 Type and number of devices

	Smart Phone	Tablet	Laptop	Desktop	Console
Valid	*433*	*433*	*433*	*433*	*433*
Missing	*0*	*0*	*0*	*0*	*0*
M	*1.67*	*.90*	*1.2*	*.32*	*.56*

The next table 8.4 displays the number of smart phones that participants have, the answer of this question was categorised in five groups includes no devices, one device, two devices, three devices, and more than four. The result shows that only 9% from the sample claimed to not have a smartphone at all. While more than 50% indicated that they have one smartphone followed by 32.1% of the sample that claimed to have two smartphones. However, the lowest percentage of the number of smart phone were for the third and fourth group, they were 7.4%, and 7.2% respectively. The results are provided in table 8.4.

Table 8.4 Number of smartphone that participants have.

Devices	Frequency	Percent
None (Group 1)	*4*	*0.9%*
One Device (Group 2)	*227*	*52.4%*
2 Device (Group 3)	*139*	*32.1%*
3 Device (Group 4)	*32*	*7.4%*
4 or more (Group 5)	*31*	*7.2%*
Total	*433*	*100.0%*

Table 8.5 present the number of tablets such as iPad, Galaxy tablets that participants have. The results showed that about a third of the sample claimed to not have this type of device. Similarly, with the smart phone about just above half percentage of the sample has one tablet.

However, small percentage for group 3, 4, and 5of the sample indicated that they have two tablets and more 7.4%,4.4%, and 2.5% respectively. The results also provided in table 8.5.

Table 8.5 Number of tablets.

Number of Tablets	Frequency	Percent
None (Group 1)	*145*	*33.5%*
One Device (Group 2)	*226*	*52.2%*
2 Device (Group 3)	*32*	*7.4%*
3 Device (Group 4)	*19*	*4.4%*
4 and more (Group 5)	*11*	*2.5%*
Total	*433*	*100.0%*

The next table 8.6 and 8.7 presents the number of laptop and desktop. The results indicated that just above 10% of the sample claimed not to have a laptop while more than 60% of the sample has no desktop. Most of the sample 67.4% indicated that they have one laptop while less than one third of the sample has one desktop. The group 3, 4, and 5 in laptop and desktop have the lowest percentage which indicated to have more than one devices either laptop or desktop. The table number 6 and 5 provide the results. the most of sample has at least one laptop while only one third of the sample indicated that they have one desktop. The tables8.6, and 8.7 provided the results.

Table 8.6 Number of laptop.

Number of laptop	Frequency	Percent
None (Group 1)	*49*	*11.3%*
One Device (Group 2)	*292*	*67.4%*
2 Device (Group 3)	*68*	*15.7%*
3 Device (Group 4)	*19*	*4.4%*
4 and more (Group 5)	*5*	*1.2%*
Total	*433*	*100.0*

Table 8.7 Number of desktop.

Number of desktop	Frequency	Percent
None (Group 1)	*300*	*69.3%*
One Device (Group 2)	*128*	*29.6%*
2 Device (Group 3)	*4*	*.9%*
3 Device (Group 4)	*1*	*.2%*
4 and more (Group 5)	*0*	*0%*
Total	*433*	*100.0*

The next table 8.8 presents the number of consoles such as PlayStation, or Xbox. The results showed that more than half percentage of the sample indicated not to have a console ate home. Followed up by 36% claimed to have one console at home. The group number 3, 4, and 5 have the lowest percentage of having more than one console at home 7.2%,1.4%, and .5% respectively. The results also provided in table 8.8.

Table8.8 Number of console.

Number of desktop	Frequency	Percent
None (Group 1)	*238*	*55.0*
One Device (Group 2)	*156*	*36.0*
2 Device (Group 3)	*31*	*7.2*
3 Device (Group 4)	*6*	*1.4*
4 and more (Group 5)	*2*	*.5*
Total	*433*	*100.0*

8.7.1.2 The number of years of using the Internet:

The questionnaire also asked the participants about how many years they have been using the internet. The options of the answer were never used it, less than 12 months, from one year up to two years, from two years up to three years, from three years up to four years, and more than five years. The results indicated that most of the sample they used the Internet for more than five years 76.9%, also, just below 20% of the sample had used the Internet for more than three years and less than four years. However, small percentage which represents the sample who used the Internet for less than three years. The results also provided in table 8.9.

Table 8.9 Year of using the internet.

Years of Internet	*Frequency*	*Percent*
Less Than One Year	3	0.7%
Less Than Two years and more than one	5	1.2%
Less than Three Years and more than Two	14	3.2%
Less than Four Years and more than Three	78	18.0%
Five years and more	333	76.9%
Total	433	100.0%

8.7.2 The Differences between time spent on internet on weekdays and weekends among the family members:

This section is to find out the differences between the time spent on internet activities in two different time in the week at (weekdays and weekends) among family members. There are seven different activities that the participants carry out on the internet; time general which means that participants using the internet for no specific online activities, search activity, pleasure, communication, game, friendships, and shopping online.

To do that, a Mixed between-within subjects analysis of variance was used. This analysis method provides three important results; *the interactions between time spent on online at (weekdays, weekends) and family members, the differences within Weekdays, and Weekends times in terms of time spent on online activities, and the differences among family members in time spent on online activities*.

Based on the results of interactions from the previous statistical method, it could use the Paired-sample t-test is used when the interaction result is significant in order to determine the performance of each member in two different time (weekdays, and weekends) the SPSS software version 21 is used.

8.7.2.1 Time spent on internet in general:

The results indicated that there was significant interaction between family member and general time spent on online $F\ (3,429) = 4.194$, $p < .05$. It was found that the time spent on online in general was reduced from weekdays to weekends $F\ (1,429) = 18.930$, $p < .005$. The full results are provided in Table 8.10.

Also, it was found that there was a significant difference among family members in term of spent time on online generally $F\ (3,429) = 4.377$, $p < .05$. To find out the differences among family members, Bonferroni corrected t tests were used. The results indicated that the time spent generally on online is differed only between father and daughters. See Table 8.11 and Figure 8.2.

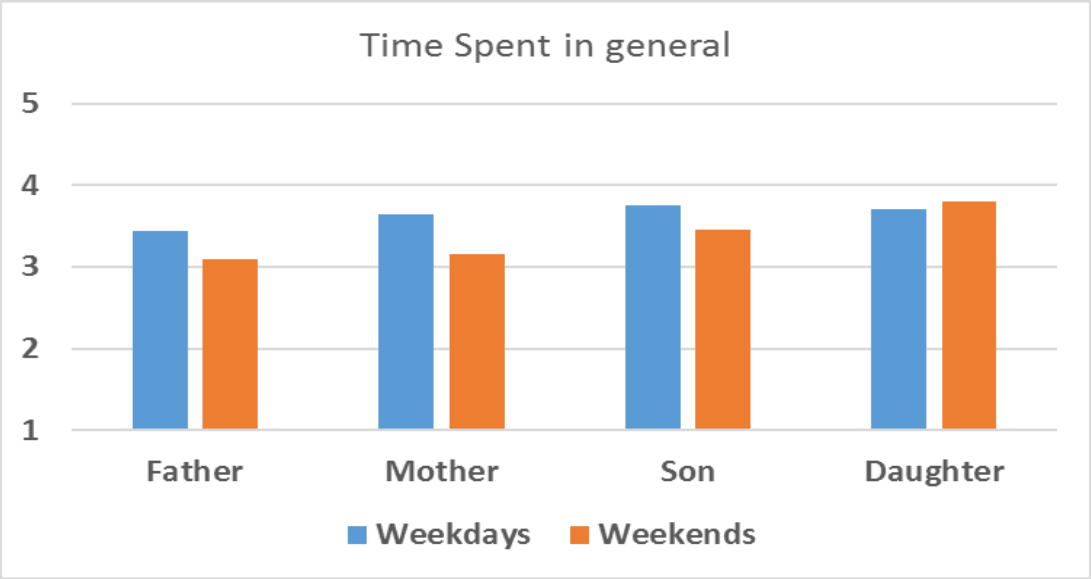
Table 8.10 Mean, and standard deviation of the family members in spent time on online in general.

	Family Members	M	SD	N
Time Spent weekdays in general	Father	3.44	1.26	197
	Mother	3.64	1.27	91
	Son	3.75	1.30	67
	Daughter	3.70	1.30	78
	Total	3.60	1.30	433
Time Spent weekends in general	Father	3.10	1.14	197
	Mother	3.15	1.15	91
	Son	3.45	1.22	67
	Daughter	3.80	1.30	78
	Total	3.30	1.21	433

Table 8.11 Bonferroni corrected t tests.

Family Members	Members	Mean Difference	Std. Error	Sig.
Father	Mother	-0.14	0.14	1.000
	Son	-0.34	0.15	.165
	Daughter	-0.48*	0.15	.005
Mother	Father	0.139	0.14	1.000
	Son	-0.20	0.17	1.000
	Daughter	-0.35	0.16	.234
Son	Father	0.34	0.15	.165
	Mother	0.20	0.17	1.000
	Daughter	-0.15	0.18	1.000
Daughter	Father	0.48*	0.14	.005
	Mother	0.35	0.17	.234
	Son	0.15	0.18	1.000

Figure 8.2 Time spent on online generally by the family members in two times a week. (Weekdays, Weekends)



Because the result indicated that there was significant interaction between family members and time spent on online generally at weekdays and weekends, the Paired- Samples *t-test* was conducted to find out the differences between time spent online in general at weekdays and weekends (time one, time two) for each member.

The results showed that time spent on online generally by fathers *(N=197)* was significantly different between weekdays (Time 1) *M*=3.4365, *(SD=1.25856)*, and weekends (Time 2) *M=3.0761, (SD=1.13807), t (196) =4.803, p<.05.* Also, mothers *(N=97)* found that they significantly spent more time at weekdays *M=3.6374, (SD=1.27816)* compared with weekends *M=3.1538, (SD=1.15396), t (90) = 4.236, p<.05.*

However, sons and daughters were found that there were no statistically differences between weekdays and weekends in terms of spending time on general online. The results showed that sons *(N=67)* spent more time at weekdays *M=3.7463, (SD=1.29502)* compared with weekends *M=3.4478, (SD=1.22206), t (66) = 1.965, p>.05*. Daughters *(N=78)* spent less time at weekdays *M=3.6923, (SD=1. 30242)* compared with weekends *M=3.7949, (SD=1.28284), t (77) = -.689, p>.05.*

8.7.2.2 Time Spent on Search online:

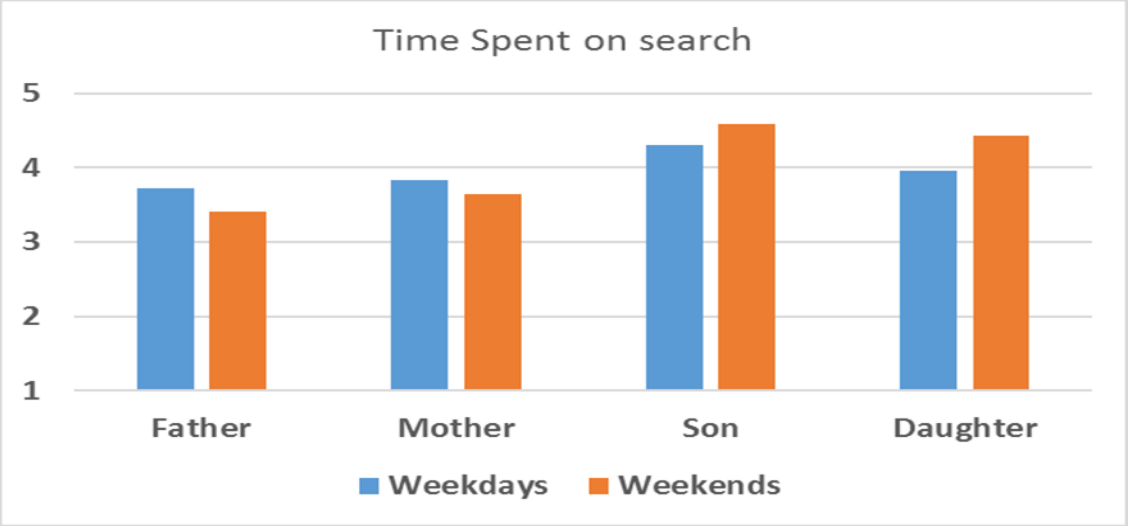
The results indicated that there was no significant interaction between family member and time spent on search online at weekdays and weekends *F (3,429) =.622, p>.05*. However, the result found that the time spent on search online was reduced from weekdays to weekends *F (1,429) =12.485, p<.005*. The full results are provided in Table 8.12 and Figure 8.3.

In terms of differences among family members on spent time on search online, the results indicated that there was no differences *F (3,429) =1.294, p>.05*.

Table8.12 Mean, and standard deviation of the spent time on search by family members.

	Family Members	M	SD	N
Time Search On Weekdays	Father	*3.92*	*1.73*	*197*
	Mother	*4.33*	*1.90*	*91*
	Son	*4.25*	*1.84*	*67*
	Daughter	*3.86*	*1.97*	*78*
	Total	*4.04*	*1.83*	*433*
Time Search on Weekends	Father	*3.69*	*1.60*	*197*
	Mother	*3.93*	*1.80*	*91*
	Son	*4.01*	*1.88*	*67*
	Daughter	*3.75*	*1.82*	*78*
	Total	*3.81*	*1.73*	*433*

Figure 8.3 Time spent on search online by family members in two times a week (weekdays , and weekends)



8.7.2.3 Time Spent on Pleasure Online:

The results indicated that there was a significant interaction between family member and time spent on pleasure online *F (3,429) =6.592, p<.05*. However, the result found that the time spent on pleasure online was not reduced significantly from weekdays to weekends *F (1,429) =.602, p>05*. The full results are provided in Table 8.10.

In terms of differences among family members, it was found that there was a significant difference among family members in spending time on pleasure online *F (3,429) =5.789, p<.05.* In order to find the differences among family members the Bonferroni corrected *t* tests were used. The results showed that the sons and daughters spent more time on pleasure activity and it is significantly different from fathers but not mother see Table 8.13 also Figure 8.4.

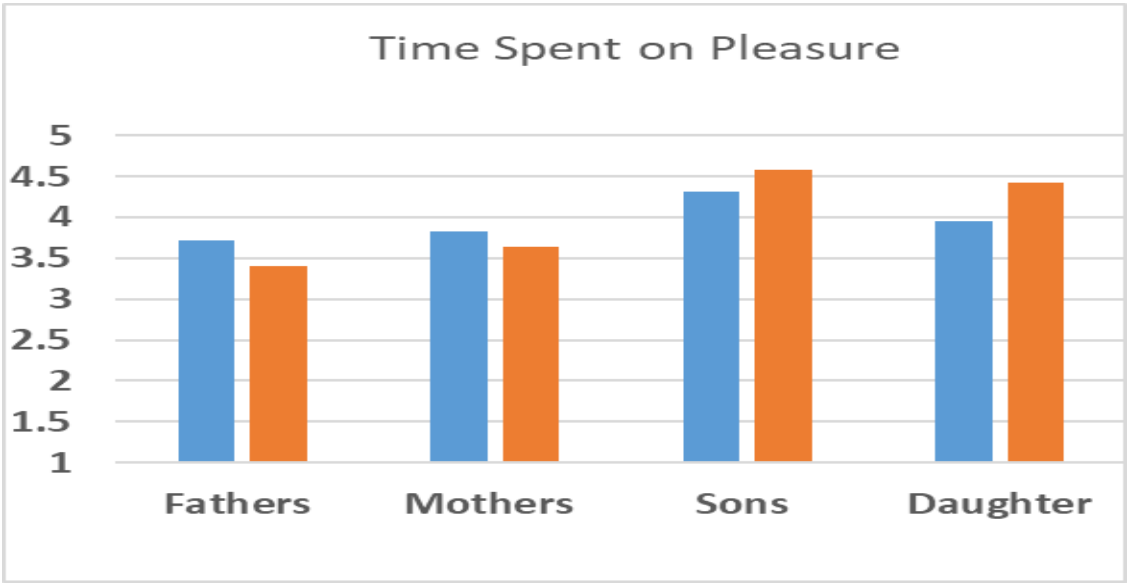
Table 8.13 Mean, and standard deviation of the spent time on pleasure by family members.

	Family Members	M	SD	N
Time On Pleasure Weekdays	Father	3.72	1.67	197
	Mother	3.83	1.94	91
	Son	4.31	2.18	67
	Daughter	3.96	1.95	78
	Total	3.88	1.87	433
Time On Pleasure Weekends	Father	3.41	1.54	197
	Mother	3.64	1.72	91
	Son	4.58	2.18	67
	Daughter	4.43	2.31	78
	Total	3.82	1.90	433

Table 8.14 Bonferroni corrected t tests

Family Members	Family Members	Mean Difference	Std. Error	Sig.
Father	Mother	-0.17	0.22	1.000
	Son	-0.87*	0.24	.002
	Daughter	-0.63*	0.23	.035
Mother	Father	0.17	0.22	1.000
	Son	-0.71	0.27	.061
	Daughter	-0.46	0.26	.491
Son	Father	0.88*	0.24	.002
	Mother	0.71	0.27	.061
	Daughter	0.25	0.28	1.000
Daughter	Father	0.63*	0.22	.035
	Mother	0.46	0.26	.491
	Son	-0.25	0.28	1.000

Figure 8.4 Time spent on online pleasure by the family members in two times a week. (Weekdays, Weekends)



Because the results indicated that there was significant interaction between family members and time spent on pleasure online at weekdays and weekends, the Paired- Samples *t-test* was conducted to find out the differences between time spent on pleasure online at weekdays and weekends (time one, time two) for each member.

The results showed that time spent on pleasure online by fathers *(N=197)* was significantly different between weekdays (Time 1) *M*=3.7259, *(SD=1.67393)*, and weekends (Time 2) *M=3.4112, (SD=1.53811), t (196) =3.196, p<.05*. While, daughters *(N=78)* spent less time at weekdays *M=3.9615, (SD=1.95031)* compared with weekends *M=4.4359, (SD=2.30522), t (77) = -2.396, p<.05*.

However, mothers *(N=97)* found that they spent more time at weekdays *M=3.8352, (SD=1.93944)* compared with weekends *M=3.6484, (SD=1.72159)* but not significantly, *t (90) = 1.346, p>.05*. Also, sons were found that there were no statistically differences between weekdays and weekends in terms of spending time on pleasure online. The results showed that sons *(N=67)* spent less time at weekdays *M=4.3134, (SD=2.18264)* compared with weekends *M=4.5821, (SD=2.18222), t (66) = -1.327, p>.05*.

8.7.2.4 Time Spent on Communication online:

The results indicated that there was no significant interaction between family member and time spent on communication online at weekdays and weekends $F\ (3,429) = 1.518,\ p > .05$. However, it was found that the time spent on communication online was reduced from weekdays to weekends $F\ (1,429) = 5.893,\ p < .005$.

In terms of differences among family members, the result indicated that there were significant differences on time spent on communication online $F(3.43) = 4.42, p < .05$. The Bonferroni correlated *t* tests revealed that the differences were between fathers, sons, and daughters see Table 8.15 and Figure 8.5.

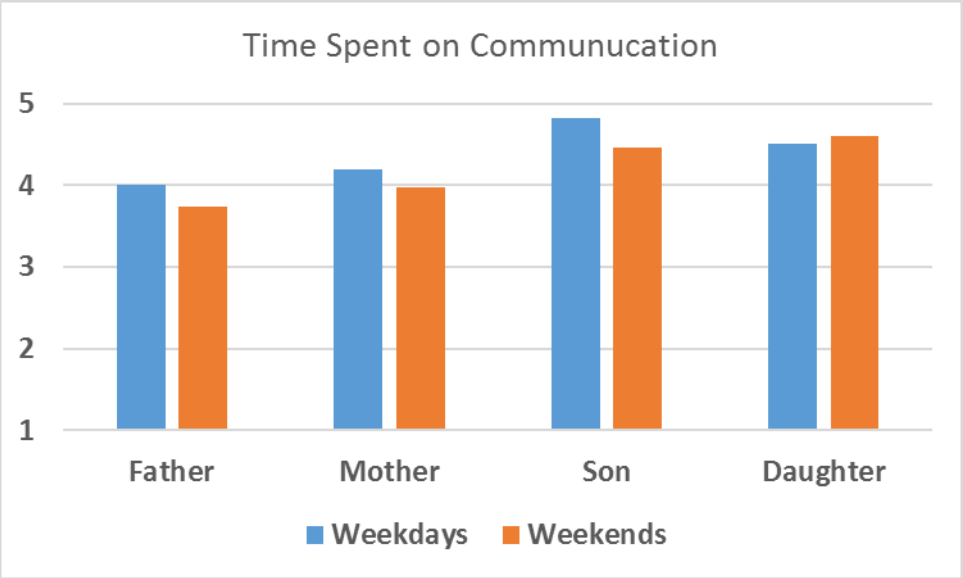
Table 8.15 Mean, and standard deviation of the spent time on Communication by family members.

	Positions	**M**	**SD**	**N**
Communication time Weekdays	Father	*4.0*	*2.00*	*197*
	Mother	*4.20*	*2.15*	*91*
	Son	*4.82*	*2.33*	*67*
	Daughter	*4.50*	*2.10*	*78*
	Total	*4.24*	*2.12*	*433*
Communication time Weekends	Father	*3.73*	*1.77*	*197*
	Mother	*3.97*	*1.85*	*91*
	Son	*4.46*	*2.05*	*67*
	Daughter	*4.60*	*1.88*	*78*
	Total	*4.05*	*1.88*	*433*

Table 8.16 Bonferroni correlated t tests

Members	**Members**	**Mean Differences**	**Std. Error**	**Sig.**
Father	Mother	*-0.22*	*0.23*	*1.000*
	Son	*-0.77**	*0.26*	*.018*
	Daughter	*-0.68**	*0.25*	*.034*
Mother	Father	*0.22*	*0.23*	*1.000*
	Son	*-0.55*	*0.29*	*.376*
	Daughter	*-0.46*	*0.28*	*.624*
Son	Father	*0.77**	*0.26*	*.018*
	Mother	*0.55*	*0.29*	*.376*
	Daughter	*0.09*	*0.31*	*1.000*
Daughter	Father	*0.68**	*0.25*	*.034*
	Mother	*0.46*	*0.28*	*.624*
	Son	*-0.09*	*0.31*	*1.000*

Figure 8.5 Time spent on online communications by the family members in two times a week.



8.7.2.5 Time Spent on Game online:

The results indicated that there was no significant interaction between family member and time spent on game online at weekdays and weekends *F (3,429) =.395, p>.05*. Also, it was found that there were no significant differences within time spent on game online at weekdays and weekends *F (1,429) =1.441, p>.05*. See means and SD in table 8.17.

However, the differences among family members was found significant, *F(3,429)= 25.39,p<.005*, and the Bonferroni correlated *t* tests indicated that the significant differences among the family members were between sons and other family members see Table 8.18 and Figure 8.6.

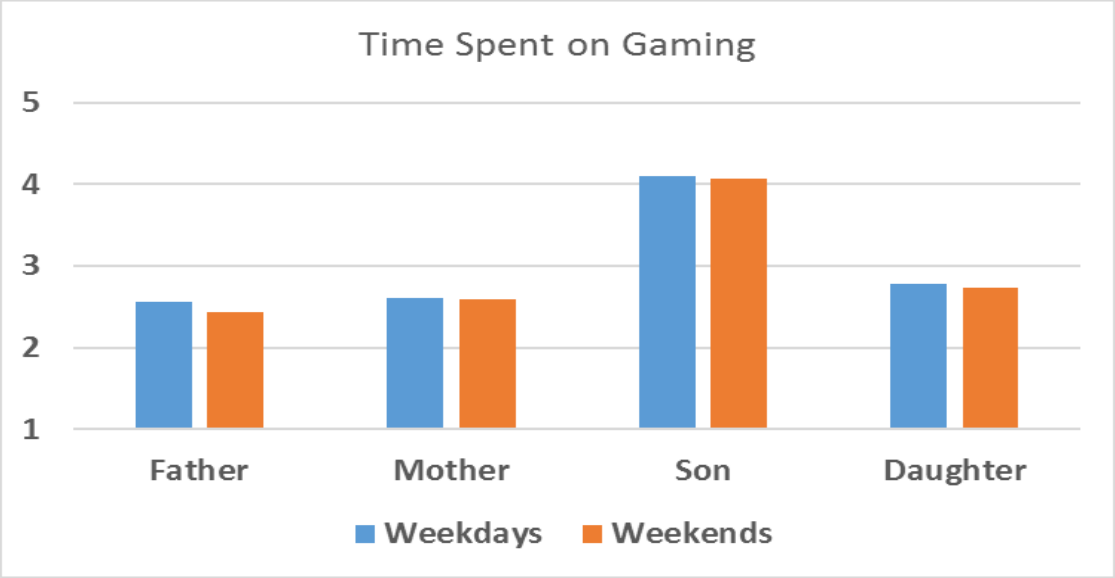
Table 8.17 Mean, and standard deviation of the spent time on game by family members

Time	Family Members	M	SD	N
Time Game Weekdays	Father	*2.56*	*1.17*	*197*
	Mother	*2.61*	*1.45*	*91*
	Son	*4.10*	*2.06*	*67*
	Daughter	*2.78*	*1.38*	*78*
	Total	*2.85*	*1.53*	*433*
Time Game Weekends	Father	*2.43*	*1.00*	*197*
	Mother	*2.59*	*1.37*	*91*
	Son	*4.06*	*2.15*	*67*
	Daughter	*2.74*	*1.23*	*78*
	Total	*2.77*	*1.46*	*433*

Table 8.18 Bonferroni correlated t- tests

Family Members	Family Members	Mean Differences	Std. Error	Sig.
Father	Mother	*-0.10*	*0.16*	*1.000*
	Son	*-1.58**	*0.18*	*.000*
	Daughter	*-0.26*	*0.17*	*.793*
Mother	Father	*0.11*	*0.16*	*1.000*
	Son	*-1.47**	*0.21*	*.000*
	Daughter	*-0.15*	*0.20*	*1.000*
Son	Father	*1.58**	*0.18*	*.000*
	Mother	*1.47**	*0.21*	*.000*
	Daughter	*1.31**	*0.22*	*.000*
Daughter	Father	*0.26*	*0.17*	*.793*
	Mother	*0.15*	*0.20*	*1.000*
	Son	*-1.31**	*0.22*	*.000*

Figure 8.6 Time spent on online game by the family members in two times a week.(Weekdays, Weekends).



8.7.2.6 Time Spent on Friendships online:

The results showed that there was a significant interaction between family members and time spent on weekdays and weekends $F(3,429)= 4.266$, $p<.05$. Also, result indicated that the time spent on friendships was reduced significantly from weekdays to weekends $F(1,429) = 4.037$, $p<.05$.

Moreover, the results indicated that there was a significant difference among family members in spent time on friendships, *F (3,429) =6.58, p<.005*. The Bonferroni t test revealed that the sons spent more time at weekdays and weekends on friendships see the Table 8.19 and Figure 8.7.

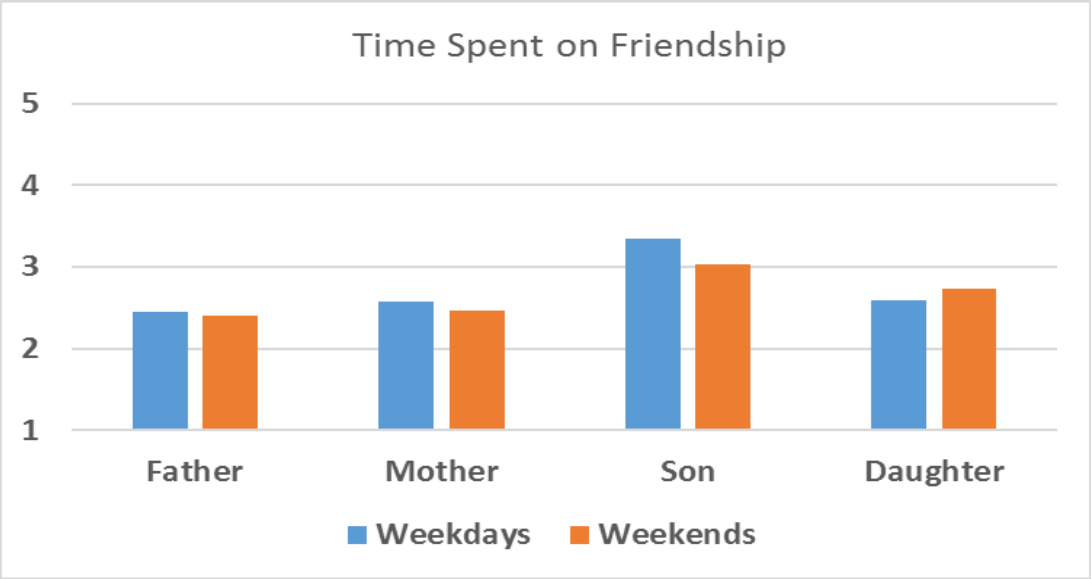
Table 8.19 Means, and standard deviation of the time spent on friendships online

	Positions	**M**	**SD**	**n**
Time Friendships Weekdays	Father	*2.45*	*0.98*	*197*
	Mother	*2.58*	*1.33*	*91*
	Son	*3.35*	*2.14*	*67*
	Daughter	*2.59*	*1.01*	*78*
	Total	*2.64*	*1.33*	*433*
Time Friendships Weekends	Father	*2.41*	*1.02*	*197*
	Mother	*2.47*	*1.35*	*91*
	Son	*3.03*	*1.79*	*67*
	Daughter	*2.73*	*1.31*	*78*
	Total	*2.57*	*1.30*	*433*

Table 8.20 Bonferroni correlated t tests

Family Members	**Members**	**Mean Differences**	**Std. Error**	**Sig.**
Father	Mother	*-0.10*	*0.15*	*1.000*
	Son	*-0.76**	*0.17*	*.000*
	Daughter	*-0.23*	*0.16*	*.993*
Mother	Father	*0.10*	*0.15*	*1.000*
	Son	*-0.66**	*0.19*	*.005*
	Daughter	*-0.13*	*0.18*	*1.000*
Son	Father	*0.76**	*0.17*	*.000*
	Mother	*0.66**	*0.19*	*.005*
	Daughter	*0.53*	*0.20*	*.057*
Daughter	Father	*0.23*	*0.16*	*.993*
	Mother	*0.13*	*0.18*	*1.000*
	Son	*-0.53*	*0.20*	*.057*

Figure8.7 Time spent on online friendships by the family members in two times a week.(Weekdays, Weekends)



Because the results indicated that there was a significant interaction between family members and time spent on friendship online at weekdays and weekends, the Paired-Samples *t-test* was conducted to find out the differences between time spent on friendships online at weekdays and weekends (time one, time two) for each member.

The results showed that time spent on friendships online by fathers *(N=197)* was non-significantly different between weekdays (Time 1) *M*=2.4518, *(SD=.97623)*, and weekends (Time 2) *M=2.4112, (SD=1.01944), t (196) =1.000, p>.05.* Furthermore, mothers *(N=97)* found that they spent more time at weekdays *M=2.5824, (SD=1.33388)* compared with weekends *M=2.4725, (SD=1.35270)* but not significantly, *t (90) = 1.637 p>.05.* In addition, daughters *(N=78)* spent less time at weekdays *M=2.5897, (SD=1.01208)* compared with weekends *M=2.7308, (SD=1.30606), t (77) = -1.293, p>.05.*

However, sons spent time on friendships statistically spent time on friendships online at weekdays and weekends. The results showed that sons *(N=67)* spent more time at weekdays *M=3.3582, (SD=2.13699)* compared with weekends *M=3.0299, (SD=1.79199), t (66) = 2.133, p<.05.*

8.7.2.7 Time spent on shopping online:

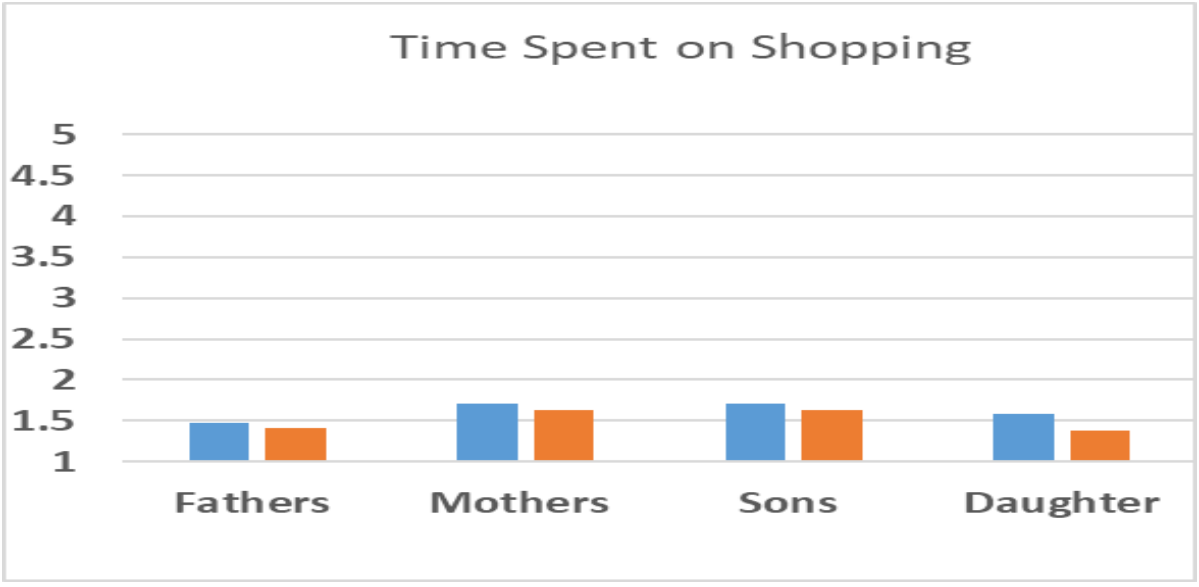
The results showed that there was not a significant interaction between family members and time spent on weekdays and weekends *F(3,429)= 1.221, p>.05*. However, result indicated that the time spent on shopping online was reduced significantly from weekdays to weekends *F (1,429) = 11.015, p<.05.*

Moreover, the results indicated that there was a significant difference among family members in spent time on friendships, *F (3,429) =2.921, p<.05*. The Bonferroni t test revealed that there were no different showed between family members. The results are provided in Table 8.21 and Figure 8.8.

Table 8.21 Mean, Slandered deviation of the time spent on shopping online by family members.

	Positions	M	SD	n
Time Shopping Weekdays	Father	1.467	.69633	197
	Mother	1.703	.98313	91
	Son	1.716	1.02700	67
	Daughter	1.577	.93308	78
	Total	1.575	.86577	433
Time shopping Weekends	Father	1.411	.61319	197
	Mother	1.637	.91307	91
	Son	1.627	1.02744	67
	Daughter	1.372	.62645	78
	Total	1.485	.76702	433

Figure 8.8 *Time spent on online shopping by the family members in two times a week.(Weekdays, Weekends)*



8.8 Summary

The chapter presents the first step of the first study. In this chapter the introduction of the importance of using the advance statistical models (CFA & SEM) was presented. Then the chapter moved to the discussion of the model fit indices and stablished the model fit indices for the current study as a guide. The chapter, after that, explained the research design in terms of which the dependent, independent, and mediation variables. In the current study the causal direction comes from the Internet usage as independent variables and the outcomes are the well-being as dependent variables while mediation variables are the family and couple functioning. Before starting running the CFA and SEM, it should be to check or examine the normal distribution and this has been examined and the results indicated that all the data is in the range of normal distribution. Then chapter moved to describe the number of devices and how many years the participants use the Internet. The final section of the current chapter was for examining the differences of time spent on the Internet activities in between week and weekend days among family members. The results showed that there are differences between time spent in weekdays and weekends in some online activities and among family members. The next chapter is to continue analysing the data by using CFA to examine the overall model fit for each scale.

9. Chapter Nine: Scale Development. (Cross Sectional Study)

9.1 Introduction:

The aim of this chapter is to develop the scales of the current project by using the confirmatory factor analysis CFA. This process s considered as the fundamental step for proceeding to use the structural equation modelling. The chapter begins the family scales, then couple scales, moved to the psychological well-being variables included; Self-esteem, loneliness, satisfaction with life, and satisfaction with family life. The guide line of the overall model fit are used as mentioned in the previous chapter.

9.2 Study Aims:

This section aimed to achieve the following aims:

1. To investigate the overall model fit for FACES II scale.
2. To investigate the overall model fit for the psychological well-being (loneliness, self-esteem, satisfaction with life and with family life)
3. To investigate the overall model fit for the Internet scale.

9.3 Scales Development:

After checking the normality and missing data, the next step before doing SEM is to evaluate the measurement model by using Confirmatory Factor Analysis (CFA) in order to check how well the items (observed variables) loaded on the main concepts (latent variables) of the scales. It was found that many problems with SEM models are because of measurement model issues, which can be sorted out by using CFA (Brown, 2006; Jackson & Stephenson, 2009).

This study includes ten scales, which represent family system (two scales), couple system (two scales), psychological well-being (four scales), self-esteem, loneliness, life satisfaction, family life satisfaction, Internet usage (two scales), activities online, and time spent online. In the present study, CFA was conducted using the AMOS version 21 and the maximum likelihood method to examine the measures of the models.

9.3.1 The Family System Scale (Family Adaptability Cohesion Evaluation Scale) FACES II:

This scale was developed by Olson (1982). The scale consists of thirty items which measure two factors representing family system; the first one is family cohesion, and the second is family adaptability. Based on the developer, the two subscales can be used separately (Olson,1992). In this study it was decided to use the subscale separately. The family cohesion scale consists of sixteen items, and fourteen items measured family adaptability. The next section presents the confirmatory factor analysis for each scale.

9.3.1.1 CFA model fit of Family Cohesion Scale:

One scale is family cohesion in FACES II (Olson,1983), it consists of sixteen items which measures eight small factors: emotional bonding; family boundaries; coalitions; time; space; friends; decision making; and interests and recreations (Olson,1992).

In this phase, the data came from sixteen observed variables which measure the family cohesion concept. The results showed that the X^2 *(59) =126.4,* X^2/df *= 2.14, and the RMSEA = .05*. Those values indicated a good fit between the model and the observed data. Based on

the loading of the items into the latent variable (family cohesion), three items were removed because they did not meet the requirements for being in the scale. The items were numbers 2, 5, and 8 which had *b*<.300. The values are provided in Table 9.1. In addition, the standardised parameter estimate is presented in Table 9.2 and Figure 9.1.

Table 9.1 Overall model for the family cohesion scale

N	***Measure and suggested cut-off value***	***Value***
1	where p value ≥.05 and	*126.4 p=.000 df=59*
2	(<3)	*2.14*
3	*RMSEA* (<0.05 for good fit or .05-.08 for adequate fit)	*.05*

Figure 9.1 CFA for family cohesion scale.

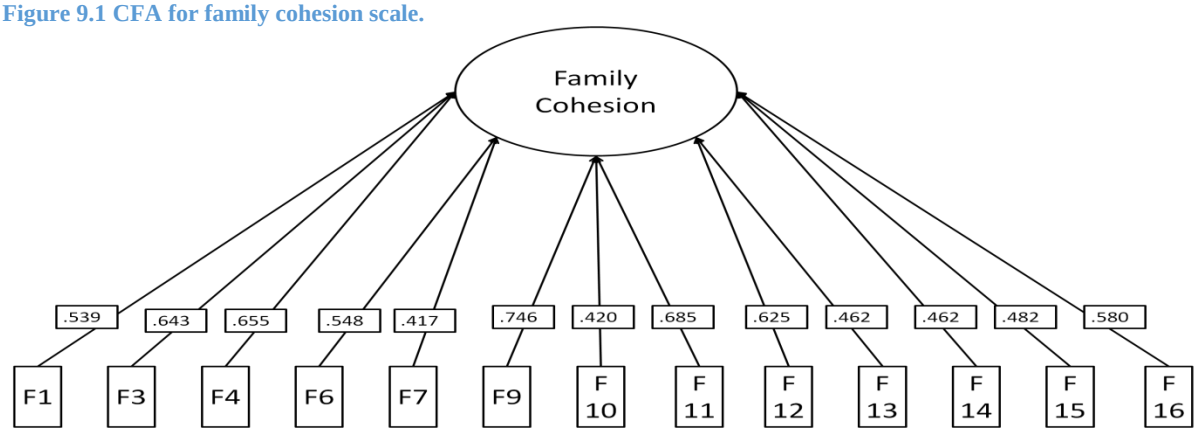


Table 9.2 Loading of the items of the family cohesion scale.

Parameter Estimates	*Unstandardized*	*standardized*	*P*
F1<--- F.C	*1.000*	*.539*	*< .01*
F6<--- F.C	*1.209*	*.548*	*< .01*
F7<--- F.C	*1.016*	*.417*	*< .01*
F9<--- F.C	*1.543*	*.746*	*< .01*
F11<--- F.C	*1.308*	*.685*	*< .01*
F14<--- F.C	*.915*	*.462*	*< .01*
F10_N<---F.C	*.975*	*.420*	*< .01*
F13_N<---F.C	*.983*	*.462*	*< .01*
F15_N<---F.C	*1.102*	*.482*	*< .01*
F3<---F.C	*1.228*	*.643*	*< .01*
F4<--- F.C	*1.301*	*.655*	*< .01*
F12<---F.C	*1.294*	*.625*	*< .01*
F16<---F.C	*1.180*	*.580*	*< .01*

Fc=Family Cohesion

9.3.1.2 CFA model fit of Family Adaptability Scale:

The second factor of the family system is family adaptability (Olson,1983). It consists of fourteen items which measure six factors in family adaptability: assertiveness; leadership (control); discipline; negotiation; roles; and rules.

The data came from fourteen observed variables which measure the family adaptability concept. The results showed that the X^2 *(49)=106,*X^2*/df=2.16, and the RMSEA = .05*. The values indicated a good fit between the model and the observed data. Based on the loading of the items into the latent variable (family adaptability), two items were removed because they did not meet the requirement for being in the scale. These items were numbers 2 and 3, which had *b<.30*. The values are provided in Table 9.3. Also, parameter estimates are presented in Table 9.4 and Figure 9.2.

9.3 Overall model for the family adaptability scale

N	*Measure and suggested cut-off value*	*Value*
1	where p value ≥.05 and	*106.274,p=.000 df=49*
2	(<3)	*2.16*
3	*RMSEA* (<0.05 for good fit or .05-.08 for adequate fit)	*.05*

Figure 9.2 CFA for family adaptability scale.

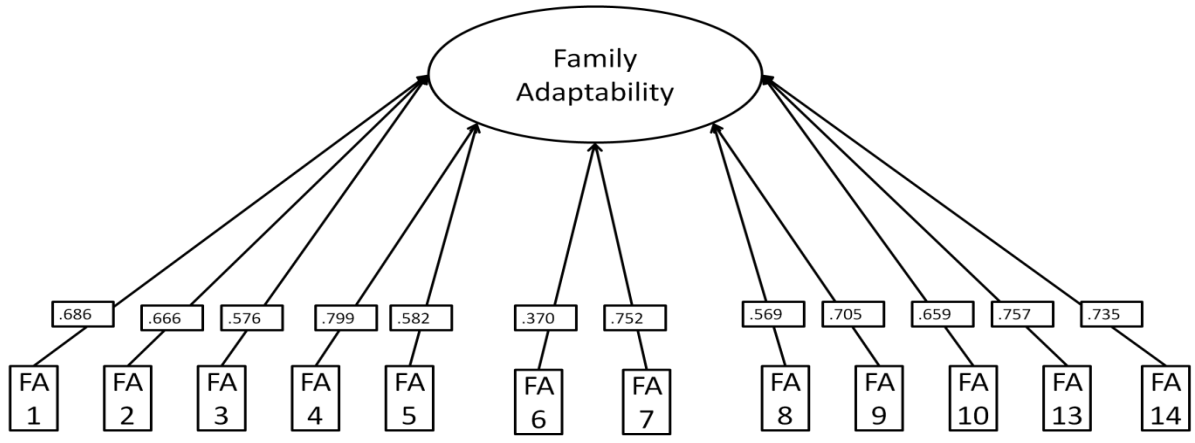


Table 9.4 loading of the scale of the family adaptability scale.

Parameter Estimates	*Unstandardized*	*Standardized*	*P*
FA1<---Fa.Ad	*1.000*	*.686*	*< .01*
FA2<---Fa.Ad	*1.049*	*.666*	*< .01*
FA3<---Fa.Ad	*1.018*	*.576*	*< .01*
FA4<---Fa.Ad	*1.298*	*.799*	*< .01*
FA5<---Fa.Ad	*1.025*	*.582*	*< .01*
FA7<---Fa.Ad	*1.158*	*.752*	*< .01*
FA8<---Fa.Ad	*1.017*	*.569*	*< .01*
FA9<---Fa.Ad	*1.115*	*.705*	*< .01*
FA10<---Fa.Ad	*1.163*	*.659*	*< .01*
F13<---Fa.Ad	*1.117*	*.757*	*< .01*
FA14<---Fa.Ad	*1.214*	*.735*	*< .01*
FA6_N<---Fa.Ad	*.645*	*.370*	*< .01*

FA= Family Adaptability

9.3.1.3 Summary:

The FACES II scale was developed for the all family members to measure the cohesion and adaptability among them. The results showed that the scales have a good model fit for the sample, but five items were removed based on their loading into the latent variables. The total of the items is twenty-five items meeting the requirements to be kept in the scales. The next step is to examine the scales for couple cohesion and adaptability.

9.3.2 CFA model fit of Couple Cohesion and Adaptability scales:

The developer of the FACES scale provided another version to measure the two dimensions of cohesion and adaptability among couples. The current sample consists of 297 participants who are married and excludes the single status.

9.3.2.1 CFA Couple cohesion scale:

The first scale is to measure cohesion between couples; this scale consists of sixteen items. The SEM was carried out and the results were obtained from 297 married participants in order to examine the overall model fit for the couple cohesion scale. The results showed that

the X^2 *(82)=210.44, X^2/df=2.56, and the RMSEA = .07*. These values indicated a good fit between the model and the observed data. Based on the estimate of the items into latent variables, one item was removed because it was less than <.300 and that item is number five. The values are provided in Table 9.5. parameter estimates are presented in Table 9.6 and Figure 9.3.

Table 9.5 Overall model for the couple cohesion scale

N	*Measure and suggested cut-off value*	*Value*
1	where p value ≥.05 and	*210.44,p=.000 df=82*
2	(<3)	*2.566*
3	RMSEA (<0.05 for good fit or .05-.08 for adequate fit)	*.073*

Figure 9.3 **CFA for Couple cohesion scale.**

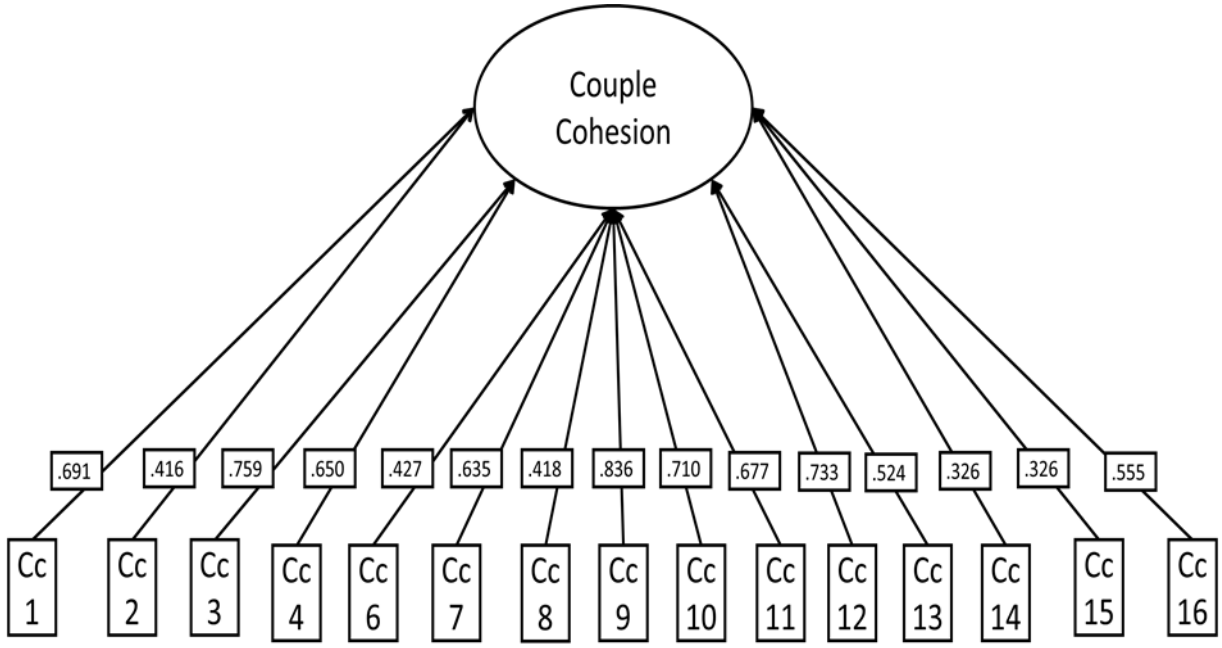


Table 9.6 loading of the items of the couple cohesion scale.

Parameter Estimate	*Unstandrdised*	*Standardized*	*P*
Cc16_N<---Cou_C	1.000	.555	< .01
Cc15_N<---Cou_C	.580	.326	< .01
Cc13_N<---Cou_C	.891	.524	< .01
Cc8_N<---Cou_C	.739	.418	< .01
Cc2_N<---Cou_C	.832	.416	< .01
Cc14<--- Cou_C	.594	.326	< .01
Cc12<--- Cou_C	1.204	.733	< .01

Cc11<---Cou_C	1.027	.677	< .01
Cc10<---Cou_C	1.174	.710	< .01
Cc9<---Cou_C	1.171	.836	< .01
Cc7<---Cou_C	.986	.635	< .01
Cc6<---Cou_C	.767	.427	< .01
Cc4<---Cou_C	1.025	.650	< .01
Cc3<---Cou_C	1.075	.759	< .01
Cc1<---Cou_C	.807	.691	< .01

Cou_C = Couple cohesion

9.3.2.2 CFA model fit for the couple adaptability scale:

This scale consists of fourteen items to measure adaptability between couples only. The SEM was carried out and the results were obtained from 297 married participants in order to examine the overall model fit for the couple adaptability scale. The results showed that $X^2(63)=150.63$, $df=$, $X^2/df=2.39$, and $RMSEA= .069$. Those values indicated a good fit between the model and the observed data. Based on the estimate of the items into latent variables, one item was removed, which was number 12 because it was less than .300. The values are provided in table 9.7. Parameter estimates are presented in Table 9.8 and Figure 9.4.

Table 9.7 Overall model for couple adaptability scale.

N	*Measure and suggested cut-off value*	*Value*
1	where p value ≥.05 and	*150.63,p=.000 df=63*
2	(<3)	*2.39*
3	*RMSEA* (<0.05 for good fit or .05-.08 for adequate fit)	*.069*

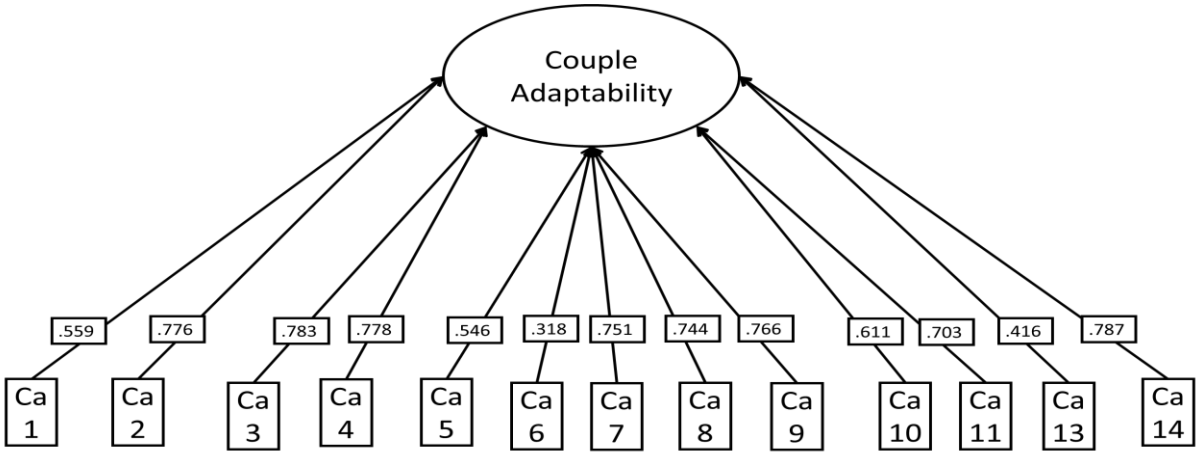
Table 9.8 the loading of the items of the couple adaptability scale.

Parameter Estimate	*Unstandrdised*	*Standardized*	*P*
Ca13_N<---Cup_A	*1.000*	*.416*	< .01
Ca6_N<---Cup_A	*.815*	*.318*	< .01
Ca 14<---Cup_A	*1.539*	*.787*	< .01
Ca11<---Cup_A	*1.385*	*.703*	< .01
Ca10<---Cup_A	*1.324*	*.611*	< .01
Ca9<---Cup_A	*1.366*	*.766*	< .01
Ca8<---Cup_A	*1.277*	*.744*	< .01
Ca7<---Cup_A	*1.552*	*.751*	< .01
Ca5<---Cup_A	*1.252*	*.546*	< .01

Ca4<---Cup_A	*1.529*	*.778*	< .01
Ca3<---Cup_A	*1.511*	*.783*	< .01
Ca2<---Cup_A	*1.375*	*.776*	< .01
Ca1<---Cup_A	*1.220*	*.559*	< .01

Cup_A = Couple Adaptability

Figure 9.4 **CFA for Couple adaptability scale.**



9.3.2.3 Summary:

The results of the Couple scales showed that the scales are appropriate for measuring couple cohesion and adaptability. These scales were conducted only on married participants and the total of couples in the current sample is 297. The next step is to evaluate the rest of the scales for this study, which are psychological well-being and Internet usage.

9.3.3 Psychological well-being scales:

9.3.3.1 CFA model fit of Self Esteem scale:

The first scale for psychological well-being is the self-esteem scale (Rosenberg,1965). It consists of eleven items to measure how people value themselves.

The data came from eleven observed variables, which measure the self-esteem concept. The results showed that $X^2(16) = 47.38$, $X^2/df = 2.96$, and $RMSEA = .067$. These values indicated a good fit between the model and the observed data. Based on the estimate, four items were removed from the scale because they did not meet the requirements for being in the scale. The items were 2,4, and 9, which had $b < .30$. The values are provided in Table 9.9. Parameter estimates are presented in Table 9.10 and Figure 9.5.

Table 9.9 Overall for the self-esteem scale

N	*Measure and suggested cut-off value*	***Value***
1	where p value ≥.05 and	*47.38,p=.000 df=16*
2	(<3)	*2.96*
3	*RMSEA* (<0.05 for good fit or .05-.08 for adequate fit)	*.067*

Figure 9.5 CFA for self-esteem scale.

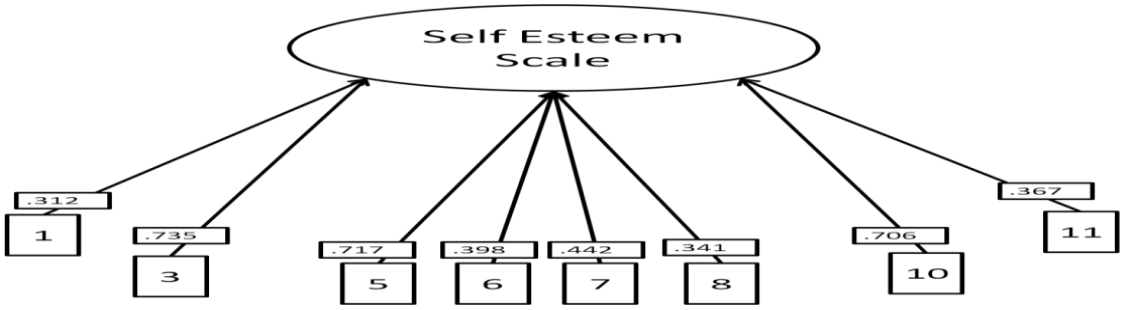


Table 9.10 loading of the items of the Self-Esteem scale.

Parameter Estimate	*Unstandardized*	*Standardized*	*P*
1<---SES	1.000	.312	< .01
4<---SES	1.210	.398	< .01
5<---SES	1.645	.442	< .01
6<---SES	1.352	.367	< .01
1<---SES	3.240	.735	< .01
2<---SES	3.134	.717	< .01
3<---SES	1.819	.341	< .01
5<---SES	2.660	.706	< .01

SES=Self-esteem scale.

9.3.3.2 CFA model fit of Loneliness scale:

The second scale of the psychological well-being is the loneliness scale (Ressell,1982). It consists of twenty items to measure the extent of people's loneliness.

The data came from twenty observed variables which measure the loneliness concept. The results showed that $X^2(123)=361.41$, $X^2/df=2.93$, *and* $RMSEA = .034$. These values indicated a good fit between the model and the observed data; the values are provided in table9.11. Parameter estimates are presented in Table 9.12 and Figure 9.6. Based on the estimate, two items were removed from the scale because they did not meet the requirements for being in the scale. The items were 2, and 4, which had b<.30.

Table 9.11 Overall for the loneliness scale

N	***Measure and suggested cut-off value***	***Value***
1	where p value ≥.05 and	*361.41,p=.000 df=123*
2	(<3)	*2.93*
3	*RMSEA* (<0.05 for good fit or .05-.08 for adequate fit)	*.034*

Figure 9.6 **CFA for Loneliness scale.**

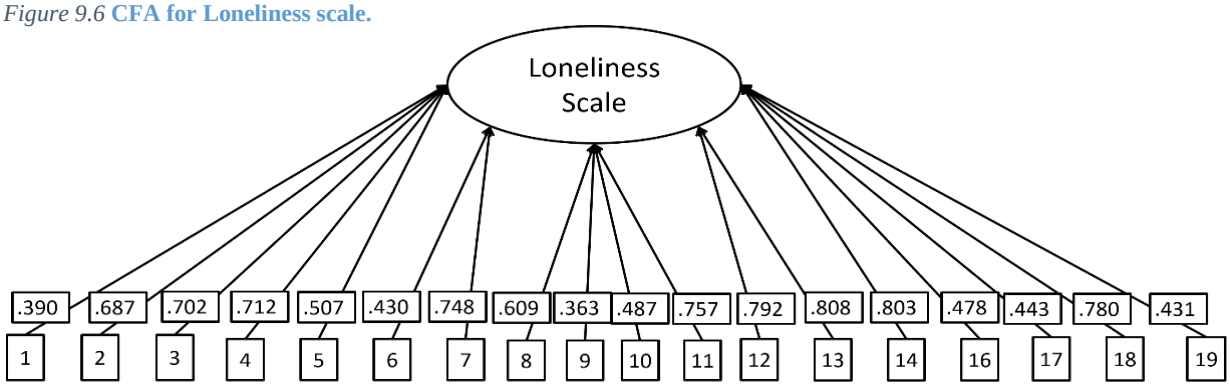


Table 9.12 loading of the items of the loneliness scale.

Parameter Estimate	***Unstandardized***	***Standardized***	*P*
L1O_2<---Lone.1	*1.000*	*.687*	*< .01*
L1O_3<---Lone.1	*1.124*	*.702*	*< .01*
L1O_4<---Lone.1	*1.152*	*.712*	*< .01*
L1O_7<---Lone.1	*1.136*	*.748*	*< .01*
L1O_8<---Lone.1	*.928*	*.609*	*< .01*
L1O_11<---Lone.1	*1.139*	*.757*	*< .01*
L1O_12<---Lone.1	*1.108*	*.792*	*< .01*
L1O_13<---Lone.1	*1.286*	*.808*	*< .01*
L1O_14<---Lone.1	*1.229*	*.803*	*< .01*
L1O_17<---Lone.1	*.704*	*.443*	*< .01*
L1O_18<---Lone.1	*1.147*	*.780*	*< .01*
L2O_1<---Lone.1	*.427*	*.390*	*< .01*
L2O_5<---Lone.1	*.509*	*.507*	*< .01*
L2O_6<---Lone.1	*.500*	*.430*	*< .01*
L2O_9<---Lone.1	*.380*	*.363*	*< .01*
L2O_10<---Lone.1	*.544*	*.487*	*< .01*
L2O_16<---Lone.1	*.583*	*.478*	*< .01*
L2O_19<---Lone.1	*.490*	*.431*	*< .01*

Lone1=Loneliness scale

9.3.3.3 CFA model fit of Life Satisfaction scale:

The third scale of the psychological well-being is the life satisfaction scale(Diener,1985). it consists of five items to measure to what extent people are satisfied generally with their life.

The data came from five observed variables which measure the life satisfaction concept. The result of X^2=*9.51*shows that it is close to being a non-significant *p=.05* in the life satisfaction scale. Furthermore, *RMSEA = .056*. These values indicate a good fit between the model and the observed data. The values are provided in Table 9.13 and parameter estimates are presented in Table 9.14 and Figure 9.7.

Table 9.13 Overall model for the satisfaction with life scale

N	***Measure and suggested cut-off value***	***Value***
1	where p value ≥.05 and	*9.51, p=.051. df= 4*
2	(<3)	
3	*RMSEA* (<0.05 for good fit or .05-.08 for adequate fit)	*.056*

Figure 9.7 **CFA for Satisfaction with life scale.**

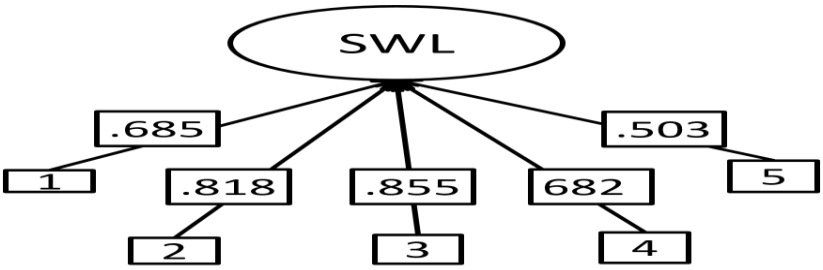


Table 9.14 loading of the items of satisfaction with life scale.

Parameter Estimate	***Unstandardized***	***Standardized***	*P*
Sat.Life.5<---Life_Sat	1.000	.503	< .01
Sat.Life.4<---Life_Sat	.942	.682	< .01
Sat.Life.3<---Life_Sat	1.060	.855	< .01
Sat.Life.2<---Life_Sat	.963	.818	< .01
Sat.Life.1<---Life_Sat	.997	.685	< .01

Life_Sat= Satisfaction with life

9.3.3.4 CFA model fit of Satisfaction with family satisfaction scale:

The last scale of psychological well-being in this study is the family life satisfaction scale. In this scale, the items have been converted to be appropriate for measuring family life. This scale consists of five items measuring to what extent people are satisfied with their family life.

The data came from five observed variables which measure the family satisfaction concept. The result of $X^2=11.10$ shows that it is close to being non-significant at $p=.05$. Furthermore, $RMSEA = .053$. These values indicate a good fit between the model and the observed data. The values are provided in Table 9.15 and parameter estimates are presented in Table 9.16and Figure 9.8.

Table 9.15 Overall model for the satisfaction with family life

N	***Measure and suggested cut-off value***	***Value***
1	where p value ≥.05 and	*11.10,p=.050. df= 5*
2	(<3)	
3	*RMSEA* (<0.05 for good fit or .05-.08 for adequate fit)	*.053*

Figure 9.8 **CFA for Satisfaction with family life scale.**

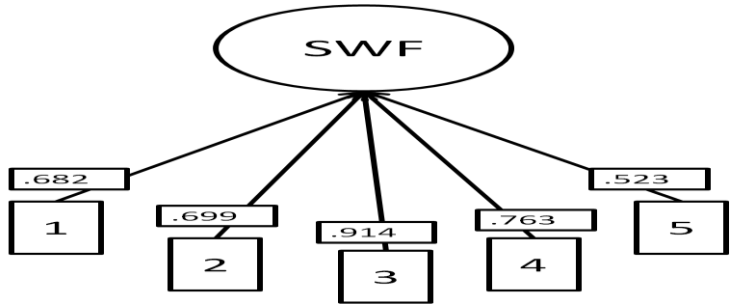


Table 9.16 loading of the items of satisfaction with family life scale.

Parameter Estimate	***Unstandardized***	***Standardized***	*P*
Sat.Fam.5<---Family__Sat	1.000	.523	< .01
Sat.Fam.4<---Family__Sat	.812	.763	< .01
Sat.Fam.3<---Family__Sat	1.166	.914	< .01
Sat.Fam.2<---Family__Sat	.808	.699	< .01
Sat.Fam.1<---Family__Sat	.958	.682	< .01

Family_Sat= Satisfaction with family Life

9.3.4 CFA model fit of Internet Activities scale*:*

There are 12 items which represent activities on the Internet and they loaded in five latent variables based on the Exploratory Factor Analysis, as was mentioned in the previous section. Five latent variables characterised activities online as follows:

9.3.4.1 Searching:

Two observed variables represent the latent variable of searching. The items are surfing and reading online.

9.3.4.2 Pleasure:

Two observed variables represent the latent variable of pleasure, which are listening and watching online.

9.3.4.3 Communication:

Three observed variables represent the latent variable of communication. The items are chatting, discussion, and emailing.

9.3.4.4 Game:

Two observed variables represent the latent variable of game. The items are playing online with friends and playing electronic games without friends.

9.3.4.5 Friendships:

Three observed variables represent the latent variable of friendship. The items are creating new friends online, making comments after watching or listening, and shopping online. All the items were loaded to their latent variables. Thus, no items were removed.

Before carrying out the Confirmatory Factor Analysis (CFA) in on the Internet scale, the Expletory Factor Analysis (EFA) carried out and the results suggested that instead of two aspects of Internet usage social and non-social activities as showed in the pilot study (chapter six) to be six different type of online activities using the main sample. The results also showed that two items which are *downloading a programme and voting online* from the scale were removed because they did not load in the factors then the CFA was conducted. The data came from twelve observed variables, which measure five unobserved variables: search, pleasure, communication, game and friendships concepts. The results show that $X^2(33)=77.46$, $X^2/df=2.34$, and $RMSEA = .056$. These values indicate a good fit between the model and the observed data. The values are provided in table 9.17 and parameter estimates are presented in Table 9.18 and Figure 9.9.

Table 9.17 Overall for the Internet activities scale

N	***Measure and suggested cut-off value***	***Value***
1	where p value ≥.05 and	*77.46, p=.000. df=33*
2	(<3)	*2.34*
3	*RMSEA* (<0.05 for good fit or .05-.08 for adequate fit)	*.056*

Figure 9.9 **CFA for Internet activities scale**

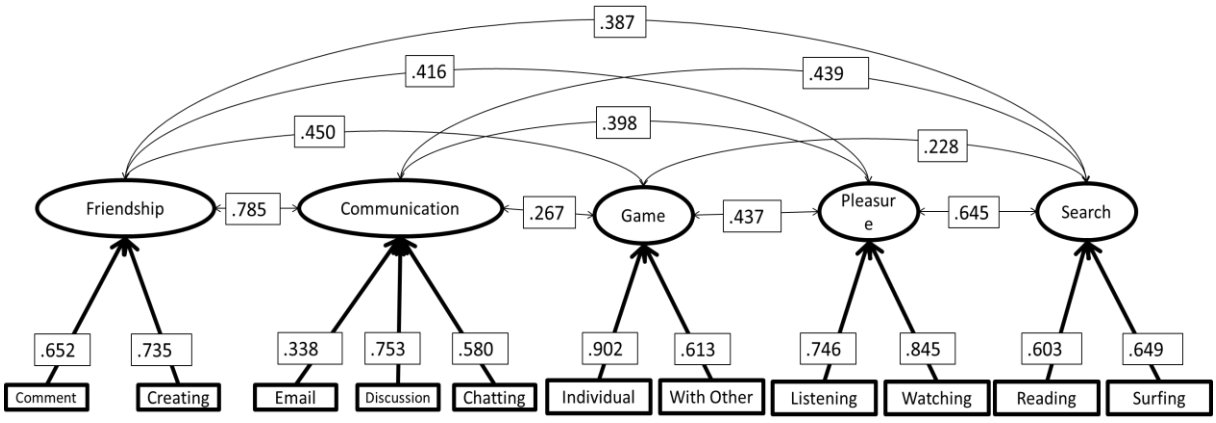


Table 9.18 loading of the items of the online activities scale.

Parameters Estimates	*Unstandardized*	*Standardized*	*P*
Surfing Online<---Search	*1.000*	*.649*	< .01
Reading Online<---Search	*1.994*	*.603*	< .01
Listening Online<---Pleasure	*1.000*	*.845*	< .01
Watching Online<---Pleasure	*.929*	*.746*	< .01

Chatting online<---Communication	*1.000*	*.580*	< .01
Discussion online<---Communication	*1.564*	*.753*	< .01
Email<---Communication	*.804*	*.338*	< .01
playing_online_with Friends<---Game	*1.000*	*.613*	< .01
Playing online <---Game	*1.631*	*.902*	< .01
Creating friends online<---Friendships	*1.000*	*.735*	< .01
Comments<---Friendships	*.768*	*.652*	< .01

The results showed that the scale which measure the online activities under this study has a good model fit and the observed variables loaded significantly in each latent variable. However, the shop online activity has not satisfactoril loaded in any latent variables in this scale. Consequently, the shopping online activity is used in the main model as an observed variable.

9.3.5 The model fit of the time spent online:

In the present study there are 24 items, which measure the time spent online weekdays and at weekends. These items were loaded in seven latent variables as follows:

9.3.5.1 Time in general:

This variable is to measure time in general, regardless of the online usage at different times (weekdays /weekends).

9.3.5.2 Time for research:

This variable is to measure the time spent on two types of activities, which are surfing and reading online at different times (weekdays/weekends)

9.3.5.3 Pleasure:

This variable is to measure the time spent on listening and watching online at two different times (weekdays/weekends).

9.3.5.4 Communication:

This variable is to measure the time spent on the Internet for chatting with others and having discussions at two different times (weekdays/ weekends).

9.3.5.5 Game:

This variable is to measure the time spent online on playing games with other people at two different times (weekdays/weekends).

9.3.5.6 Friendships:

This variable is to measure the time spent online on making comments after watching, listening or reading, and creating new friends online at two different times (weekdays/weekends).

9.3.5.7 Shopping:

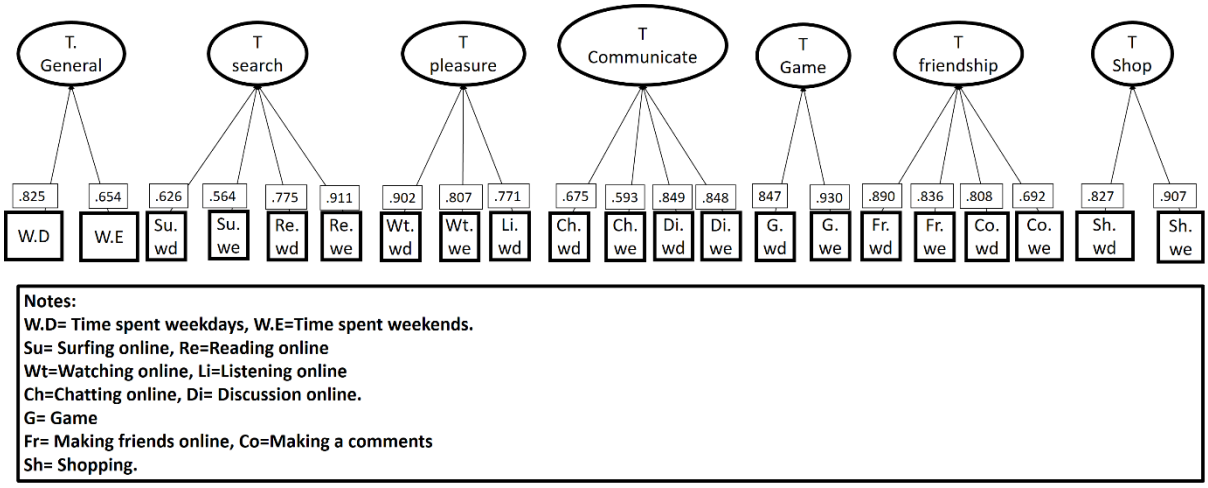
This variable is to measure the time spent online on shopping to buy various items at two different times (weekdays/weekends).

The data came from twenty-four observed variables, which measure seven unobserved variables, as described above. The results show that $X^2(141)=334.30$, $X^2/df=2.37$, *and RMSEA = .056*. These values indicate a good fit between the model and the observed data. The values are provided in table 9.19 and parameter estimates are presented in Table 9.20 and Figure 15.

Table 9.19 Overall model for the time spent online scale.

N	***Measure and suggested cut-off value***	***Value***
1	where p value ≥.05 and	*334.30,p=.000. df=141*
2	(<3)	*2.37*
3	*RMSEA* (<0.05 for good fit or .05-.08 for adequate fit)	*.056*

Figure 9.10 CFA **for time spent on Internet activities scale**



Notes:
W.D= Time spent weekdays, W.E=Time spent weekends.
Su= Surfing online, Re=Reading online
Wt=Watching online, Li=Listening online
Ch=Chatting online, Di= Discussion online.
G= Game
Fr= Making friends online, Co=Making a comments
Sh= Shopping.

Table 9.20 loading of the items of the time spent online scale.

Parameter Estimate	*Unstandardized*	*Standardized*	*P*
G_Weekdays_C<---Time.G	*1.000*	*.825*	< .01
G_Weekends_C<---Time.G	*.745*	*.654*	< .01
Sur.W.D<---Search	*1.000*	*.626*	< .01
Sur.W.E<---Search	*.840*	*.564*	< .01
Rea.W.D<---Search	*1.116*	*.775*	< .01
Rea.W.E<---Search	*1.212*	*.911*	< .01
Wac.W.D<---Pleasure	*1.000*	*.902*	< .01
Wac.W.E<---Pleasure	*.857*	*.807*	< .01
Lis.W.D<---Pleasure	*.790*	*.771*	< .01
Ch.W.D<---Communi	*1.000*	*.675*	< .01
Ch.W.E<---Communi	*.769*	*.593*	< .01
Dis.W.D<---Communi	*.975*	*.849*	< .01
Dis.W.E<---Communi	*.927*	*.848*	< .01
G.W.D<---Game	*1.000*	*.847*	< .01
G.W.E<---Game	*1.032*	*.930*	< .01
Fr.W.D<---Friendship	*1.000*	*.890*	< .01
Fr.W.E<---Friendship	*.940*	*.836*	< .01
Com.W.D<---Friendship	*.870*	*.808*	< .01
Com.W.E<---Friendship	*.700*	*.692*	< .01
Sh.W.D<---Shopping	*1.000*	*.827*	< .01

The aim of this section was to check the requirements for doing the SEM. This section started with the preparation for the data in terms of missing data and the normality distribution. The results showed that there was no missing data and in terms of the normality distribution, the results also indicated that the data for all the items of the scales were in the range of the normality distribution, based on the results of the Skewness and Kurtosis tests .The third important step before starting to use the SEM was to examine the loading of each item on its latent variables by using the CFA technique. The results showed that some items were

removed from the scale, especially from the two scales of family system, couple scales, and from two scales of psychological well-being, self-esteem and loneliness because they did not meet the criteria to remain in the scale. The results also showed good overall model fit of the scales, especially in satisfaction with life (SWL), and satisfaction with family life (SWF). The Chi-square statistic is close to being a non-significant p=.05, which suggests that there a resendable between the hypothesis proposed and the data set. Moreover, the rest of the scales also showed good model fit indices, and the RMR was within range for all of the scales, between .02 and .06, while the cut-of-score should be less than < .10, and for the RMSEA the value range was between .03 to .07. From the above results, the requirements for doing the SEM, in terms of preparing data and evaluating the scales of the current study, were achieved. This section is followed by doing the structural equation modelling in order to examine the relationships among the latent variables. The next section shows the output of several models which represent the hypothesises of the current study.

10. Chapter Ten: Examine the Models.

10.1 Introduction:

This chapter presents the models that were established in order to investigate to what extent the Internet affects the family system and psychological well-being variables by using the Structural Equation Modelling SEM technique.

By using the SEM, it can also be investigating the family and couple functioning as a mediation variable between Internet use and psychological well-being. This model is being developed by the current work see figure (10.1). It examines whether or not that the direct impact of the Internet usage on well-being disappears or decreases when the family and couple functioning mediate the impact of Internet usage on well-being.

The main difference between moderator and mediator is that in the moderator the independent variable must not predict the moderator variable or the relationships between variables should not be found, while in the mediator the independent variable must predict the mediator variable. For instance, Internet as independent variable and its impact on well-being as dependent variable. When we add a gender variable between the independent and dependent variables it will be called a moderator variable because the Internet cannot predict the gender. However, if we investigate the impact of the Internet on the well-being and family functioning was added between these variables, it will be called mediator variable because the Internet can predict the family functioning. In other words, mediation means the variables can related to each other while moderator cannot (Field,2013). Thus, the causal direction in the current study starts from the Internet usage and its impact on family functioning and then the effect of family on well-being.

The models can be divided into two groups models. The first two models are to investigate the effect of the Internet use on well-being variables through the family functioning. Models number 1, and 2 present this way of investigation beginning from the Internet then family system and ending with the well-being variables. While the second two models is to investigate the effect of Internet usage on well-being through the couple functioning. Models number 3, and 4. The four models are listed as follow:

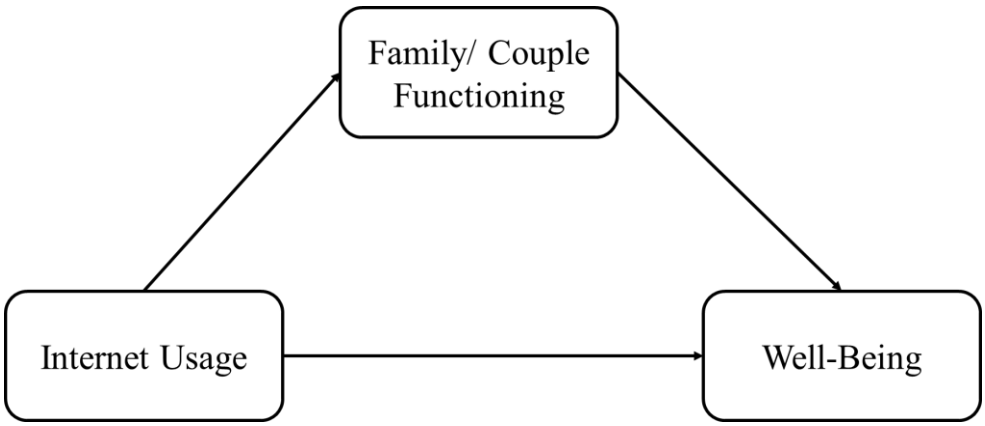
Model number one in Figure 10.2 examines the impact of online activities on family functioning and individual psychological well-being.

Model number two in Figure 10.3 examines the impact of time spent on online activities on family functioning and psychological well-being.

Model number three in Figure 10.4 examines the impact of online activities on couple functioning and individual psychological well-being.

Model number four in Figure 10.5 examines the impact of time spent on online activities on couple functioning and psychological well-being.

Figure 10.1 Main model of the study.



10.2 Study aim:

The aim of this study is to examine the following hypothesises:

a. H.1.1 There will be an impact of online activities and time spent on family functioning.
    i. **H.1.1.1** There will be a positive impact of search online and time on family functioning.
    ii. **H.1.1.2** There will be a negative impact of pleasure online and time spent on family functioning.
    iii. **H.1.1.3** There will be a positive impact of communication online and time spent on family functioning.
    iv. **H.1.1.4** There will be a negative impact of friendships online and time spent on family functioning.
    v. **H.1.1.5** There will be a negative impact of game online and time spent on family functioning.
    vi. **H.1.1.6** There will be a positive impact of shopping online and time spent on family functioning.
b. **H.1.2** There will be an impact of online activities and time spent on couple functioning.
    i. **H.1.2.1** There will be a positive impact of search online and time spent on couple functioning.
    ii. **H.1.2.2** There will be a negative impact of pleasure online and time spent on couple functioning.
    iii. **H.1.2.3** There will be a positive impact of communication online and time spent on couple functioning.

iv. **H.1.2.4** There will be a negative impact of friendships online on and time spent couple functioning.

v. **H.1.2.5** There will be a negative impact of game online and time spent on couple functioning.

vi. **H.1.2.6** There will be a positive impact of shopping online and time spent on couple functioning.

c. **H.1.3** There will be an impact of online activities and time spent on the psychological well-being.

i. **H.1.3.1** There will be a negative impact of search online and time spent on loneliness. While positive impact on self-esteem, satisfaction with life and family life.

ii. **H.1.3.2** There will be a positive impact of pleasure online and time spent on loneliness. While negative impact on self-esteem, satisfaction with life and family life.

iii. **H.1.3.3** There will be a negative impact of communication online and time spent on loneliness. While positive impact on self-esteem, satisfaction with life and family life.

iv. **H.1.3.4** There will be a positive impact of friendships online and time spent on loneliness. While negative impact on self-esteem, satisfaction with life and family life.

v. **H.1.3.5** There will be a positive impact of game online and time spent on loneliness. While negative impact on self-esteem, satisfaction with life and family life.

vi. **H.1.3.6** There will be a negative impact of shopping online and time spent on loneliness. While positive impact on self-esteem, satisfaction with life and family life.

d. **H.1.4**: There will be more impact of online activities and time spent on psychological well-being through family functioning.

e. **H.1.5:** There will be more impact of online activities and time spent on psychological well-being through couple functioning.

f. **H.**1.6: There will be an impact of family and couple functioning on psychological well-being.

   i. **H.**1.6.1: There will be a positive impact of family and couple functioning on self-esteem.

   ii. **H.**1.6.2: There will be a negative impact of the family and couple functioning on loneliness.

   iii. **H.**1.6.3: There will be a positive impact of family and couple functioning on satisfaction with family life.

   iv. **H.**1.6.4: There will be a positive impact of family and couple functioning on satisfaction with life.

10.3 Family Models:

10.3.1 Model one: Internet Activities, Family Functioning, and Psychological well-being.

The aim of the family models was to examine the impact of Internet usage on family functioning and well-being. The structural equation modelling was run in order to examine the overall fit of the SEM. The model included seventy-three observed variables, which represented ten latent variables: search online; pleasure online; communication online; game online; friendships online; shopping online family functioning; self-esteem, loneliness; family satisfaction; and life satisfaction. The results show good overall model fit, the values being $X^2(1099) = 2074.761$, $p=0.005$, $X^2/df=1.888$, and $RMSEA= 0.045$. The result is provided in Table 10.1.

Table 10.1 the overall models of model one.

	Measure and suggested cut-off value	*Value*
1	where p value ≥.05 and	*2074.761; p=005;*
2	(<3)	*1.888*
3	*RMSEA* (<0.05 for good fit or .05-.08 for adequate fit)	*0.045*

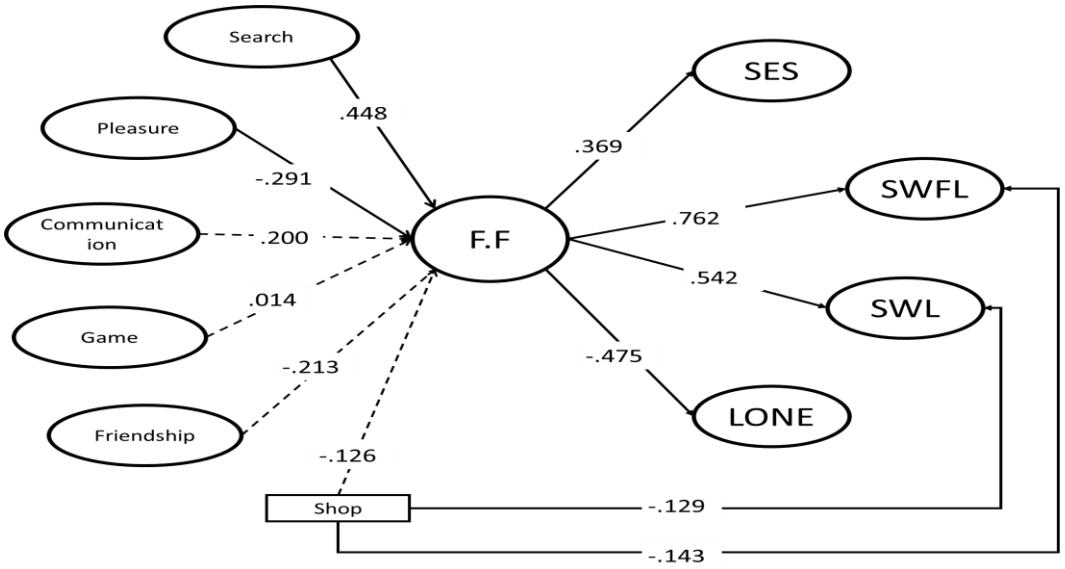
10.3.1.1 *The Examination of the regression path of the online activities on* family functioning and psychological well-being:

After the acceptable results of the overall model fit, now it was necessary to investigate the relationships among the model's variables. We expected that online activities can affect family functioning and psychological well-being variables. The results show that some online activities have different impacts on family cohesion. According to the results, using the internet for searching online affects positively family functioning and the estimates for the search is $\beta = 0.448$, $p<.05$. However, using the internet for pleasure (watching and listening) has a negative effect on family functioning and the estimate was $\beta = -0.291$, $p<.05$.

in addition, the results show that shopping online has a significantly positively direct impact on both of the following factors; Satisfaction with life and Satisfaction with family life, and the estimates were β *=0.192, and .143 p<.05*. However, the results indicated that there was no other direct impact of online activities on the other psychological well-being variables.

In term of the impact of the family functioning on psychological well-being, the results showed that the family functioning increased the following well-being variables; self-esteem, satisfaction with life and with family life β *=0.369,0.542, and 0.762 p<.005* respectively. Whereas, it decreased the level of the loneliness by β *=-0.475,p<.005*. The results are provided in Table 10.2 and Figure 10.2.

Figure10.2 Model one; internet activities on family functioning and PWB



Note:
F.F: Family Functioning **SES:** Self-Esteem, **SWFL**: Satisfaction with family life, **SWL:** Satisfaction with Life, and **LONE:** Loneliness

Table 10.2 Results of the path analysis model one.

Parameters Estimate		*Predictors Variables*	*Unstandardized*	*Standardized*	*P*
Family Functioning	<-	Search	7.240	.448	.027
Family Functioning	<-	Pleasure	-1.982	-.291	.032
Family Functioning	<-	Communication	2.336	.200	.316
Family Functioning	<-	Game	.133	.014	.869
Family Functioning	<-	Friendship	-1.544	-.213	.254
Family Functioning	<-	Shopping	-.631	-.126	.189
	<-				
SES	<-	Family Functioning	.012	.369	***
Lone.1	<-	Family Functioning	-.044	-.475	***
Satisfaction with life	<-	Family Functioning	.073	.542	***
Satisfaction with Family life	<-	Family Functioning	.103	.762	***
	<-				
Self-Esteem	<-	Search	.153	.296	.130
Self-Esteem	<-	Pleasure	-.021	-.098	.448
Self-Esteem	<-	Communication	-.002	-.005	.979
Self-Esteem	<-	Game	-.039	-.127	.114
Self-Esteem	<-	Friendship	-.039	-.169	.339
Self-Esteem	<-	Shopping	-.017	-.108	.238
Loneliness	<-	Search	-.064	-.043	.786
Loneliness	<-	Pleasure	.084	.134	.224
Loneliness	<-	Communication	-.145	-.135	.416
Loneliness	<-	Game	.023	.026	.700
Loneliness	<-	Friendship	.117	.175	.264
Loneliness	<-	Shopping	-.013	-.027	.722
	<-				
Satisfaction with Life	<-	Search	-.299	-.137	.403
Satisfaction with Life	<-	Pleasure	-.132	-.144	.200
Satisfaction with Life	<-	Communication	.091	.058	.726
Satisfaction with Life	<-	Game	.009	.007	.920
Satisfaction with Life	<-	Friendship	-.016	-.017	.914
Satisfaction with Life	<-	Shopping	.129	.192	.016
	<-				
Satisfaction with Family Life	<-	Search	-.410	-.188	.217
Satisfaction with Family Life	<-	Pleasure	.017	.019	.857
Satisfaction with Family Life	<-	Communication	-.237	-.151	.331
Satisfaction with Family Life	<-	Game	-.066	-.051	.424
Satisfaction with Family Life	<-	Friendship	.198	.202	.170
Satisfaction with Family Life	<-	Shopping	.097	.143	.050

The first model examined to what extent online activities affect family functioning and psychological well-being. The results support the hypothesis that internet activities have an impact on family functioning and psychological well-being. For instance, in this model searching online has a positive impact on family functioning, while using the internet for pleasure, such as listening or watching, decrease the level of family functioning. Also, from the results it was found that there is a direct effect of online activities on satisfaction with life and family life especially shopping online. On the other hand, no direct impact of the online activities on the loneliness, satisfaction with family life, and satisfaction with life.

10.3.2 Model two: The impact of time spent online on family functioning, and psychological well-being:

This model investigated the impact of time spent online on family functioning and psychological well-being. Structural equation modelling was employed and the model included eighty-three observed variables which represent twelve latent variables: time spent generally; pleasure; search; communication; games; friendships; shopping; family functioning; self-esteem; loneliness; family satisfaction; and life satisfaction. The results showed a good model fit and the values of the fit indices were $X^2(1545) = 2803.226$, $p = 0.000$, $X^2/df = 1.814$, *and RMSEA= 043*. The result shows a good fit of the estimate model of 1.601 and the results are provided in Table 10.3.

Table 10.3 Overall models of model three.

	Measure and suggested cut-off value	*Value*
1	where p value ≥.05 and	2803.226; p=000;
2	(<3)	1.814
3	RMSEA (<0.05 for good fit or .05-.08 for adequate fit)	0.043

10.3.2.1 The Examination of the regression path of the time spent online on family functioning and psychological well-being:

After the acceptable results of the overall model fit, the next step was to investigate the effect of the second aspect of internet usage on the family functioning and psychological well-being. The hypothesis suggested that time spent online will affect family functioning and psychological well-being. The results indicated that the time spent online has different impact on family functioning depend on the online activities that users spent time on. It was found that the time spent on search online increases the level of family functioning by $\beta=0.248, p<.05$. In contrast, the time spent on pleasure online such as watching and listening online decrease the level of family functioning, the estimate $\beta=-0.253, p<.05$, and similarly $\beta=-0.238, p<.05$ for the time spent on creating new friendships. Also, the results indicate that there is a direct impact of spent time on online activities. It is found that the time spent in general increases the self-esteem by $\beta=0.277, p<.05$. Also, time spent on gaming online has positively impacted loneliness $\beta=0.141, p<.05$. However, time on game online associated negatively with satisfaction with family life $\beta=-0.131, P<.05$, and self-esteem $\beta=-0.141, P<.05$.

In term of the effect of family functioning on individual psychological well-being variables, the results showed that the family functioning has a positive impact on self-esteem $\beta=.439$, $P<.0005$, on family satisfaction $\beta=.718, p<.0005$, on life satisfaction $\beta=.512, p<.0005$. While it decreases the level of loneliness by $\beta=.-.493, P<.0005$. The results are provided in Table 10.4.

Figure 10.3 Model three; time spent on internet on family Functioning and PWB.

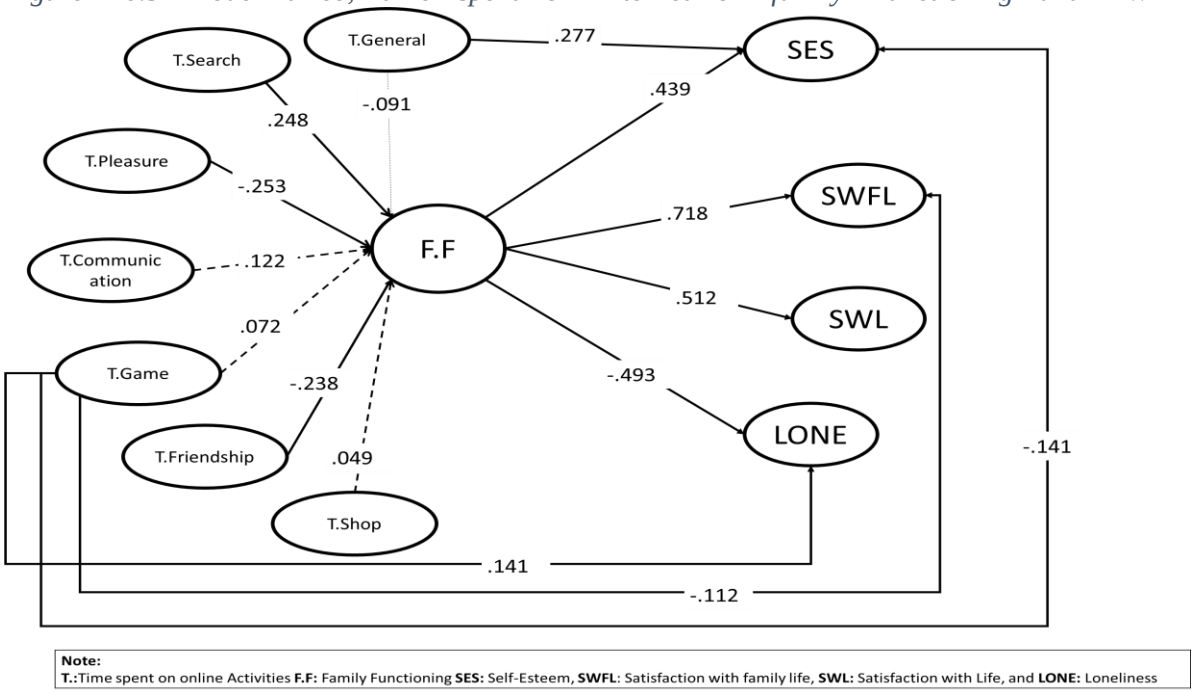


Table 10.4 path analysis model two.

Parameters	*Estimate*	*Predictors Variables*	*Unstandardized*	*Standardized*	*P*
Family Functioning	<-	Time General	-.579	-.091	.314
Family Functioning	<-	Search	2.550	.248	.022
Family Functioning	<-	Pleasure	-1.847	-.253	.026
Family Functioning	<-	Communication	.909	.122	.230
Family Functioning	<-	Game	.596	.072	.298
Family Functioning	<-	Friendship	-2.501	-.238	.008
Family Functioning	<-	Shopping	.493	.049	.582
Self-Esteem	<-	Family Functioning	.014	.439	***
Loneliness	<-	Family Functioning	-.043	-.493	***
Satisfaction with Life	<-	Family Functioning	.064	.512	***
Satisfaction with Family Life	<-	Family Functioning	.091	.718	***
Self-Esteem	<-	Time General	.054	.277	.006
Self-Esteem	<-	Search	-.004	-.013	.903
Self-Esteem	<-	Pleasure	-.005	-.023	.839
Self-Esteem	<-	Communication	-.021	-.092	.362
Self-Esteem	<-	Game	-.036	-.141	.042
Self-Esteem	<-	Friendship	-.046	-.141	.117
Self-Esteem	<-	Shopping	.005	.017	.848
Loneliness	<-	Time General	-.061	-.109	.162
Loneliness	<-	Search	-.024	-.027	.772
Loneliness	<-	Pleasure	.065	.101	.303
Loneliness	<-	Communication	.005	.008	.925
Loneliness	<-	Game	.103	.141	.018

Loneliness	<-	Friendship	.055	.060	.440
Loneliness	<-	Shopping	-.021	-.024	.757
Satisfaction with Life	<-	Time General	-.018	-.022	.784
Satisfaction with Life	<-	Search	.019	.015	.875
Satisfaction with Life	<-	Pleasure	-.121	-.132	.198
Satisfaction with Life	<-	Communication	.015	.016	.858
Satisfaction with Life	<-	Game	-.114	-.109	.079
Satisfaction with Life	<-	Friendship	-.012	-.009	.908
Satisfaction with Life	<-	Shopping	.177	.141	.080
Satisfaction with Family Life	<-	Time General	-.009	-.012	.868
Satisfaction with Family Life	<-	Search	-.022	-.017	.843
Satisfaction with Family Life	<-	Pleasure	.026	.028	.753
Satisfaction with Family Life	<-	Communication	.002	.002	.978
Satisfaction with Family Life	<-	Game	-.117	-.112	.042
Satisfaction with Family Life	<-	Friendship	.087	.065	.361
Satisfaction with Family Life	<-	Shopping	.005	.004	.954

In the second model, we examined to what extent the time spent online as the second aspect of the internet use impacts the family functioning and psychological well-being. the results indicate that the time spent on searching can increase the family functioning, while time spent on pleasure and friendships decrease the level of family cohesion. Also, the results showed that the time spent on online especially on game can decrease the psychological well-being such as satisfaction with life, family life satisfaction and self-esteem. Moreover, the time spent on game can increase the feeling of loneliness.

10.3.3 Summary:

The results of the two previous models of the Internet (activities, and time spent), family functioning, and well-being shown good model fit in overall. The main hypothesis H.1.1 which suggested that the Internet can predict the family functioning and well-being. In terms of the sub-hypothesises, it was found that the hypothesis H.1.1.1that suggested a positive impact of search online and time spent on family was supported, and H1.1.2 that suggested

the negative impact of pleasure online and time on family functioning was also supported. While it was found that time spent on friendships online predict the family functioning negatively which support the hypothesis H.1.1.4. However, the rest of hypothesises not supported by results.

In terms of the direct impact of the online activities and time spent on them, the results showed that shopping as an online activity has a positive impact on satisfaction with life and family life which supported the hypothesises H.1.3.6. Moreover, the hypothesis of the impact of time spent on game H.1.3.5 that suggested the negative impact on self-esteem and satisfaction with family life and positive impact on loneliness, it was supported by the results. Furthermore, the hypothesis H.1.3.1 that predicted the positive impact on well-being except loneliness was supported by the result especially with self-esteem.

From the results of the couple models, the family functioning is work as a full mediation or partly mediation variable between Internet usage and well-being. This result supported H.1.4 hypothesis which suggested that the Internet can be more effective on well-being through the couple functioning.

Finally, the hypothesises of the impact of the family functioning on the psychological well-being represented by H.1.6.1 to H.1.6.4 were supported by the results. The results showed that the couple functioning predicted positively self-esteem, satisfaction with family life and satisfaction with life, while predicted negatively loneliness.

10.4 Couple Models:

The previous models were derived from the whole sample and focused on all the sample, regardless of age and status. The next two models concentrate on the sample who are married only. The reason for this is that relationships between couples differ from the relationship among family members. Consequently, Olson (1983) developed another version of the FACES scale to measure the cohesion and adaptability between couples. The results of the next models were obtained from 297 married participants, and we hypothesize that two aspects of internet (online activities & time spent online) have an impact on couple cohesion and adaptability.

10.4.1 Model Three: Online activities, couple Functioning, and psychological well-being.

This model is to examine the impact of using online activities on couple functioning and psychological well-being, by using structural equation modelling. This model includes seventy-six observed variables, which represent ten latent variables, five online activities, Search, Pleasure, Communication, Game, Friendships, one observed variable measure the shopping online, couple functioning, and three individual well-being, self-esteem, loneliness, Satisfaction with life and satisfaction with family life variables. The results show a good model fit and the values of the fit indices are $X^2(1099) = 1710.244$, $p<0.005$, $X^2/df = 1.556$, and $RMSEA = 0.043$. The results are provided in Table 10.5.

Table 10.5 Overall model fit for model five.

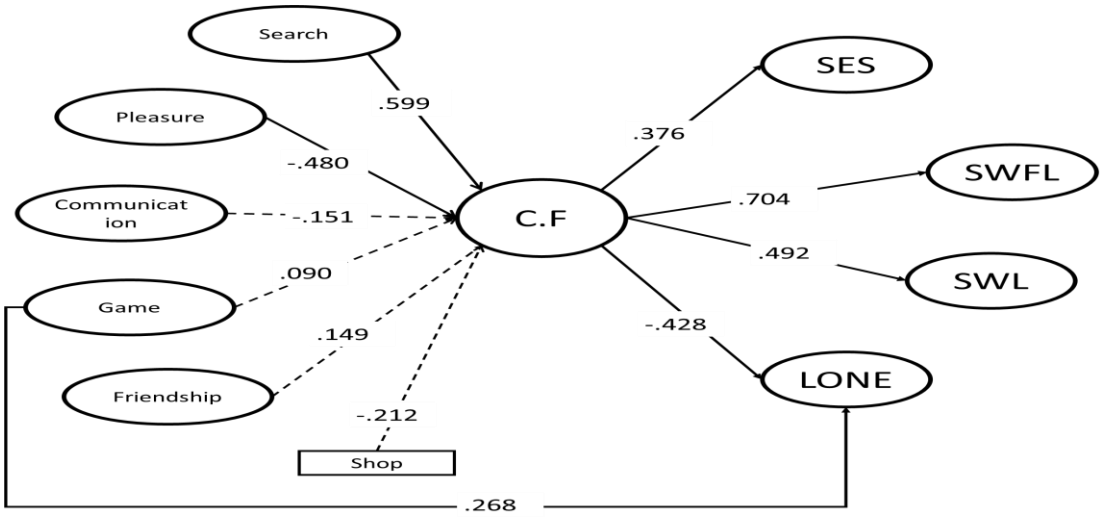
N	*Measure and suggested cut-off value*	*Value*
1	where p value ≥.05 and	1710.244; p<005;
2	(<3)	1.556
3	RMSEA (<0.05 for good fit or .05-.08 for adequate fit)	0.043

10.4.1.1 The Examination of the regression path of the online activities on couple functioning and psychological well-being:

After examine the overall fit for the model, we moved to check the impact of each online activity on couple cohesion. The results showed that the level of couple functioning is increased by using search online by $\beta=0.599$, $p<.05$. However, using the internet for pleasure decrease the couple functioning by$\beta=-0.480$, $p<.05$. In term of the direct impact of the online activities on well-being, however, only one activity which is game online has increased significantly the loneliness by $\beta=0.268$, $p<.05$.

In term of the impact of the couple functioning on psychological well-being variables, the results show that self-esteem was explained by couple cohesion by $\beta=0.260$, $p<.005$, Family satisfaction $\beta=0.704$, $p<.005$, and satisfaction with life $\beta=0.492$, $p<.005$. However, the couple functioning decreases the level of loneliness by $\beta=-0.428$, $p<.005$. Also, the results are provided in Table 10.6 and Figure 10.4.

Figure 10.4 Model five; internet activities on couple cohesion and PWB.



Note:
C.F: Couple Functioning **SES:** Self-Esteem, **SWFL**: Satisfaction with family life, **SWL:** Satisfaction with Life, and **LONE:** Loneliness

Table 10.6 path analysis for model three.

Parameters *Estimate*		*Predictors Variables*	*Unstandardized*	*Standardized*	*P*
Couple Functioning	<-	Search	13.482	.599	.028
Couple Functioning	<-	Pleasure	-4.154	-.480	.009
Couple Functioning	<-	Communication	-2.030	-.151	.563
Couple Functioning	<-	Game	1.252	.090	.453
Couple Functioning	<-	Friendship	1.508	.149	.540
Couple Functioning	<-	Shopping	-1.391	-.212	.089
Self-Esteem	<-	Couple Functioning	.010	.376	***
Loneliness	<-	Couple Functioning	-.030	-.428	***
Satisfaction with Family life	<-	Couple Functioning	.064	.704	***
Satisfaction with Life	<-	Couple Functioning	.043	.492	***
Self-Esteem	<-	Search	.154	.260	.292
Self-Esteem	<-	Pleasure	-.033	-.144	.404
Self-Esteem	<-	Communication	.020	.057	.811
Self-Esteem	<-	Game	-.028	-.076	.491
Self-Esteem	<-	Friendship	-.038	-.143	.525
Self-Esteem	<-	Shopping	-.029	-.167	.147
Loneliness	<-	Search	.253	.161	.468
Loneliness	<-	Pleasure	-.048	-.080	.610
Loneliness	<-	Communication	-.115	-.123	.572
Loneliness	<-	Game	.259	.268	.011
Loneliness	<-	Friendship	.035	.049	.811
Loneliness	<-	Shopping	-.010	-.022	.829
Satisfaction with Family life	<-	Search	-.235	-.116	.546
Satisfaction with Family life	<-	Pleasure	.080	.102	.456
Satisfaction with Family life	<-	Communication	-.136	-.113	.558
Satisfaction with Family life	<-	Game	-.166	-.133	.143
Satisfaction with Family life	<-	Friendship	.136	.149	.417
Satisfaction with Family life	<-	Shopping	-.004	-.007	.933
Satisfaction with Life	<-	Search	-.062	-.031	.884
Satisfaction with Life	<-	Pleasure	-.147	-.194	.208
Satisfaction with Life	<-	Communication	.257	.218	.323
Satisfaction with Life	<-	Game	.016	.013	.895
Satisfaction with Life	<-	Friendship	-.150	-.169	.418
Satisfaction with Life	<-	Shopping	.016	.027	.783

This model was designed in order to examine the impact of the online activities on the couple cohesion and psychological well-being. The results showed that the internet online activities can affect the couple cohesion but in different way based on the type of activity. As showed in the results of the family models the using internet for search always positively, it impacts

the couple cohesion. While using the internet for pleasure can impact the couple cohesion negatively.

10.4.2 Model Four: the time spent online, Couple functioning and psychological well-being.

This model investigates the influences of spending time online on couple functioning and psychological well-being. The model consists of eighty-five observed variables, which represent twelve latent variables. Seven latent variables describe the time spent online and its impact on couple functioning: in general, search, pleasure, communications, game, friendships, and shopping online. Four relate to well-being: self-esteem, loneliness, satisfaction with family life, and satisfaction with life. The results show a good model fit and the values of the fit indices are $X^2(1542) = 2375.698$, $X^2/df = 1.541$, $p < 0.005$, $RMSEA = 0.043$. The results are provided in table 10.7.

Table 10.7 Overall model fit for model seven.

	Measure and suggested cut-off value	*Value*
1	where p value ≥.05 and	2375.698; p=000;
2	(<3)	1.541
3	RMSEA (<0.05 for good fit or .05-.08 for adequate fit)	0.043

10.4.2.1 The Examination of the regression path of the time spent online on couple functioning and psychological well-being:

The results show that the level couple functioning is affected positively by the time spent on searching online $\beta=0.372$, $p<.05$, while the time spent on pleasure online has a negative impact on couple cohesion by $\beta=-0.377$, $p<.05$. In terms of the direct impact of spending time online on psychological well-being, the results indicate that the time spent generally on the internet increases self-esteem $\beta=0.264$,$P<.05$. Also, time spending on game online

increase level of loneliness by $\beta=0.301$, $p<.005$. However, time on gaming online decreases the satisfaction with family life $\beta=-0.167$, $p<.05$, and satisfaction with life by $\beta=-0.192$, $P<.05$.

In term of the impact of the couple functioning on well-being, the results showed that the couple functioning increased the level of following variables, self-esteem, family satisfaction, and satisfaction with life $\beta=0.414,.0.694$, and $0,506$, $P<.005$ respectively, while it decreases the level of being lonely by $\beta=-0.414, p<.005$. The results are provided in Table 10.8 and Figure 10.5.

Figure 10.5 Model seven; time spent on internet activities on couple cohesion and PWB.

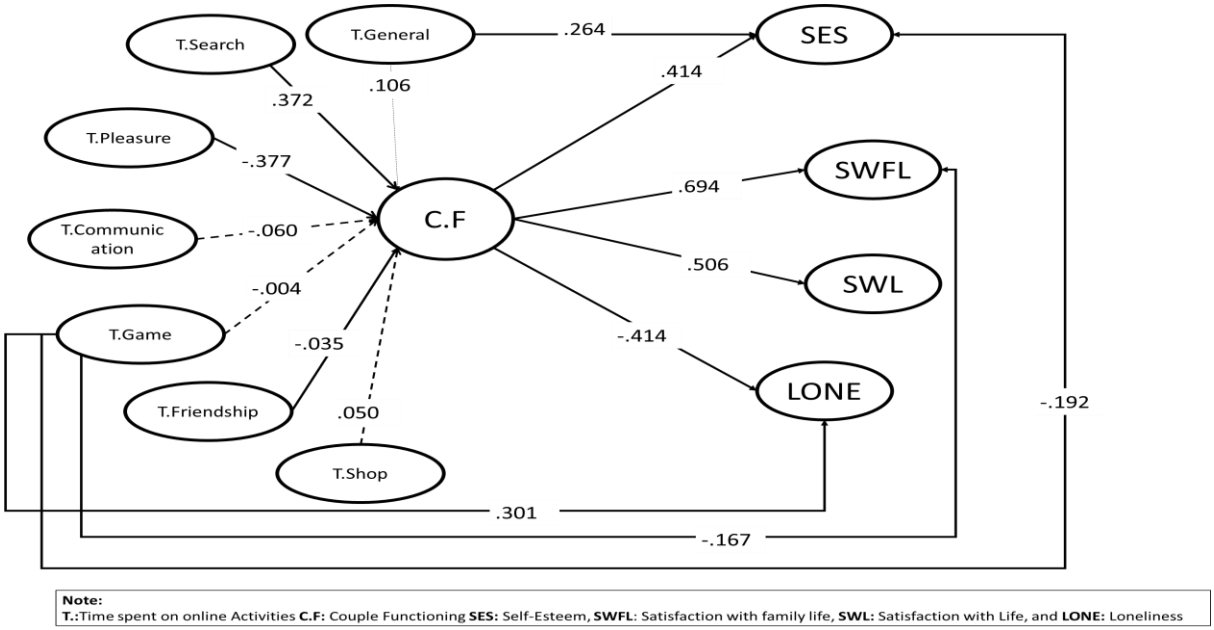


Table 10.8 Path analysis for model four.

Parameters Estimate		*Predictors Variables*	*Estimate*	*Standardised*	*P*
Couple Functioning	<-	Time General	.813	.106	.302
Couple Functioning	<	Search	4.778	.372	.017
Couple Functioning	<--	Pleasure	-3.807	-.377	.019
Couple Functioning	<	Communication	-.553	-.060	.602
Couple Functioning	<-	Game	-.060	-.004	.957
Couple Functioning	<-	Friendship	-.541	-.035	.727
Couple Functioning	<-	Shopping	.659	.050	.667
Self-Esteem	<-	Couple Functioning	.011	.414	***

Loneliness	<-	Couple Functioning	-.029	-.414	***
Satisfaction with Family Life	<-	Couple Functioning	.059	.694	***
Satisfaction with Life	<-	Couple Functioning	.042	.506	***
Self-Esteem	<-	Time General	.052	.264	.019
Self-Esteem	<-	Search	-.056	-.167	.280
Self-Esteem	<-	Pleasure	-.007	-.026	.873
Self-Esteem	<-	Communication	-.017	-.071	.539
Self-Esteem	<-	Game	-.037	-.105	.212
Self-Esteem	<-	Friendship	-.017	-.043	.662
Self-Esteem	<-	Shopping	.030	.087	.450
Loneliness	<-	Time General	-.028	-.052	.576
Loneliness	<-	Search	.216	.241	.090
Loneliness	<-	Pleasure	-.025	-.036	.807
Loneliness	<-	Communication	-.017	-.027	.796
Loneliness	<-	Game	.285	.301	***
Loneliness	<-	Friendship	-.114	-.106	.242
Loneliness	<-	Shopping	-.031	-.034	.747
Satisfaction with Family Life	<-	Time General	-.042	-.063	.440
Satisfaction with Family Life	<-	Search	-.113	-.102	.406
Satisfaction with Family Life	<-	Pleasure	.095	.109	.400
Satisfaction with Family Life	<-	Communication	-.016	-.020	.824
Satisfaction with Family Life	<-	Game	-.194	-.167	.016
Satisfaction with Family Life	<-	Friendship	.159	.120	.138
Satisfaction with Family Life	<-	Shopping	-.047	-.041	.654
Satisfaction with Life	<-	Time General	-.066	-.103	.273
Satisfaction with Life	<-	Search	-.164	-.154	.276
Satisfaction with Life	<-	Pleasure	-.027	-.033	.824
Satisfaction with Life	<-	Communication	.089	.117	.271
Satisfaction with Life	<-	Game	-.215	-.192	.016
Satisfaction with Life	<-	Friendship	.087	.068	.456
Satisfaction with Life	<-	Shopping	.158	.145	.172

This model examined the impact of time spent online on couple functioning and psychological well-being. The results indicated that the time spent on online activities impact the couple functioning. For example, time spent on searching has a positive impact on the couple functioning, whereas the time spent on pleasure online decreases the function of the couple. In term of the impact of the online activities on well-being, the results showed that time spent in general on the internet can increase the self-esteem. While spent time on game was found a negative impact on the satisfaction with family life and with life, also, increase the feeling of being lonely.

10.4.3 Summary:

The results of the two previous models of the Internet (activities, and time spent), couple functioning, and well-being shown good model fit in overall. The main hypothesis H.2.1 which suggested that the Internet can predict the couple functioning and well-being. In terms of the sub-hypothesises, it was found that the hypothesis H.2.1.1 that suggested a positive impact of search online and time spent on couple was supported, and H.2.1.2 that suggested the negative impact of pleasure online and time on family functioning was also supported. However, the rest of hypothesises found not supported by results.

In terms of the direct impact of the Internet as activities and time spent on well-being, it was found that the most predictor variable is game as an activity and time spent on it. The hypothesis H.2.2.5 that suggested negative impact of using and time spent on game online on self-esteem and satisfaction with family life while positive impact on loneliness was supported by the results. Also, time spent in general predict positively the well-being hypothesis H.2.2.2. The results supported the positive impact on self-esteem.

From the results of the couple models, the couple functioning is work as a full mediation or partly mediation variable between Internet usage and well-being. This result supported H.1.5 hypothesis which suggested that the Internet can be more effective on well-being through the couple functioning.

Finally, the hypothesises of the impact of the couple functioning on the psychological well-being represented by H.1.6.1 to H.1.6.4 were supported by the results. The results showed that the couple functioning predicted positively self-esteem, satisfaction with family life and satisfaction with life, while predicted negatively loneliness.

10.5 Differences across KSA and UK Groups:

In this section, an independent sample *t-test* was performed in order to find out the differences between United Kingdom (UK) and Saudi (KSA) samples in the studies variables; online activities, time spent on online activities, family variables, and psychological variables. 221 participants live in Saudi Arabia as group one, and 212 participants live in the UK as group two.

10.5.1 Online Activities:

As mentioned recently that there are six online activities using by the current sample which are; search online, pleasure online, game online, communication online, friendships online, and shopping online.

The results showed that three of online activities were found significantly different. Firstly, search online was found that the KSA group *(N=221)* was less associated with search online *M=8.154 (SD=1.7013)*, compared with the Uk group *(N=212) M=8.684 (SD=1.4306)*. The assumption of homogeneity of variances was tested and not satisfied via *Levene's F test F(423.783)=4.734, p=.030*. The independent sample *t-test* was associated with a statistically significant effect, *t(423.783)= -3.515, p<.05*. Thus, the UK group was associated with a statistically significantly larger mean search online than KSA group.

Secondly, shopping online was found that the KSA group *(N=221)* was less associated with shopping online *M=2.792 (SD=1.3310)*, compared with the Uk group *(N=212) M=3.609 (SD=1.2325)*. The assumption of homogeneity of variances was tested and satisfied via *Levene's F test, F(431)=1.270, p=.260*. The independent sample *t-test* was associated with a statistically significant effect, *t(431)= -6.596, p=<.05*. Thus, the UK group was associated with a statistically significantly larger mean in shopping online than KSA group.

Lastly, game online was found that the KSA group *(N=221)* was more associated with game online *M=4.177 (SD=2.1555),* compared with the Uk group *(N=212) M=3.561 (SD=2.1967).* The assumption of homogeneity of variances was tested and satisfied via *Levene's F test, F(431)=.253, p=..615*. The independent sample t-test was associated with a statistically significant effect, *t(431)= 2.941, p=<.05*. Thus, the KSA group was associated with a statistically significantly larger mean in gaming online than the UK group.

However, the other online activities which are pleasure, Communication, and Friendships showed that no a statistically significant between KSA group and UK group. The results of *F(431)* ranging from *.235 to .331,p>.05.* the independent sample *t-test* was not associated with a statistically significantly effect, *t* ranging from *-.1.447 to .403, all p>.05.* The results are provided in Table 10.9.

Table 10.9 Differences between UK and KSA in Online activities.

Online Activities	Country	N	M	SD	Std. Error Mean	Sig
Search	KSA	221	8.154	1.7013	.1144	**Sig**
	UK	212	8.684	1.4306	.0983	
Pleasure	KSA	221	7.416	2.1989	.1479	**n.s**
	UK	212	7.330	2.2507	.1546	
Communication	KSA	221	10.548	2.7739	.1866	**n.s**
	UK	212	10.889	2.4391	.1675	
Friendship	KSA	221	7.611	2.8305	.1904	**n.s**
	UK	212	7.972	2.3466	.1612	
Shopping	KSA	221	2.792	1.3310	.0901	**Sig**
	UK	212	3.609	1.2325	.0847	
Game	KSA	221	4.177	2.1555	.1450	**Sig**
	UK	212	3.561	2.1967	.1509	

Note: KSA refers to Kingdom of Saudi Arabia, UK refers to United Kingdom.

10.5.2 Time spent on online activities:

The results showed that time spent on three of online activities were found significantly different. Spent time on Game online was found that the KSA group *(N=221)* was more associated with game online *M=5.99 (SD=3.25085)*, compared with the Uk group *(N=212) M=5.25 (SD=2.29336)*. The assumption of homogeneity of variances was tested and not satisfied via *Levene's F test, F(396.278)=13.41, p<.05* The independent sample *t-test* was associated with a statistically significant effect, *t(396.278)= 2.733, p=<.05*. Thus, the KSA group was associated with a statistically significantly larger mean game online than UK group.

Furthermore, spent time on Friendships online was found that the KSA group *(N=221)* was more associated with friendship online *M=5.56 (SD=3.09429)*, compared with the Uk group *(N=212) M=4.87 (SD=1.63246)*. The assumption of homogeneity of variances was tested and not satisfied via *Levene's F test, F(336.637)=32.010, p<.05* The independent sample *t-test* was associated with a statistically significant effect, *t(336.367)= 2.932, p=<.05*. Thus, the KSA group was associated with a statistically significantly larger mean friendship online than UK group.

However, the results showed that the UK group was associated with a statistically significantly larger mean of spending time on shopping online than the KSA group. The Uk group *(N=212) M=3.38 (SD=1.49890)*, compared with the KSA group *(N=221) M=2.75 (SD=1.48219)*. The assumption of homogeneity of variances was tested and not satisfied via *Levene's F test, F(429.798)=5.598, p<.05* The independent sample *t-test* was associated with a statistically significant effect, *t(429.798)= -4.403, p=<.05.*

In terms of the time spent on other online activities which are, general, search, pleasure, and Communication showed that no a statistically significant between KSA group and UK group.

The results of *F(422.187, 431)* ranging from *1.645 to 10.241,p>.05*. The independent sample *t-test* was not associated with a statistically significantly effect, *t* ranging from -*.1.850 to .519,p>.05.* The results are provided in Table 10.10.

Table 10.10 Differences between UK and KSA in time spent on online activities.

Time Online	Country	N	M	SD	Std. Error Mean	Sig
General	KSA	221	6.81	2.34776	.15793	**n.s**
	UK	212	6.90	2.04791	.14065	
Search	KSA	221	7.57	3.65830	.24608	**n.s**
	UK	212	8.20	2.89236	.19865	
pleasure	KSA	221	5.83	2.96710	.19959	**n.s**
	UK	212	5.88	2.48793	.17087	
communication	KSA	221	8.40	3.93767	.26488	**n.s**
	UK	212	8.22	3.50762	.24090	
game	KSA	221	5.99	3.25085	.21868	**Sig**
	UK	212	5.25	2.29336	.15751	
Friendship	KSA	221	5.56	3.09429	.20814	**Sig**
	UK	212	4.87	1.63246	.11212	
Shopping	KSA	221	2.75	1.48219	.09970	**Sig**
	UK	212	3.38	1.49890	.10294	

Note: KSA refers to Kingdom of Saudi Arabia, UK refers to United Kingdom.

10.5.3 Family Functioning:

The results showed that Family cohesion and Adaptability were found significantly different. Family cohesion and Adaptability were found that the KSA group *(N=221)* was less associated with cohesion and adaptability *M=49.778, 43.2851 (SD=8.09830, and 8.06593)*, compared with the Uk group *(N=212) M=51.3632, and 44.9481 (SD=7.61983, and 7.52261)* respectively. The assumption of homogeneity of variances was tested and satisfied via *Levene's F test, F(431)=.474, and,1.268, p<.05* for cohesion and adaptability respectively. The independent sample *t-test* was associated with a statistically significant effect, for cohesion and adaptability the *t(431)=-2.059, and -2.217 -3.515, p=<.05*. Thus, the UK group was more associated with a statistically significantly larger mean in family cohesion and adaptability than KSA group. The results are provided in Table 10.11.

Table 10.11 Differences between UK and KSA in family functioning.

Family Variables	Country	N	M	SD	Std. Error Mean	Sig
Family Cohesion	KSA	221	49.78	8.09830	.54475	**Sig**
	UK	212	51.36	7.61983	.52333	
Family Adaptability	KSA	221	43.29	8.06593	.54257	**Sig**
	UK	212	44.95	7.52261	.51666	

Note: KSA refers to Kingdom of Saudi Arabia, UK refers to United Kingdom.

10.5.4 Psychological Well-being:

The results showed that Self-esteem and Satisfaction with life were found significantly different. Self-esteem was found that the KSA group *(N=221)* was less associated with self-esteem *M=35.172 (SD=4.638)*, compared with the Uk group *(N=212) M=36.632 (SD=4.9725)*. The assumption of homogeneity of variances was tested and satisfied via *Levene's F test, F(431)=2.377, p>.05* The independent sample *t-test* was associated with a statistically significant effect, *t(431)= -3.161, p=<.05*. Thus, the UK group was associated with a statistically significantly larger mean self-esteem than KSA group.

Furthermore, satisfaction with life was found that the KSA group *(N=221)* was less associated with satisfaction with life *M=25.4842 (SD=5.6757)*, compared with the Uk group *(N=212) M=27.075 (SD=5.1225)*. The assumption of homogeneity of variances was tested and satisfied via *Levene's F test, F(431)=1.152, p>.05* The independent sample *t-test* was associated with a statistically significant effect, *t(431)=-3.059, p=<.05*. Thus, the UK group was more associated with a statistically significantly larger mean in satisfaction with life than KSA group.

While loneliness and satisfaction with family life were not found significantly different. The results of *F(431)* ranging from *1.406 to 3.274,p>.05*. The independent sample t-test was not associated with a statistically significantly effect, *t* ranging from *-.911 to1.843,p>.05.* The results are provided in Table 10.12.

Table 10.12 Differences between UK and KSA in well-being variables.

Well-Being	Country	N	M	SD	Std. Error Mean	Sig
Self-Esteem	KSA	221	35.172	4.63851	.31202	**Sig**
	UK	212	36.632	4.97258	.34152	
Loneliness	KSA	221	38.140	10.83904	.72911	**n.s**
	UK	212	36.245	10.54740	.72440	
Satisfaction with Family Life	KSA	221	26.308	5.53092	.37205	**n.s**
	UK	212	27.219	4.80420	.32995	
Satisfaction with Life	KSA	221	25.484	5.67578	.38179	**Sig**
	UK	212	27.076	5.12257	.35182	

Note: KSA refers to Kingdom of Saudi Arabia, UK refers to United Kingdom.

10.6 Conclusion:

This study aims to investigate the impact of Internet activities and time spent on Internet on family system and well-being variables.

In this study, some progress has been made in understanding to what extent that the Internet effects the family and psychological well-being. To achieve this aim, this study collected more data following the second study (pilot study) in order to aid the development of the scales used here. Also, this study used advanced statistical methods to investigate the impact of the internet: notably CFA, and SEM. The process beginning from the description of the devices that participants hold, then moved to calculate the time spent on Internet activities by family members per week at two different time (weekdays & weekends) also, find the differences between the two times and among family members. After that, the study started developing the scales as a required step to be able using the SEM. The scales were further analysed using the Confirmatory Factor Analysis. After that, twelve models were established in order to find out the impact of using the internet.

The results indicated that all participants in this study has at least one device which enabled them to connect to the internet. Also, results showed that participants spent varying time on different Internet activities and it was found that there were some differences between the

weekdays time and weekends and among the family members. In term of developing the scales the CFA results indicated that all the models of the scales provided a good model fit based on standard model fit guide lines. Furthermore, the twelve models in the SEM showed a good model fit.

Furthermore, a comparison between the UK and KSA samples was carried out and it showed some differences in some variables. The results showed that game and friendships online were used by the KSA sample more compared with UK sample. While, search and shopping online were used more by the UK sample. Also, family cohesion and adaptability mean was found bigger in the UK sample compared with the KSA sample. Similarly, in self-esteem and satisfaction with life.

To sum up, the results of this study strongly suggested that the Internet can affect the family system and well-being. Based on the results, however, Internet usage has more effect on family system via search, pleasure, shopping online activities rather than on well-being.

This study is the first wave of the longitudinal design and it will be followed by the second wave study to make a full picture in term of the impact of the Internet on family system and well-being variables.

11. Chapter Eleven: Study Five (Longitudinal Study).

11.1 Introduction

At time one cross sectional study, the results in term of the impact of Internet usage on family system variables showed that the activities of the Internet especially search online, pleasure and shopping have roles to play in increasing or decreasing the level of family cohesion and adaptability. For example, the results of the cross-sectional study indicated that Internet usage for search, reading or seeking for new information online can increase the level of the family cohesion and positively change the rules inside the family. Also, use the Internet for searching can have a positive impact on the psychological well-being as has been reported in the time one. While, other Internet activities reduce the level of family cohesion and adaptability (e.g., using the Internet for pleasure (watching and listening) or shopping online), and it may increase conflicts inside the family. Also, the results indicated that these online activities have a negative impact on the psychological well-being.

11.2 Study Aims:

This follow up study was carried out to examine the following hypothesis:

1. To find out the differences among the study's variables between cross-sectional and longitudinal samples.
2. To investigate the differences among the study's variables between the sample who took part in the second wave with another sample who did not.
3. To examine the models of the longitudinal study as following hypothesis:
    a. H.2.1 Model one, there is an impact of the Internet activities over the time on family cohesion.
    b. H.2.2 there is an impact of times spent on Internet activities over the time on family Cohesion.

c. H.2.3 there is an impact of the Internet activities over the time on family Adaptability.
d. H.2.4 there is an impact of times spent on Internet activities over the time on family Adaptability.
e. H.2.5 there is an impact of the Internet activities over the time on the couple cohesion.
f. H.2.6 there is an impact of spending time on the online activities over the time on the couple cohesion.
g. H.2.7 there is an impact of the Internet activities over the time on the couple adaptability.
h. H.2.8 there is an impact of spending time on the online activities over the time on the couple adaptability.
i. H.2.9 There is an impact of using the Internet activities over the time on the self-esteem.
j. H.2.10 There is an impact of spent time on the Internet activities over the time on the self-esteem.
k. H.2.11 There is an impact of the Internet activities over the time on loneliness.
l. H.2.12 There is an impact of the time spent on Internet activities over the time on loneliness.
m. H.2.13 There is an impact of the Internet activities over the time on satisfaction with family life.
n. H.2.14 There is an impact of spent time on the Internet activities over the time on satisfaction with family life.
o. H.2.15 There is an impact of the Internet activities and time spent on online activities over the time on satisfaction with life (SWL).

11.3 Method

After completing the first wave and examine the impact of Internet usage on family system and psychological well-being at the first time, the participants of the first wave were encouraged in order to participate in at the time two of this study about over six months. The online questionnaire was sent again to the participants via their email. The survey consists of Internet usage which measure the important of Internet activities such using the Internet for searching, pleasure (watching, listening), communications with other, game online, making new friendships, and shopping online, and the other aspect of Internet is to measure the time spent online on the Internet activities in different time a week (weekdays, and weekends). The second variable is focusing in measuring the two central dimensions of family system cohesion, and adaptability. Finally, the last variable in the survey is to measure the psychological well-being and it is presented by four individual well-being which are self-esteem, loneliness, satisfaction with family life, and satisfaction with life.

The process of doing the examination of the impact of Internet use on family system and well-being variables is by predicting the performance of the participants on the Internet concept (activities and time spent on internet) survey at the time one and its impact on the performance of the participants on family system (Cohesion, Adaptability) and well-being variables (Self-esteem, Loneliness, Satisfaction with family life, and satisfaction with life) survey at time two. Also, the family system variables and psychological well-being variables were controlled by adding the performance of the participants on family system and psychological well-being survey at time one as predictor variables. The Figure 11.1 and 11.2 show the main design of the models for the second wave study.

Figure 11.1 The Main Model of the impact of Internet usage on the family system in second wave study.

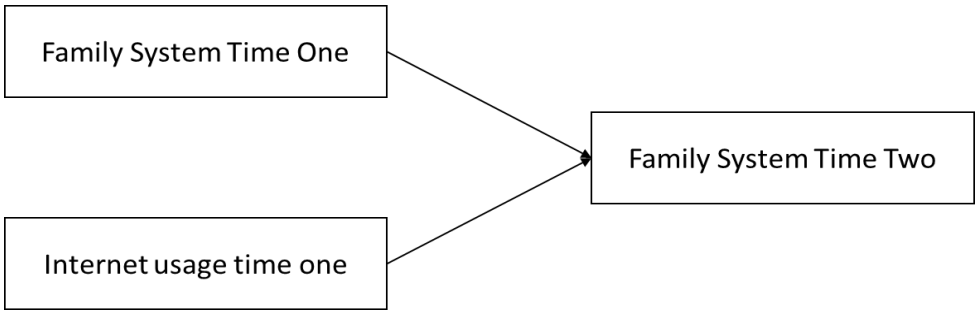
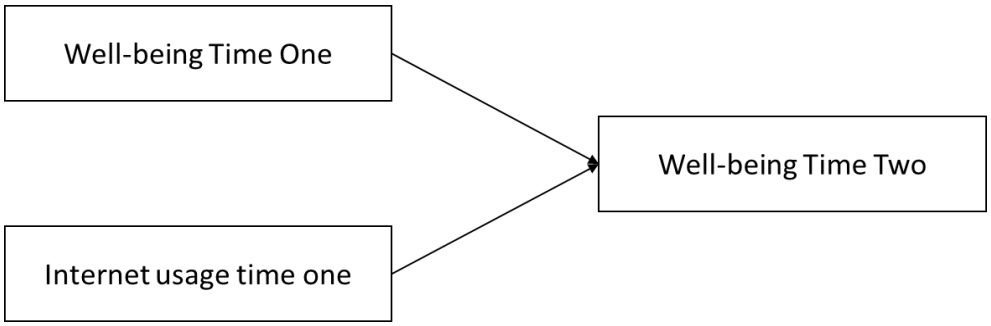


Figure 11.2 The Maine Model of the impact of Internet usage on well-being variables.



11.4 Sample description

Over six months the participants were contacted again to take part in the second wave in the current study. A sample of 74 participants agreed to answer the questionnaire of the second wave, and their age is between 17 to 54 years old with average of 33.23 and a standard deviation 8.20 see Table 11.1. The most of participants were male and n = 48 with 65%percentage while 26 (35%) were female. A highest percentage of the sample were married (80%) while less than (20%) report they are single. In terms of the member of family, the results showed that around 60% are fathers, while only four sons as a family member took part in this survey. The results of the demographic information have been presented in Table 11.2.

Table 11.1 Mean Age and Standard Deviation.

N	*Minimum*	*Maximum*	*Mean*	*SD*
74	17	54	33.23	8.202

Table11. 2 Demographic Information.

Demographic variables	*Category*	*Count*	*Percentage*
Gender	**Male**	48	64.9
	Female	26	35.1
	Total	74	100
Status	**Married**	61	82.4
	Single	13	17.6
	Divorce	0	0
	Total	74	100
Family Members	**Father**	44	59.5
	Mother	15	20.3
	Sons	4	5.4
	Daughter	11	14.9
	Total	74	100

11.5 Results

In this section the results of the second wave are presented. At the beginning, this first section of the results describes the differences of time spent on the Internet activities between time (Cross-Sectional or first wave) one and time two (Longitudinal or second wave).

11.5.1 Differences between the time spent on online activities at time 1 and time 2 for the longitudinal sample:

This section is to examine the first aim of this study which is about the change of the time spent on online activities over about six months for one sample. To do that, a Paired-Sample *t-test* which referred to as repeated measures that compared between data that collected in two different times (Pallant,2010).

The results indicated that the time spent on game and friendships online are significant increased from Time 1 (first wave) *(N=74) M= 2.838 (SD=1.14709), M=2.156*

(SD=1.19431) to Time 2 (second wave) *M=4.987 (SD=1.83193), M=4.838 (SD=2.10040), t (73) =-9.415, and -10.158, all p<.005* for game and friendships online respectively.

However, the time spent on other online activities; general, search, pleasure, communications were increased but not significantly (see table 11.3). The results of t-test ranging from *t (73) = -.888 to .238, all p>.05.* The results are provided in Table 11.3.

Table 11.3 Differences of time spent on online activities between study one and two.

Time	***M***	***N***	***SD***	***Sig***
Game 1	2.838	74	1.14709	Sig
Game 2	4.987	74	1.83193	
Friendships 1	2.156	74	1.19431	Sig
Friendships 2	4.838	74	2.10040	
General 1	6.662	74	2.38303	Ns
General 2	6.939	74	2.33196	
Search 1	7.392	74	2.64740	Ns
Search 2	7.500	74	2.92017	
Pleasure 1	6.811	74	2.75818	Ns
Pleasure 2	7.054	74	3.37554	
Communicate 1	7.676	74	3.21430	Ns
Communicate 2	7.568	74	3.55035	
Shopping 1	2.649	74	1.07821	Ns
Shopping 2	2.581	74	.99322	

11.5.2 Attrition analysis comparing participants present at time 1 only with participants at time 1 and time 2:

This section is to compare between sample who took part in the longitudinal study with sample who did not, in online activities, time on the online activities, family functioning, and psychological well-being. To examine an independent sample *t-test* was performed. 74

participants who continued carrying out the survey in the longitudinal study, while 359 did not complete the survey.

11.5.2.1 Internet activities:

The results showed that online activities found non-significantly different between the cross-sectional and longitudinal samples. The assumption of homogeneity of variances was tested and satisfied via *Levene's F test* for all online activities, and *F(431)=.010 to 2.207, p>.05*. The independent sample *t-test* results are not statistically significant effect, *t(431)* ranging from *-.975 to .818, p>.05*. The results are provided in Table 11.4.

Table 11.4 Differences between sample in the longitudinal and cross-sectional studies in online activities.

Online Activities	Samples	N	M	SD	Std. Error Mean	Sig
Search	Long	74	8.419	1.58768	.18456	n.s
	Cross	359	8.412	1.59870	.08438	
Pleasure	Long	74	7.405	2.28107	.26517	n.s
	Cross	359	7.368	2.21313	.11680	
Game	Long	74	3.649	1.96847	.22883	n.s
	Cross	359	3.922	2.23845	.11814	
Communication	Long	74	10.514	2.72605	.31690	n.s
	Cross	359	10.755	2.59696	.13706	
Friendship	Long	74	8.014	2.67660	.31115	n.s
	Cross	359	7.741	2.59507	.13696	
shopping	Long	74	3.284	1.40956	.16386	n.s
	Cross	359	3.173	1.33840	.07064	

Note; long refers to longitudinal sample, and cross refers to cross sectional sample. s= significant, and n.s= non-significant

11.5.2.2 Time Spent on online activities:

The results showed that time spent on communication, game, and shopping online were found significantly different between the cross-sectional and longitudinal samples. It was found that the sample at cross sectional study *(N=359)* was more associated with communication, game, and shopping online compared with sample at longitudinal study *(N=74)*. The means for the time spent on these activities were for the cross-sectional sample

M=8.485, 5.7521, and 3.1393 (SD=3.78237, 2.91640, and 1.55265) respectively. While, for the longitudinal group *M=7.473, 5.014, and 3.676 (SD=3.36470, 2.38427, and 1.30445)* respectively.

The assumption of homogeneity of variances was tested and satisfied via *Levene's F test* for time spent on communication online, and *F(431)=2.631, p>.05*. The independent sample t-test result is statistically significant effect, *t(431)= -2.133, p<.05*. While the assumption of homogeneity of variances for time spent on game and shopping were not satisfied via *Levene's F Test F (122.593, and 119.779) =8.653, and 7.218, p>.05* respectively. The independent sample t-test result is statistically significant effect, *t(122.593, and 119.779)= -2.330, and -2.690, p<.05* respectively.

In terms of other online activities, the results showed that there were no significantly different between the two samples (cross sectional, and longitudinal). The results are provided in table 11.5.

Table 11.5 Differences between sample in the longitudinal and cross-sectional studies in time spent on online activities.

Time on online activities	Samples	N	M	SD	Std. Error Mean	Sig
general	Long	74	6.500	2.13420	.24810	n.s
	Cross	359	6.925	2.21408	.11685	
Search	Long	74	7.311	2.92802	.34038	n.s
	Cross	359	7.964	3.38190	.17849	
pleasure	Long	74	5.338	2.72119	.31633	n.s
	Cross	359	5.964	2.73531	.14436	
communication	Long	74	7.473	3.36470	.39114	Sig
	Cross	359	8.485	3.78237	.19963	
game	Long	74	5.014	2.38427	.27717	Sig
	Cross	359	5.752	2.91640	.15392	
Friends	Long	74	4.973	2.35234	.27345	n.s
	Cross	359	5.273	2.54087	.13410	
shop	Long	74	2.676	1.30445	.15164	Sig
	Cross	359	3.139	1.55265	.08195	

Note; long refers to longitudinal sample, and cross refers to cross sectional sample. s= significant, and n.s= non-significant

11.5.2.3 Family Functioning:

The results showed that family functioning represented by cohesion and Adaptability were found non-significantly different between the two sample. Family cohesion was found that the longitudinal sample *(N=74)* was more associated with cohesion *M=50.6892, (SD=7.84599),* compared with the cross-sectional sample *(N=359) M=50.5265, (SD=7.91990).* Whereas, family adaptability was found that the cross-sectional sample was more associated with family adaptability *(N=359) M=44.1198, (SD=7.75639),* compared with longitudinal sample *(N=74), M=44.0000, (SD=7.75639).* The assumption of homogeneity of variances was tested and satisfied via *Levene's F test, F(431)=.346, and .440 p>.05*. The independent sample *t-test* was not associated with a statistically significant effect, for cohesion the *t(431)=.161*, for cohesion, *and -.120* for adaptability *all p>.05*. The results are provided in table 11.6.

Table 11.6 Differences between sample in the longitudinal and cross-sectional studies in family functioning.

Family Functioning	Sample	N	M	S.D	Std. Error Mean	SN
Cohesion	Long	74	50.689	7.84599	.91208	n.s
	Cross	359	50.527	7.91990	.41800	
Adaptability	Long	74	44.000	8.28764	.96342	n.s
	Cross	359	44.119	7.75639	.40937	

Note; long refers to longitudinal sample, and cross refers to cross sectional sample. s= significant, and n.s= non-significant

11.5.2.4 Psychological Well-Being:

The results showed that all psychological well-being variables were found non-significantly different between the two samples. Self-esteem and satisfaction with family life were found more associated with longitudinal sample *(N=74) M=35.9595, and 27.000, (SD=5.21441, and 5.32248),* compared with the cross-sectional sample *(N=359) M=35.8719, and 26.7033, (SD=4.78478, and 5.18281).* Whereas, loneliness and satisfaction with life were found more associated with cross-sectional sample *(N=359) M=37.247, and 26.2841 (SD=10.9078,*

and5.39165), compared with longitudinal sample *(N=74), M=37.0405, and26.1622, (SD=11.43827, and 5.84040)*.

The assumption of homogeneity of variances was tested for all variables and satisfied via *Levene's F* test were between, *F (431)=.000, and 1.224, and all p>.05*. The independent sample *t-test* were not associated with a statistically significant effect, for all variables the *t-test between (431) =-.175 and .446 all p>.05*. The results are provided in table 11.7.

Table 11.7 Differences between sample in the longitudinal and cross-sectional studies in well-being.

Variables	Samples	N	M	S D	Std. Error Mean	Sig
Self-Esteem	Long	74	35.9595	5.21441	.60616	n.s
	Cross	359	35.8719	4.78478	.25253	
Loneliness	Long	74	37.0405	11.43827	1.32967	n.s
	Cross	359	37.2479	10.59078	.55896	
Satisfaction with family life	Long	74	27.0000	5.32248	.61873	n.s
	Cross	359	26.7033	5.18281	.27354	
Satisfaction with life	Long	74	26.1622	5.84040	.67893	n.s
	Cross	359	26.2841	5.39165	.28456	

Note; long refers to longitudinal sample, and cross refers to cross sectional sample. s= significant, and n.s= non-significant

11.5.3 Summary:

This section describes the demographic information of the sample who took part in the second wave in this study. It shows that about quarter of the main sample of the first wave agreed to involve in the second part of the current study in six months later. The most of participants were male while fewer presents the female as was mentioned above.

The second part of this section is to describe the change of spent time on Internet activities over the six months. To find out the differences the t-test was used, and the results showed that the time spent on Internet activities has been raised in some activities such as game online and making friends over the internet.

The third part of this section is to find out the differences between participants who took part in the compared longitudinal sample with whole sample in the cross-sectional study. The

results showed that only three variables were differed which were time spent on communication, game, and shop online. The averages were higher in the cross-sectional sample compared with longitudinal.

The next section is to find out whether the aspects of Internet usage (activities, time spent) still have an impact on the variables of family and well-being or not.

11.5.4 Models:

The second section of the results is to investigate the impact of Internet activities and time spent online on family system and psychological well-being. Two main hypothesises were examined; the first hypothesis is to find out the influences of using the Internet on the family system over about six months. The Internet usage is presented by two aspects; Internet activities includes, search, pleasure, communication, friendships, game, and shopping online. The second aspect of the Internet is the time spent online includes time spent in general, time on search, time pleasure, time on communication, time on game, time on friendships, time on shopping. In term of the family system, two central dimensions represent the conceptualization of the family, the family cohesion and family adaptability. The second hypothesises is to find out the influences of the two aspects of the Internet on the psychological well-being variables. Four individual psychological well-being which includes self-esteem, loneliness, satisfaction with family life, satisfaction with life. To investigate the impact of Internet use on family system and psychological well-being, the multiple regression was employed, using SPSS software programme version 21.

11.5.4.1 Internet activities and family functioning Models:

The following models is to examine the main hypothesis which is “there is an impact of Internet on family functioning”. This hypothesis branched into two basic hypothesises the

first one is to investigate the impact of two aspects of Internet concept on the family cohesion dimension and the second is to investigate the aspect of the Internet on family adaptability.

11.5.4.1.1 H.2.1 there is an impact of the Internet activities over the time on family cohesion.

To examine the hypothesis, the family cohesion of the second wave was entered as the dependent variable. While the family cohesion of the second wave along with Internet activities, search online, pleasure online, communication online, game online, friendship online, and shopping online as the protectors' variables.

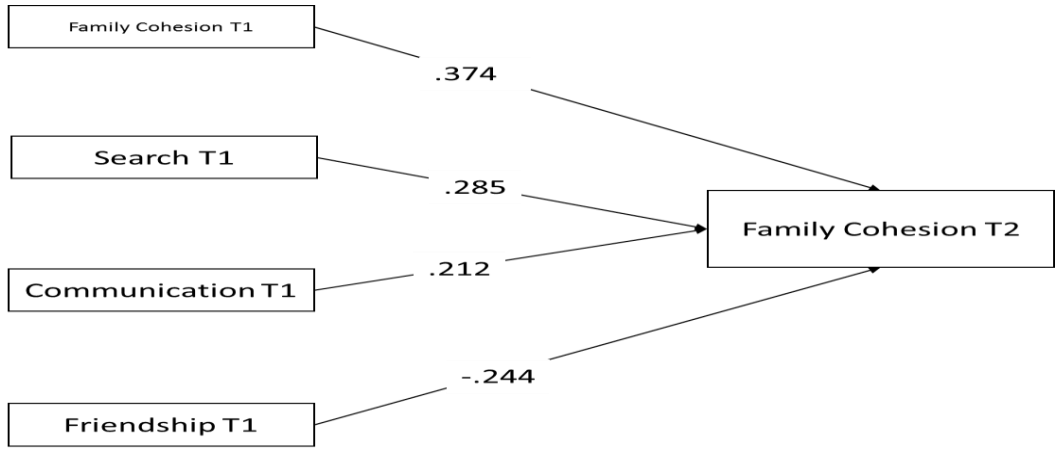
The results indicated that the predictors variables explained about 36% of the sample variance (R^2=.355 *(F (4, 73) =9.482, p<.005*). In term of the impact of each predictor variables on the dependent variable (Family cohesion Second wave), the results showed that the family cohesion of the first wave is positively significant effect and *B=.374, p<.005*. The variables of the Internet activities showed three variables out of six variables still remained the effect on the family cohesion. The time one search online is positively significant effect on the family cohesion, *B=.285, p<.05*. Also, Time on of the communication is becoming significant compared with the first wave *B=.21, p=.05*. However, the time one of using the Internet for creating new friends over online has become significant and negatively affect *B=-.24, p<.05*. The results also provided in table 11.8 and figure 11.3.

Table 11.8 the influences of Internet activities on family cohesion.

Predictors Variables	*B*	*p*	*Sig*
Family cohesion	0.37	.000	Sig
Search online	0.29	.006	Sig
Communication online	.21	.051	Sig
Friendships online	-0.24	.028	Sig

The dependent variable is family cohesion (time two). Predictors: Family cohesion, and Internet activities. (Time2)

Figure 11.3 Model one; Internet activities and family cohesion model.



11.5.4.1.2 H.2.2 there is an impact of times spent on Internet activities over the time on family Cohesion.

To examine the impact of time spent online on Internet activities on the family cohesion over the time, the time two of the family cohesion was entered as the dependent variable in the multiple regression. While the family cohesion in the first wave along with different time spent online includes, general time spent regardless the material of the internet, time spent on searching online, time pleasure, time game, time spent on friendship, time spent on communication, and time spent on shopping online. The results indicated that the predictor variables explained about a quarter of the sample variance $R^2 = .252\ (F(8,73)=2.737, p<.05)$. In term of the impact of the predictor variables in the family cohesion time two, the results revealed that only the family cohesion of time one has a significant impact on the family cohesion time two, while, spent time on Internet activities have become none significant. The results provided in Table 11.9.

Table 11.9 the infiluncess of time spent on Internet activities on family cohesion.

Predictor Variables	*B*	*P*	*Sig*
Cohesion	0.43	.001	Sig
General	-0.04	.709	n.s
Search	0.13	.336	n.s
Pleasure	-0.21	.140	n.s

Communicate	0.08	.545	n.s
Game	0.003	.985	n.s
Friendships	-0.07	.635	n.s
Shop	-0.02	.855	n.s

The independent: family cohesion (time tow). Predictors: Family cohesion, and time spent on Internet activities .(Time2)

11.5.4.1.3 H.2.3 there is an impact of the Internet activities over the time on family Adaptability.

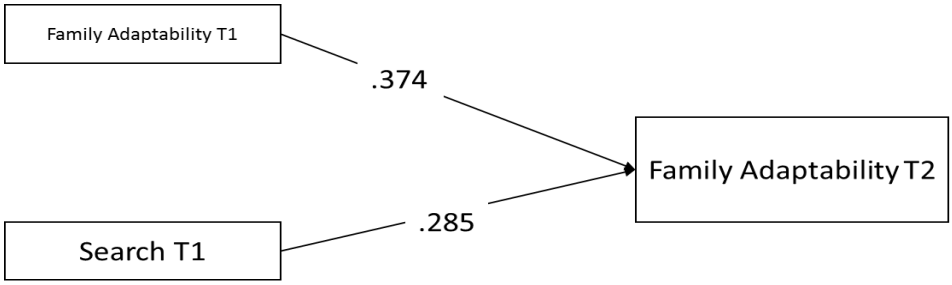
To examine this hypothesis, the time two of the family adaptability was entered as the dependent variable in the multiple regression, and time one of the adaptability along with the Internet activities were entered as the protector variables. The results indicated that the predictor variables explained about a quarter of the sample variance, R^2*=.261, (F (2,73) =13.904, p<.005)*. In term of the impact of the predictor variables on the family adaptability, the results revealed that the family adaptability time on has a positive impact on the time two of family adaptability B=.416, p<.005. While the results indicated only one Internet activity which is search online, and it has a positive impact B=260, p<.013. The results also provided in Table 11.10 and Figure 11.4.

Table 11.10 The influences of Internet activities on family adaptability.

Predictors Variables	*B*	*p*	*Sig*
T1-Family Adaptability	0.37	.005	Sig
T1-Search online	0.28	.006	Sig

dependent variable: family adaptability (time two).Predictors: Family Adaptability, and Internet activities.(Time Two)

Figure 11.4 Model Two; Internet activities and family adaptability model.



11.5.4.1.4 H.2.4 there is an impact of times spent on Internet activities over the time on family Adaptability.

To examine the impact of time spent online on Internet activities on the family adaptability over the time, the time two of the family adaptability was entered as the dependent variable in the multiple regression. While the family adaptability in the first wave along with different time spent online includes, general time spent regardless the material of the internet, time spent on searching online, time pleasure, time game, time spent on friendship, time spent on communication, and time spent on shopping online. The results indicated that the predictor variables explained nearly 30% of the sample variance $R^2 = .286\ F(8,73)=3.25, p<.05)$. In term of the impact of the predictor variables in the family cohesion time two, the results revealed that only the family cohesion of time one has a significant impact on the family cohesion time two, while, spent time on Internet activities have become none significant. The results provided in Table 11.11.

Table 11.11 The influences of time spent Internet on family adaptability

Predictor Variables	*B*	*p*	*Sig*
Adaptability	0.49	.000	Sig
General	0.01	.951	n.s
Search	-0.06	.672	n.s
Pleasure	-0.09	.506	n.s
Communicate	0.24	.072	n.s
Game	0.09	.522	n.s
Friendships	-0.05	.745	n.s
Shop	-0.17	.158	n.s

dependent variable: family adaptability (time two). Predictors: Family Adaptability, and time spent on Internet activities.(Time Two)

11.5.4.1.5 Summary:

This section presented the results of the impact of Internet activities and time spent on Internet activities on the family process variables (cohesion and adaptability). At time one of this study the results showed that the search online activity has a positive impact on the family cohesion and adaptability. Also, this impact of the search online activities still has

the same effect at time two of the current study. While pleasure online as an activity at time one showed a negative impact on the family cohesion and adaptability, however, at time two the impact of the pleasure activity became non-significant at time two but still negative. In addition, some activities at time one were non-significant impact but at time two have become significant. For example, communication online became significantly positive on the family cohesion, also, friendships online have a negative impact on family cohesion and are statistically significant.

In contrast, the time spent on online activities at time two have become non-significant compared with the results of the time one. The summary of the results also provided in table11.12.

Table 11.12 A summary of the influences of the significant impact of Internet activities and time spent online on family cohesion/adaptability.

Online Activities	**Family Cohesion**		**Family Adaptability**	
	Cross Sectional	Longitudinal Study	Cross Sectional	Longitudinal Study
Search Online	(+).sig	(+).sig	(+).sig	(+).sig
Pleasure Online	(-).sig	ns	(-).sig	ns
Communication Online	(+).ns	(+).sig	(-).ns	ns
Friendship Online	(-).ns	(-).sig	(-).ns	ns
Game Online	ns	ns	ns	ns
Shop Online	ns	ns	ns	ns
Time Spent Online	Cross-sectional	Longitudinal	Cross-sectional	Longitudinal
General	(-).ns	ns	(-).ns	ns
Search	(+).ns	ns	(+).Sig	ns
Pleasure	(-).sig	ns	(-).Sig	ns
Communication	(+).ns	ns	(+).ns	ns
Game	(+).ns	ns	(+).ns	ns
Friendships	(-).sig	ns	(-).ns	ns
Shop	(+).ns	ns	(+).ns	ns

11.5.4.2 Couple Models:

This section presents the results of the impact of Internet usage (Internet activities, and time spent on online activities). In this section, the multiple regression has been employed in order to examine the impact of the aspects of Internet on the couple cohesion and adaptability.

11.5.4.2.1 H.2.5 there is an impact of the Internet activities over the time on the couple cohesion.

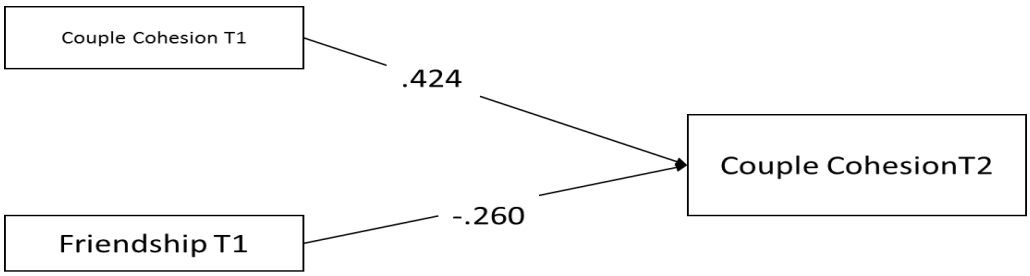
In order to examine this hypothesis, the mutable regression was employed and the couple cohesion time two was entered as the dependent variables. While, the couple cohesion along with Internet activities were entered as the predictor variables. The results showed that the predictor variables have explained about 30% of the sample variance, $R^2=.33$, $F(5,57)=5.021, p<.005$). In term of the impact of the predictor variables, the results revealed that the couple cohesion at time one has a significant impact on the couple cohesion at time two $B=.42, p<.005$. Also, the results showed that only one online activity impact the couple cohesion which is friendships activity $B=-.26, p<.05$. the results also provided in Table 11.13 and Figure 11.5.

Table 11.13 the influences of the Internet activities on couple cohesion.

Predictors Variables	*B*	*p*	*Sig*
couple cohesion	0.42	.001	Sig
Friendships	-0.26	.043	Sig

dependent variable: Couple Cohesion (time two). Predictors: couple cohesion, and Internet activities. (Time Two)

Figure 11.5 Model Three; Internet activities and couple cohesion model.



11.5.4.2.2 H.2.6 there is an impact of spending time on the online activities over the time on the couple cohesion.

To examine the impact of time spent online on Internet activities on couple cohesion over the time, the time two of the couple cohesion was entered as the dependent variable in the multiple regression. While the couple cohesion in the first wave along with different time spent online includes, general time spent regardless the material of the internet, time spent on searching online, time pleasure, time game, time spent on friendship, time spent on communication, and time spent on shopping online. The results indicated that the predictor variables explained nearly 30% of the sample variance $R^2 = .29\ F(8,57)=2.49, p<.05$). In term of the effect of the predictor variable, the results indicated that only the couple cohesion has a positive impact on the couple cohesion in the second wave $B=.452,\ p<.05$, while the time spent on the Internet has no effect on the couple cohesion in time two. The results provided in Table 11.14.

Table 11.14 the influences of time spent on Internet activities on couple cohesion.

Predictor Variables	*B*	*p*	*Sig*
Couple Cohesion	0.45	.001	Sig
General	0.007	.960	ns
Search	-0.12	.476	ns
Pleasure	-0.12	.480	ns
Communicate	0.16	.298	ns
Game	0.25	.138	ns
Friendships	-0.15	.412	ns
shop	-0.19	.176	ns

dependent variable: couple cohesion (time two). Predictors: couple cohesion and time spent on Internet activities.(Time Two)

11.5.4.2.3 H.2.7 there is an impact of the Internet activities over the time on the couple adaptability.

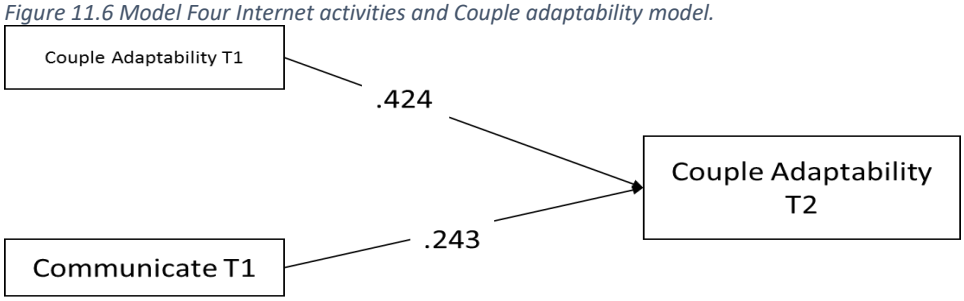
In order to examine this hypothesis, the mutable regression was employed and the couple adaptability time two was entered as the dependent variables. While, the couple adaptability along with Internet activities were entered as the predictor variables. The results showed that the predictor variables have explained about $R^2=.48, F(5,57)=7.714, p<.005)$. In term of the impact of the predictor variables, the results revealed that the couple adaptability in the first wave has a significant impact $B=.459, p<.005$. Also, one predictor variable from the Internet activities has become significant which is using Internet for communication $B=0.243, p<.05$. The results also provided in Table 11.15 and Figure 11.6.

Table 11.15 The influences of Internet activities on couple adaptability.

Predictors Variables	*B*	*p*
T1-couple Adaptability	0.42	.000
T1- communication	0.24	.036

dependent variable: Couple adaptability (time two). Predictors: Couple Adaptability, and Internet activities.(Time Two)

Figure 11.6 Model Four Internet activities and Couple adaptability model.



11.5.4.2.4 H.2.8 there is an impact of spending time on the online activities over the time on the couple adaptability.

To examine the impact of time spent online on Internet activities on the couple adaptability over the time, the time two of the couple adaptability was entered as the dependent variable in the multiple regression. While the couple adaptability in the first wave along with different

time spent online includes, general time spent regardless the material of the internet, time spent on searching online, time pleasure, time game, time spent on friendship, time spent on communication, and time spent on shopping online. The results indicated that the predictor variables explained nearly 40% of the sample variance, $R^2 = .40\ F(8,57)=4.067, p<.05)$. In term of the effect of the predictor variable, the results indicated that the couple adaptability at time one has a positive impact on the couple adaptability in the second wave $B=.467, p<.005$. In term of the impact of the time spent, the results revealed that there is no significant impact on the couple adaptability. The results provided in Table 11.16.

Table 11.16 The influences of the time spent on Internet activities on couple adaptability.

Predictor Variables	*B*	*p*
Couple Adaptability	0.47	.000
General	0.06	.620
Search	0.21	.172
Pleasure	-0.24	.178
Communicate	0.00	.999
Game	0.13	.359
Friendships	-0.07	.697
Shop	0.21	.107

dependent variable: Couple adaptability (time two). Predictors: Couple Adaptability, and time spent on Internet activities.(Time Two)

11.5.4.2.5 Summary:

The previous section presents the results of the impact of using the Internet activities and time spent online on the couple system (cohesion and adaptability). At time one, the results showed that the search online activity and pleasure online activity had an impact on the couple cohesion and adaptability, while, at time two this impact have become non-significant. However, two online activities became significant impact on couple cohesion and adaptability. it was found that using the Internet for making new friends via online has a negative impact on couple cohesion. Also, the communication online has a positive impact on couple adaptability.

In term of time spent online, at the time one it was found that time spent on search online and on pleasure have affected the couple cohesion and adaptability, while at time two, the results indicated that the time spent online become non-significant impact. Also the summary of the results provided in Table 11.17.

Table 11.17 A summary of the significant impact of the Internet aspects on the couple cohesion/adaptability.

Online Activities	Couple Cohesion		Couple Adaptability	
	Cross Sectional	Longitudinal Study	Cross Sectional	Longitudinal Study
Search Online	(+).sig	ns	(+).sig	ns
Pleasure Online	(-).sig	ns	(-).sig	ns
Communication Online	ns	ns	ns	(-).sig
Friendship Online	ns	(-).Sig	ns	ns
Game Online	ns	ns	ns	ns
Shop Online	ns	ns	(-).sig	ns
Time Spent Online	Time One	Time Two	Time One	Time Two
General	ns	ns	ns	ns
Search	(+).sig	ns	(+).sig	ns
Pleasure	(-).sig	ns	(-).sig	ns
Communication	ns	ns	ns	ns
Game	ns	ns	ns	ns
Friendships	ns	ns	ns	ns
Shop	ns	ns	ns	ns

11.5.4.3 Internet and psychological well-being:

This section is to examine the direct impact of the Internet usage on individual psychological well-being under this study over the time.

11.5.4.3.1 H.2.9 There is an impact of using the Internet activities over the time on the self-esteem.

In order to examine this hypothesis, the multiple regression was employed and the score of the self-esteem in the second wave was entered as the dependent variable, while the score of

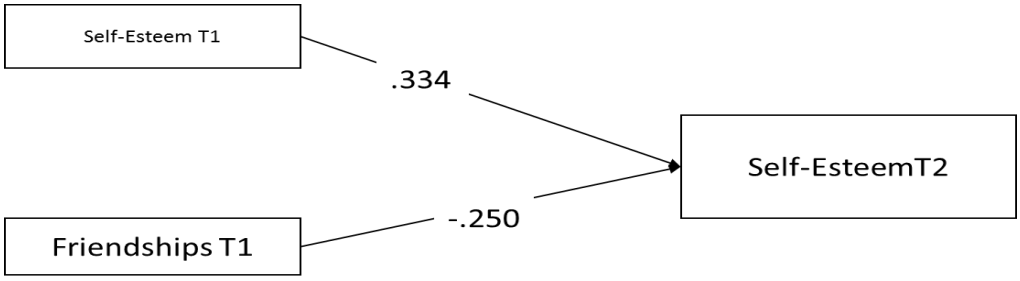
the self-esteem in the first wave alongside with the five Internet activities as the predictor variables. The results showed that the predictor variables have explained about a quarter of the sample variance, R^2=*.24 F(4,73)=5.454,P<.005)*. In term of the impact of each predictor variables the results indicated that the self-esteem time one has impact the self-esteem time two *B=.33, p<.05*. In term of the Internet activities only one activity has a negative impact on the self-esteem which is friendships *B=-.25*, p<.05. The results also provided in Table 11.18 and Figure 11.7.

Table 11.18 The influences of the Internet activities on self-esteem.

Predictor variables	*Beta*	*p*
T1-Self-esteem	*0.33*	*.003*
T1-friendships	*-0.25*	*.023*

dependent variable: Self-esteem (time two). Predictors: Self-esteem, and Internet activities.(Time Two)

Figure 11.7 Model Five; Internet activities and self-esteem model.



11.5.4.3.2 H.2.10 There is an impact of spent time on the Internet activities over the time on the self-esteem.

To investigate the impact of the time spent online on the self-esteem, the self-esteem of the first time was entered along with the time spent on online activities. The results indicated that about 20% of the sample variance in self- esteem in the second wave was explained by R^2*= .19 (F (8,73) =2.01,p>.05, and not significant*. The results also showed in self-esteem in the first wave impact self-esteem second wave *B=.414, p<.05*, while the results revealed that there was no effect of the time spent online in the second wave on the self-esteem time two. The results presented in Table 11.19.

Table 11.19 The influinces of the time spent on Internet activities on self-esteem.

Predictor variables	*Beta*	*P*	*Sig*
SES	0.41	.001	Sig
General	-0.11	.366	ns
Search	-0.14	.331	ns
Pleasure	0.19	.185	ns
Communicate	0.005	.969	ns
Game	0.16	.248	ns
Friendships	-0.15	.331	ns
Shop	-0.02	.871	ns

dependent variable: Self-esteem (time two). Predictors: Self-esteem, time spent on Internet activities. (Time Two)

11.5.4.3.3 H.2.11 There is an impact of the Internet activities over the time on loneliness.

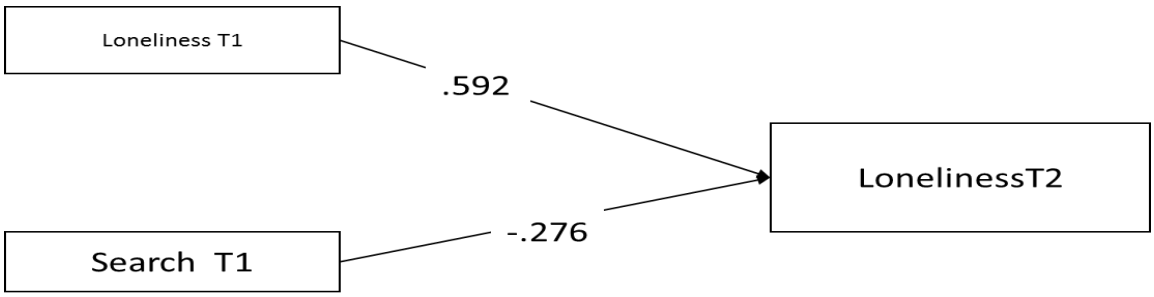
In order to examine this hypothesis, the multiple regression was employed and the score of the loneliness in the second wave was entered as the dependent variable, while the score of the loneliness in the first wave along with the five Internet activities as the predictor variables. The results showed that more than 50% of the sample variance in loneliness was explained $R^2=.54\ F(5,73)=16.131, P<.005$). In term of the impact of each predictor variables the results indicated that the loneliness time one has impact the loneliness time two $B=.59$, $p<.005$. In term of the Internet activities only one activity has a negative impact on the loneliness which is search $B=-.27, p<.05$. The results also provided in table 11.20 and figure 11.8.

Table11. 20 The infliunces of the Internet activities on loneliness.

Predictors	*Beta*	*p*	*Sig*
loneliness	0.59	.000	Sig
search	-0.28	.023	Sig

dependent variable: Loneliness (time two). Predictors: loneliness , and Internet activities.(Time Two)

Figure 11.8 Model Six; Internet Activities and loneliness model.



11.5.4.3.4 H.2.12 There is an impact of the time spent on Internet activities over the time on loneliness.

To investigate the impact of the time spent online on the loneliness, the loneliness of the first time was entered along with the time spent on online activities. The results indicated that the nearly 50% of loneliness in the second wave was explained by Internet usage $R^2 = .46$,$F(8,73) = 7.00, p < .005$. The results also showed that only the loneliness in the first wave impact loneliness second wave $B = .65$, $p < .05$, while the results revealed that there was no effect of the time spent online in the second wave on the loneliness time two. The results presented in Table 11.21.

Table11. 21 The infiulunces of the time spent on Internet activities on loneliness.

Predictor variables	*Beta*	*P*	*Sig*
Loneliness	0.66	.000	Sig
General	0.001	.989	ns
Search	-0.06	.635	ns
Pleasure	0.05	.647	ns
Communicate	-0.05	.651	ns
Game	-0.13	.269	ns
Friendships	0.12	.345	ns
Shop	0.03	.764	ns

dependent variable: loneliness (time two). Predictors: loneliness, time spent on Internet activities. (Time Two)

11.5.4.3.5 H.2.13 There is an impact of the Internet activities over the time on satisfaction with family life.

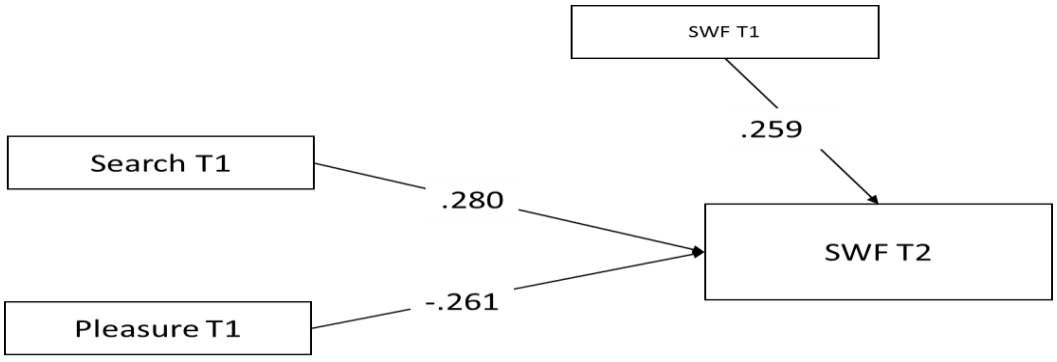
In order to examine this hypothesis, the multiple regression was employed and the score of the satisfaction with family life in the second wave was entered as the dependent variable, while the score of the satisfaction with family life in the first wave along with the five Internet activities as the predictor variables. The results showed that the predictor variables have explained approaching 25% of the sample variance $R^2=0.23, F(5,73) =4.12, P<.005$). In term of the impact of each predictor variables the results indicated that the satisfaction with family life time one has impact the satisfaction with family life time two $B=0.26, p<.05$. In term of the Internet activities, the results indicated that the search online has significant impact on the SWF $B=0.28, p<.05$. However, the pleasure activity has a negative impact on the SWF $B=-0.26, p<.05$, while the rest of activities become non-significant. The results also provided in Table 11.22 and Figure 11.9.

Table 11.22 The infiulunces of the Internet activities on satisfaction with life (SWFL)

Predictor variables	*Beta*	*p*	*Sig*
SWFL	.26	.020	Sig
search	.28	.015	Sig
Pleasure	-.26	.027	Sig
Game	-.16	.160	ns
Friendships	-.12	.312	ns

dependent variable: SWFL (time two). Predictors: SWFL, and Internet activities.(Time Two)

Figure 11.9 Model Seven; Internet activities and satisfaction with family life (SWFL) model.



11.5.4.3.6 H.2.14 There is an impact of spent time on the Internet activities over the time on satisfaction with family life.

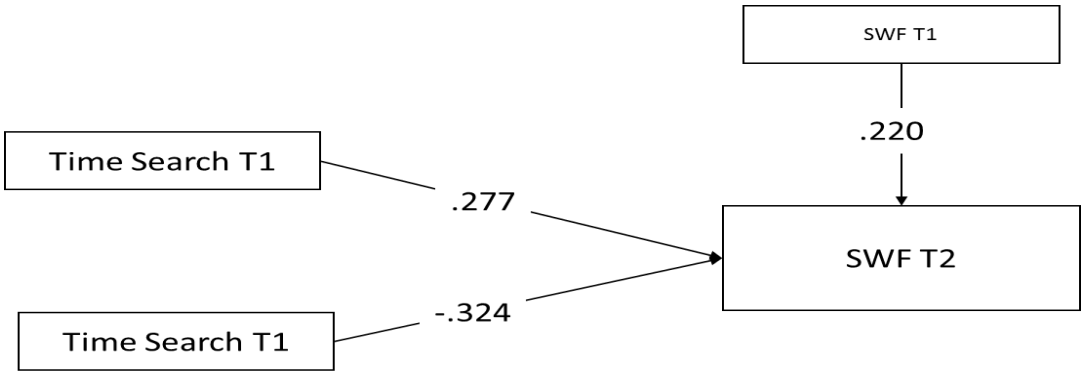
To investigate the impact of the time spent online on the SWF, the SWF of the first time was entered along with the time spent on online activities. The results indicated that about 17% of SWF in the second wave was explained by the Internet usage $R^2 = .167$,$F\ (3,73) = 74.191$, $p<.05$. In term of the impact of each predictor variables, the results showed that the SWF in the first wave impact SWF second wave $B=0.22$, $p=.05$, while the impact of the time spent online two predictors become significant. The first one is time spent on search and it impacts the SWF positively $B=0.28$,$p<.05$. While the time spent on pleasure has a negative impact on the SWF $B=-0.32$, $p<.05$. The results presented in Table 11.23and Figure 11.10.

Table 11.23 The influences of the time spent on Internet activities on Satisfaction with family life.

Predictor variables	*Beta*	*P*	*Sig*
SWFL	0.22	.05	Sig
Search	0.28	.042	Sig
Pleasure	-0.32	.019	Sig

dependent variable: SWFL (time two).Predictors: SWFL, and Internet activities.(Time Two)

Figure 11.10 Model Eight Time spent on Internet activities and SWFL model.



11.5.4.3.7 H.2.15 There is an impact of the Internet activities over the time on satisfaction with life (SWL).

In order to examine this hypothesis, the multiple regression was employed and the score of the SWL in the second wave was entered as the dependent variable, while the score of the

SWL in the first wave along with the five Internet activities as the predictor variables. The results showed that the predictor variables Internet usage do not explain SWL well have explained about R^2=.139 F (7,73) =1.519, P=176). As a result of the SWL model with the Internet activities become non-significant no further analyses were carried out. Moreover, the time spent online does not explain SWL.

11.6 Summary:

This section investigated the direct impact of the online activities and time spent online on psychological well-being over the time. At the first time of this study (Cross-Sectional Study), it was found that some online activities have an impact on the psychological well-being. For example, using the Internet for search, pleasure, and shopping activities have a direct impact on self-esteem, loneliness, family satisfaction and life satisfaction. This results confirmed by the study at time two that the Internet activities can affect the well-being, and some of activities became significant impact such as friendships, and game. In this results, however, the impact of Internet activities on the life satisfaction have become non-significant.

In term of the time spent online, the results showed that only the family satisfaction has been affected by it. While, there is no impact of the time spent online on the other well-being variable.

The different results between the cross-sectional study and the longitudinal study might be related to the statistics methods. In the cross-sectional study, the Structural Equation Modelling was used which enable to investigate all the interaction and effects among all the variables under the study, while in the longitudinal study the multiple regression was used and it couldn't investigate the effects of the independent variables on the more than one dependent variable. Also, the size of the sample in the longitudinal study was dropped to be

only 74 participants which might provide different type of results. However, the most important thing is that the Internet activities and time spent on them have more impact on the family process variables more than psychological well-being variables. In other words, this study confirmed that the family process variables are mediated the relationships between the Internet usage and psychological swell-being. The summary of the impact of the Internet usage on psychological well-being is provided in Table 11.24.

Table 11.24 A summary of the influences of the two aspects of the Internet usage on well-being.

Online Activities	Self-esteem		Loneliness		SWFL		SWL	
	Cross-sectional	***Longitudinal***	***Cross-sectional***	***Longitudinal***	***Cross-sectional***	***Longitudinal***	***Cross-sectional***	***Longitudinal***
Search Online	**(+).sig**	Ns	**(-).sig**	**(-).sig**	**(+).sig**	**(+).sig**	Ns	Ns
Pleasure Online	**(-).sig**	Ns	**(+).sig**	Ns	**(-).sig**	**(-).sig**	**(-).sig**	Ns
Communication Online	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns
Friendship Online	Ns	**(-).sig**	Ns	Ns	Ns	Ns	Ns	Ns
Game Online	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns
Shop Online	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns
Time Spent Online	Cross-sectional	longitudinal	Cross-sectional	longitudinal	Cross-sectional	Longitudinal	Cross-sectional	Longitudinal
General	**(+).sig**	Ns	Ns	Ns	Ns	Ns	Ns	Ns
Search	Ns	Ns	Ns	Ns	Ns	**(+).sig**	Ns	Ns
Pleasure	Ns	Ns	Ns	Ns	Ns	**(-).sig**	Ns	Ns
Communication	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns
Game	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns
Friendships	**(-).sig**	Ns	**(+).sig**	Ns	Ns	Ns	Ns	Ns
Shop	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns

11.7 H.2.9 There is an impact of family and couple functioning on psychological well-being:

This section is to investigate the influences of family functioning on individual psychological well-being. The first model represents the impact of family functioning represented by family cohesion and adaptability on loneliness. The second model represents the impact of the family functioning on self-esteem, and the final models is to provide the impact of family functioning on the satisfaction with family life and with life in general.

11.7.1 Family and couple functioning and loneliness model:

To investigate the impact family functioning on the loneliness, the family cohesion, adaptability, and loneliness performance at time one were entered as predictor variables, and loneliness performance at time two as a dependent variable. The results indicated that about more than 60% of loneliness in the second wave was explained by the family functioning R^2*=0 .61 ,F (3,73) =36.57, p<.005*. In term of the impact of each predictor variables, the results showed that the loneliness in the first wave impact positively loneliness at second wave *B=0.51, p=.005*. However, the impact of the family functioning is negative, *B=-0.37and, p<.05,* but not significant for the family adaptability *B=-0.08,p>.05*. The full results are provided in Table 11.25 and Figure 11.11.

Moreover, the results of the couple indicated that nearly 50% of the loneliness was explained by the couple cohesion and adaptability R^2*= 0.48, F (3,57) =16.91, p<.005.* In term of the significant effects on the loneliness, the results showed that only couple cohesion has a significant impact on the loneliness *B=-0.36, p<.05.* The full results are provided in Table 11.26 and Figure 11.12.

Table 11.25 The influences of family cohesion, adaptability on loneliness

Predictor Variables	*Beta*	*p*	*Sig*
Loneliness	*0.51*	*.000*	*Sig*
Family Cohesion	*-0.373*	*.003*	*Sig*
Family Adaptability	*-0.075*	*.55*	*ns*

Dependent Variable: Loneliness (Time Two) Predictors: (Constant), Family Cohesion, Adaptability, and Loneliness. (Time One)

Figure 11.11 Model Nine; family functioning and loneliness model.

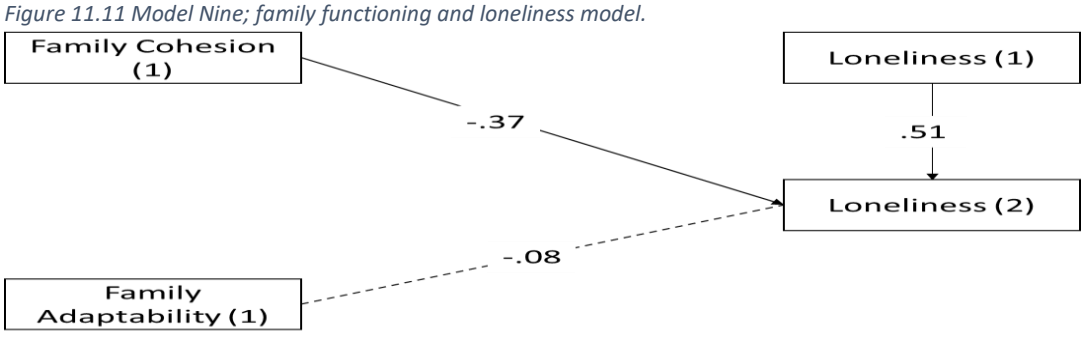
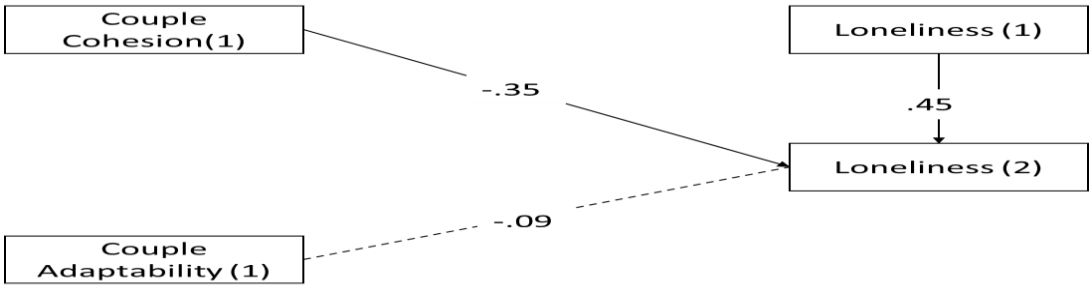


Table 11.26 the influences of couple cohesion and adaptability on loneliness.

Predictor Variables	*Beta*	*p*	*Sig*
Loneliness	*0.45*	*.000*	*Sig*
Couple Cohesion	*-0.34*	*.041*	*Sig ns*
Couple Adaptability	*-0.09*	*.55*	

Dependent Variable: Loneliness (Time Two) Predictors: (Constant), Couple Cohesion, Adaptability, and Loneliness. (Time One)

Figure 11.12 Model Ten; Couple functioning and loneliness model.



11.7.2 Family and couple Functioning and Self-esteem model:

To investigate the impact family functioning on the self-esteem, the family cohesion, adaptability, and self-esteem performance at time one were entered as predictor variables, and self-esteem performance at time two was entered as a dependent variable. The results indicated that nearly one third 30% of self-esteem in the second wave was explained by the family functioning $R^2=0\ .27, F\ (3,73) =8.45, p<.005$. In term of the impact of each predictor variables, the results showed that the self-esteem in the first wave impact positively by the self-esteem at second wave $B=0.312,\ p<.005$. Also, the family cohesion has a positive impact on the self- esteem $B=0.40, p<.05$. However, the results showed that the family adaptability has no significant impact. The results are provided in Table 11.27 and Figure 11.13.

In terms of the couple model, the results showed that about 20% of self-esteem was explained by the coupe cohesion and adaptability $R^2= 0.19,\ F\ (3,57) =4.46,\ p<.05$. In term of the impact of the predictor variables, the results showed that none of the predictors are

significant except the self-esteem performance at time one *B=-0.27,p<.05.* The full results are provided in Table 11.28 and Figure 11.14.

Table 11.27 The influences of the family cohesion and adaptability on self-esteem.

Predictor Variables	*Beta*	*p*	*Sig*
Self-esteem	*0.31*	*.000*	*Sig*
Family Cohesion	*0.41*	*.019*	*Sig*
Family Adaptability	*-0.06*	*.70*	*ns*

Dependent Variable: Self-esteem (Time Two) Predictors: (Constant), Family Cohesion, Adaptability, and Self-esteem. (Time One)

Figure 11.13 Model Eleven; family functioning and self-esteem model.

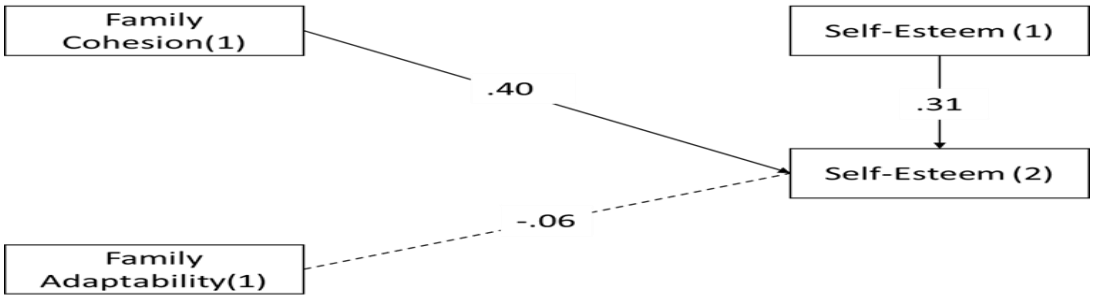
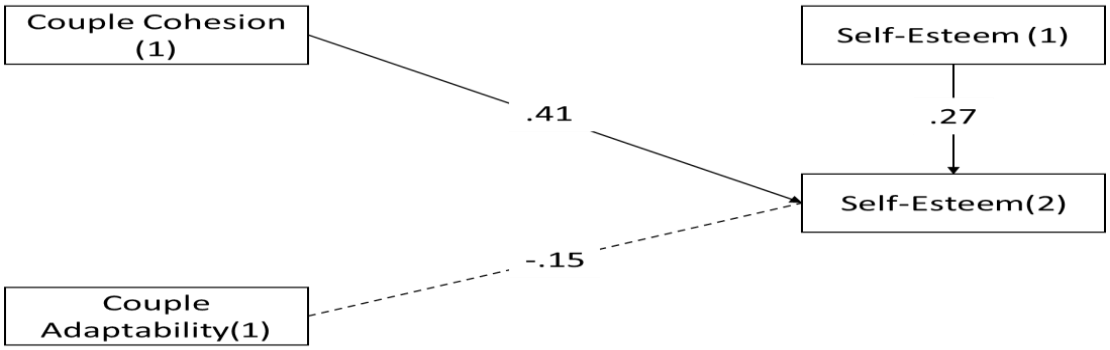


Table 11.28 The influences of the couple cohesion and adaptability on self-esteem.

Predictor Variables	*Beta*	*p*	*Sig*
Self-esteem	*0.27*	*.03*	*Sig*
Couple Cohesion	*0.41*	*.054*	*ns*
Couple Adaptability	*-0.156*	*.50*	*ns*

Dependent Variable: Self-esteem (Time Two) Predictors: (Constant), Couple Cohesion, Adaptability, and Self-esteem. (Time One)

Figure 11.14 Model Twelve; Couple functioning and self-esteem model.



11.7.3 Family and couple functioning and satisfaction with family life model:

To investigate the impact family functioning on the satisfaction with family life (SWFL), the family cohesion, adaptability, and SWFL performance at time one were entered as predictor variables, and SWFL performance at time two as a dependent variable. The results indicated a half 50% of SWFL in the second wave was explained by the family functioning R^2*=0 .49 ,F (3,73) =23.155, p<.005*. In term of the impact of each predictor variables, the results showed that the SWFL in the first wave impact positively SWFL at second wave *B=0.18, p<.05*. Also, the results indicated that the family cohesion and adaptability have a positive impact on SWFL *B=0.30, and 0.39, p>.05* respectively. The results presented in Table 11.29 and Figure 11.15.

Moreover, the results of the couple model indicated that about a quarter 25% of the SWFL was explained by the couple cohesion and adaptability R^2*= 0.258, F (3,57) =6.249, p<.005*. In term of the significant effects on the loneliness, the results showed that the couple cohesion and adaptability have no significant impact on the SWFL. The full results presented in Table 11.30 and Figure 11.16.

Table 11.29 The influences of family cohesion and adaptability on satisfaction with family life(SWFL).

Predictor Variables	*Beta*	*p*	*Sig*
SWFL	*0.18*	*.036*	*Sig*
Family Cohesion	*0.30*	*.033*	*Sig*
Family Adaptability	*0.39*	*.006*	*Sig*

Dependent Variable: SWFL (Time Two) . Predictors: (Constant), Family Cohesion, Adaptability, and SWFL. (Time One)

Figure 11.15 Model Thirteen; Family functioning and satisfaction with family life model.

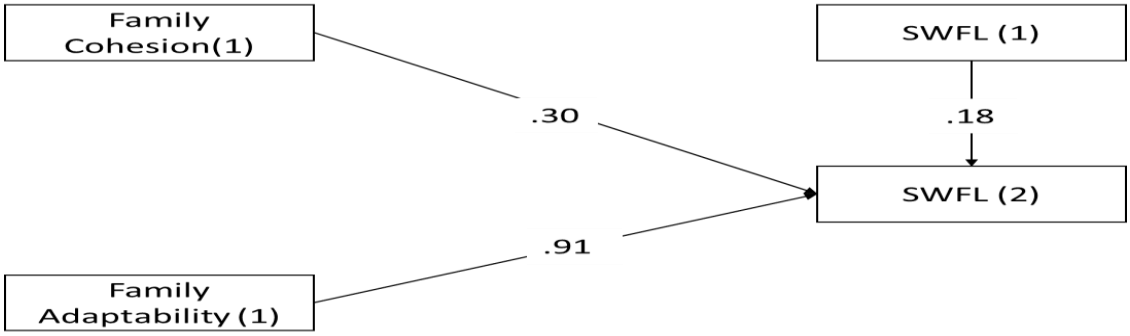
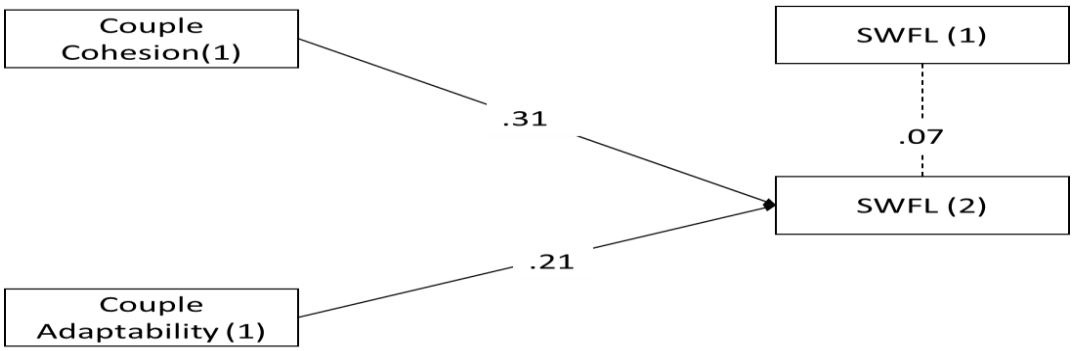


Table 11.30 The influences of couple cohesion and adaptability on satisfaction with family life(SWFL).

Predictor Variables	*Beta*	*p*	*Sig*
SWFL	*0.07*	*.000*	*Sig*
Couple Cohesion	*0.31*	*.12*	*ns*
Couple Adaptability	*0.22*	*.28*	*ns*

Dependent Variable: SWFL (Time Two) Predictors: (Constant), Family Cohesion, Adaptability, and SWFL. (Time One)

Figure 11.16 Model Fourteen; Couple functioning and satisfaction with family life model.



11.7.4 Family and couple functioning Satisfaction with life model:

To investigate the impact of family functioning on the satisfaction with life (SWF), the family cohesion, adaptability, and SWF performance at time one were entered as predictor variables, and SWF performance at time two as a dependent variable. The results indicated about forty 40% percentage of SWF in the second wave was explained by the family functioning R^2*=0 .36 ,F (3,73) =13.154, p<.005*. In term of the impact of each predictor variables, the results showed that the SWF in the first wave impact positively SWFL at

second wave *B=0.24, p<.05*. Also, the results indicated that the family cohesion has a significant impact on SWF *B=0.36,* while family adaptability showed no significant impact. The results presented in Table 11.31 and Figure 11.17.

Moreover, the results of the couple model indicated that about a quarter 25% percentage of the SWF was explained by the couple cohesion and adaptability R^2*= 0.23, F (3,57) =5.28, p<.005.* In term of the significant effects on the SWL, the results showed that the couple cohesion and adaptability have no significant impact on the SWF. The results presented in Table 11.32 and Figure 11.18.

Table 11.31 the influences of the family cohesion and adaptability on satisfaction with life (SWL).

Predictor Variables	*Beta*	*p*	*Sig*
SWL	*0.24*	*.015*	*Sig*
Family Cohesion	*0.35*	*.02*	*Sig*
Family Adaptability	*0.21*	*.18*	*ns*

Dependent Variable: SWL (Time Two) . Predictors: (Constant), Family Cohesion, Adaptability, and SWL. (Time One)

Figure 11.17 Model Fifteen; Family functioning and satisfaction with life model.

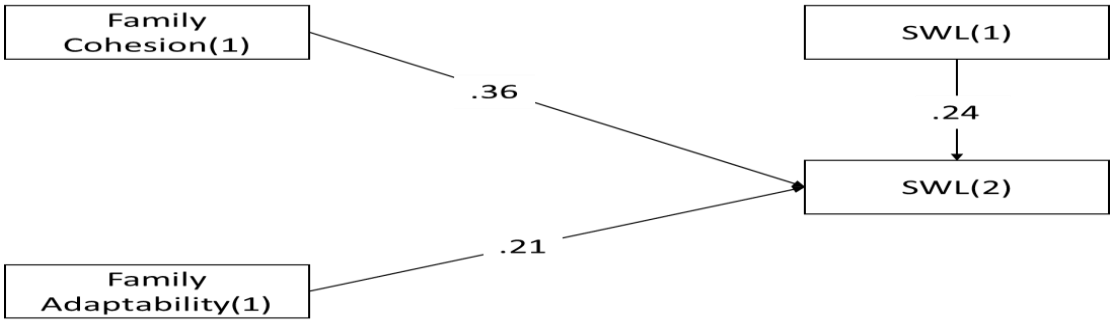
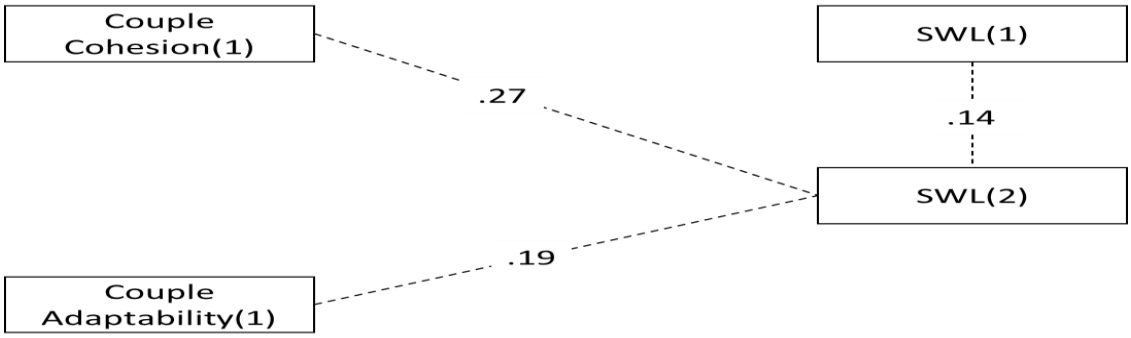


Table 11.32 The influences of couple cohesion and adaptability on satisfaction with life (SWL).

Predictor Variables	***Beta***	***p***	***Sig***
SWL	*0.14*	*.26*	*ns*
Couple Cohesion	*0.27*	*.19*	*ns*
Couple Adaptability	*0.19*	*.35*	*ns*

Dependent Variable: SWL (Time Two) Predictors: (Constant), Family Cohesion, Adaptability, and SWL. (Time One)

Figure 11.18 Model Sixteen; Couple functioning and satisfaction with life.



11.7.5 Summary:

The previous section is to examine the influences of family functioning on individual psychological well-being, loneliness, self-esteem, satisfaction with family life, and satisfaction with life. The results showed that family functioning; family/couple cohesion and adaptability can highly significant explain well-being in the cross sectional and longitudinal studies. However, some relations among the family /couple functioning in the longitudinal study became none significant on the well-being variables. The reasons might be because of the sample size and also because the technique of the statistical methods. A summary of the results of cross-sectional and longitudinal are provided in Table 11.33.

Table 11.33 A summary of the influences of the family functioning on psychological well-being

Variables & Studies	Loneliness		Self-Esteem		SWFL		SWL	
	Cross-sectional	longitudinal	Cross-sectional	longitudinal	Cross-sectional	longitudinal	Cross-sectional	longitudinal
Family Cohesion	(-).sig	(-).sig	(+).sig	(+).sig	(+).sig	(+).sig	(+).sig	(+).sig
Family Adaptability	(-).sig	Ns	(+).sig	Ns	(+).sig	(+).sig	(+).sig	(+).sig
Couple Cohesion	(-).sig	(-).sig	(+).sig	Ns	(+).sig	(+).sig	(+).sig	Ns
Couple Adaptability	(-).sig	Ns	(+).sig	Ns	(+).sig	(+).sig	(+).sig	Ns

12. Chapter Twelve: Discussion. Chapter Twelve: Discussion.

12.1 Introduction:

The current study seeks to explore the influences of using Internet and being online in two main variables of people's life family and well-being. This study was conducted on Saudi sample lives in two different places United Kingdom and Saudi Kingdom which brings good data that could give better idea about the impact of the Internet usage on family functioning and well-being. The outcomes of the current work found out that the concept of the Internet defined by determined different online activities and time spent on these online activities and examine each one's impact on the family/couple functioning and well-being. The current study found that the Internet can predict positively and negatively the family/couple functioning and well-being.

The results of the current work obtained through the process that provided several studies; pilot study (chapter 6), cross-sectional study (chapter 10), and longtudinal study (chapter 11), that the Internet usage has associated with the variables under study.

The main results of this work are consisted with previous works that found out that Internet could predict positively the family functioning (i.e. Mickus & Luz;2002; Lanigan et al,2009; Stevenson,2011; Kennedy &Wellman,2007) and could predict the family functioning negatively (i.e. Mesch;2003;2006; Lee,2007; and Valenzuela,2014). Also, it was found that the results support the previous studies in terms of the influences of using the Internet on well-being (i.e. Chritopher,2000; Morhan,2003; Mesch,2001; Yao,2014; Lissitsa, 2016; Stepanikova,2010). The results help to address the main aims of the present work which were:

1) To investigate the impact of Internet usage on family functioning.
2) To investigate the impact of Internet usage on couple functioning

3) To investigate the impact of Internet usage on psychological well-being.

4) To investigate the impact of Internet usage on Well-being through family and couple functioning.

It cannot be said that the entirely online activities have a negative or positive impact on the family functioning but it would depend on the type of the online activities. The outcomes revealed that some of the online activities predict negatively and positively the level of family functioning. For example, using internet for listening for sound clips or watching movies, and making new friends relationships via the Internet are more likely to reduce the family cohesion. In contrast, using the Internet for education purposes or maintain the existing off-line relationships by communication online such as relatives or maybe friends invest in increasing the family functioning.

Similarly, Internet usage especially for educational purposes or communication relatives or friends online revealed that would lead to increase the couple functioning. While, watching or listening and making new friends relationships that not existing off line can decrease the level of couple functioning.

In terms of the influences of using the Internet on individual psychological well-being. The results showed that satisfaction with family life is the most psychological well-being predicted by the online activates compared with other. For example, it revealed that the shopping online helps to increase the satisfaction of the family life as well as using the Internet for educational purposes. However, game, watching, and listening online activities were found as negative predictors of satisfaction with family life.

Self-esteem is found as the second psychological well-being variable that is impacted by the online activities. The results showed that self-esteem can be increased by time spent in

general regardless of the material of the Internet, while, self-esteem and satisfaction with life are decreased by game online. While, game online predicts the feeling of being lonely.

The current study developed the model that proposed that the Internet can impact the well-being through family/couple functioning more than direct impact. The results of the study revealed a support of this model, it showed that most of the direct impact of online activities on well-being disappeared when the family/couple functioning mediated the direction apart from game and shopping online. Also, it was found that the Internet has more impact on family and couple functioning at cross-sectional and longitudinal studies compared with Internet's impact on well-being.

This study is considered as the first exploration that provides a richer picture of Internet use on family/ couple functioning and psychological well-being in Saudi society. Also, this work could be used as an important guidance for Internet users in Saudi society, especially parents in family, educational institutions, and councillors to increase users' awareness of the positive and negative impact of the Internet. Finally, it should be noticed that this work is limited in relation to the sample used that a large portion of participants was obtained from UK resident Saudi nationals and KSA.

12.2Patterns of Internet Usage

12.2.1 Number of Devices:

All of the sample claimed to have at least one device from the list of the devices in the questionnaire: a smart phone, tablet, laptop, desktop or console. These findings provide an indication that the Internet has become part of people's lives in Saudi society and they are increasingly likely to be online. Also, the results suggest that most of the participants prefer smart phones. The possible reasons behind this might be because the smart phone nowadays

has similar features to other devices such as tablets, laptops and console, but it is more portable and easily connects users to the internet.

More than 70% of the sample have used the Internet for more than five years. Due to competition among Internet providers in Saudi Arabia like STC, Mobily and Zain, Internet access has become available to the public covering almost all Saudi regions (CITC,2009, Alzoman,2012). Moreover, the price for subscription with Internet access has become more affordable for many users. The income of the sample is more than the average in Saudi society which allows participants to have continuous access to the internet. Similarly, most of the current sample are highly educated and may encourage themselves and their family members to take advantage of the internet. Also, nowadays most of the government departments in Saudi Arabia use e-government to facilitate citizen's requirements which makes people use the Internet rather than visit these institutions (Alzahrani,2012). The UK residents in the sample are from the same segment of society (working mostly at UK universities).

12.2.2 Internet Activities:

The results revealed several different purposes that Saudi people use the Internet for. Six main Internet activities were indicated as follows: *Searching refers to reading and surfing for information, Pleasure refers to watching and listening online, Communication refers to communicate with people who users already know them and rise any issue that can be discuss, Gaming refers to play games online, Friendships refers to make new friends online and make comments for any posts, and Shopping refers to buy products online*. As the Internet is used by different generations, Internet activities may be used differently from one generation to another and from one gender to another. The sample consisted of different

ages starting from 12 years up to 54 years old, different genders, and different statuses which might explain differences in Internet activities.

These findings are similar to the findings of many previous studies (CITC,2007; King Abdul-Aziz of Technology and Science, 1999; Al-Tawil,2001; Simsim,2011; Alzoman,2012). In addition, due to the development of Internet shopping online becomes one purposes of using the Internet but it was not previously shown in the other studies.

12.2.3 Time spent on online activities:

The results indicate the sample spent on average five hours or above per week depending on the type of the Internet activity. Young users spent more time on the Internet compared with their parents. Sons were found to spend more time on online activities like pleasure, gaming, friendships and shopping, while daughters were found to be online in general, especially at weekends, regardless of the Internet activity. The amount of time adolescents spend online may be why most of the studies on the impact of the Internet on people's daily lives focus on adolescents (Mesch, 2003; 2006). Time spent on the Internet can be increased or decreased based on the time of the week. For example, time spent on Internet during weekdays is more than time spent at weekends. This may be because many families in Saudi Arabia like to spend holiday time together and because Saudi society follows Islamic norms in terms of the importance of family making family relationships stronger (Alssif, 2010).

A possible reason for the Internet to become more attractive for young users nowadays is that it provides different applications in the domain of social media, like Facebook, Snapchat and Instagram. These applications enable users to do many activities like sharing photos, communicating with each other, making comments, making new friends or connecting with

existing friends. Thus, one of the largest challenges in the current study was to measure the actual time spent online.

Furthermore, mothers were found in particular to spend more time shopping online compared with fathers. This may be because many families in Saudi society significantly depend on fathers who spend more time outside the home meeting the family needs. If follows that fathers spend less time on online activities and mothers may have more free time. Moreover, the alternative explanation may be related to the activities women in Saudi society can do outside of the home as these are more limited compared to activities men can do. Thus, women may find the Internet a good environment in which they can spend their time. Also, in light of economic developments in Saudi society, many families employ housemaids in order to help in the house which permits mothers to have more free time (Alkatib, 2007; Alatibi, 2014).

Additionally, the differences of time spent on online activities for each member of family between their performance at weekdays and weekends were assessed. The results found that the parents users reduced the time spent on three online activities which were time in general, pleasure, and friendships online compared with young users at weekends compared with weekdays. The probable reasons for that are might be because new generation is attracted by the Internet and they might feel that the Internet is really useful compared with the previous generation. Also, it might be related to the responsibilities that parents should take towards family's need so weekends are most likely to be spent with family members. Furthermore, it could be due to level of awareness differences between parents and children.

12.3 Models:

12.3.1 Internet usage, family/couple functioning and well-being:

The hypothesised models investigated the impact of Internet usage on family functioning and psychological well-being. In these models the influences of using Internet (Internet activities and time spent online) on well-being, self-esteem, loneliness, satisfaction with family life and satisfaction with life, is mediated by family/couple functioning (Family/couple cohesion, and adaptability). The hypotheses in general received good support. All in all, four models were established and each model is discussed in the following sections.

12.3.1.1 Internet Usage, Family functioning, and wellbeing.

Two models were developed in order to investigate the impact of Internet usage on family functioning and well-being. The two models (1,2) were established in order to examine the impact of Internet usage (Internet activity and time online) on family functioning (cohesion and adaptability) and well-being (self-esteem, loneliness, satisfaction with life, and with family life).

Six online activities have been determined consisting of; search, pleasure, communication, gaming, friendships, and shopping online. Also, seven different categories of time spent online were determined consisting of; time in general, time on search, time on pleasure, time on communication, time on gaming, time on friendships and time on shopping. The results showed that all the two models of family have a good model fit based on the indices that have used (See Chapter 8). The structure of following discussion begun with the positive impact of the online activities and time spent on family functioning and then moved to negative impact. Also, the results of the longitudinal study are included here.

12.3.1.1.1 Search Online and Family Functioning:

Using the Internet for search and time spent on this activity have a significantly positive impact on family cohesion and adaptability. This means the level of family cohesion and adaptability can be predicted increasingly by using the Internet for searching and spending time on this activity. Results are consistent with results of previous studies (Turow&Nir,2000; Belch,2005; Mesch,2003;2006; Lee,2007).

A possible explanation for these results is that a positive attitude towards education in Saudi families, as is the case with many families around the world. Nowadays, the Internet is a source for many lectures, books and articles which can help students improve their skills and knowledge. Also, since the families consider the Internet as a worthy educational resource parents are more likely to buy devices for their children to enable them benefit from the Internet. This encouragement and support from the family is more likely to be perceived by children as parental support which makes children feel more attached to their parents and increases family cohesion. Furthermore, using the Internet for searching purposes may be good for family members, especially giving parents a better understanding of their children's age appropriate behaviour leading to them becoming closer to each other, therefore increasing family cohesion.

The Alternative possible is may be related to the demographic information of the current sample. It includes sample of Saudi participants who were studying in the UK for different type of degree so most of the participants are highly educated which giving them awareness of the importance of using the Internet for education. Therefore, participants were more likely to use the Internet for educational purposes and for extending their knowledge and skill base. Additionally, the positive impact of the use of the Internet for search purposes on family functioning was further confirmed over the time in the longitudinal study.

12.3.1.1.2 Communication online and Family Functioning:

The results showed that the communications online is not significantly impact the family functioning in the cross-sectional study however, it became a significantly positive factor for family functioning over the time. This result consistent with other previous studies (Mickus & Luz,2002; Lanigan,2009; Stevenson, 2011;Lee,2007), who considered it an alternative way to increase and maintain relationships among family members.

Three questions in the Internet activities scale to measure the importance of using online communications with family members and relatives to help maintain relationships among family members.

Many families became nuclear families where just parents and children live together and people migrated to different cities looking for jobs to gratify family needs after the discovery of petroleum in Saudi Arabia (ALssif,2010). However, people in Saudi society still have a sense of the importance of extended family and try to maintain their relationships beyond the nuclear family (ALssif,2010). It became difficult for family members to meet each other even sometimes occasionally in events like celebrations for religious day, weddings and so forth. Online communications became an alternative way for them to contact other family members and maintain relationships.

The other possible explanation of this might be related to the demographic information of the sample. Half of participants in the current sample lived in the UK for studying so the communication online is an important way to maintain relationships with family in KSA.

12.3.1.1.3 Pleasure online and Family Functioning:

The results suggested that using the Internet for pleasure, and time spent on it had a negative impact on family functioning. The results of the present study are consistent with previous research by Mesch, (2006) who determined that watching and listening on the

Internet as non-social activity, could lead to family conflicts and reduce the level of family functining. Also, Lee (2007) suggested the impact of Internet usage on family variables can be different based on different Internet activities that family members use.

The Internet provides users with audio and visual materials like listening to music, watching movies and TV programs. These materials have become available for people online with basic Internet access as the only requirement. A possible reason of negative impact of online pleasure on family functioning is that the Internet makes watching and listening materials available users to select favoured content and also new devices such as smart phones and tablets encourage users to watch what they like individually. For example, in the past, family members would sit together in one room to watch their favourite programmes or movies possibly allowing members to address issues related to the programme and sharing their opinions. However, users nowadays are more likely to use their devices individually and are less likely to share audio materials with other family members. YouTube, for example, provides a large amount of online material allowing users to keep watching programs, it also provides users access to favourite programme serials, and even recommends other related material.

Alternatively, parents may be afraid of what materials that the Internet provides to their children. Children are more likely to be exposed to unwanted material such as violence or pornography. Moreover, pleasure gained online means family members are unable to share their hobbies and activities together, in turn possibly leading to family conflict (Alssaif,2010). However, the results of the impact of Internet use for the pleasure and the time spent on it became non-significant in the longitudinal study**.**

12.3.1.1.4 Friendships online and Family Functioning:

Furthermore, results suggest that spent time with online friendships has a significantly negative impact on family cohesion. These results are consistent with the findings of (Lee, 2007; Mesch, 2003; Mesch, 2006; Valenzuela, 2014). They suggested that using the Internet for chatting with strangers could lead to a decrease in the level of family cohesion and adaptability. Comparing the previous independent variable, communication with the current variables, the previous one is to communicate with family members and relatives, but in this variable, users creating new relationships with friends that never exist in real life.

According to the Circumplex model that one of the significant factors that increases family cohesion is that family member's friends should be known and accepted by other family members (Olson,1992). Parents always care and protect their children by giving advice on how to choose their friends. Also, they monitor their children, helping them to avoid bad friends who effect behaviour, considering bad friends to be a threat. However, the Internet nowadays provides its users many websites where they can create new friends. The Internet transfers the relationships and creates new friends from real life to those created in online environments. Users nowadays can easily have friends from different cultures and different religions. Thus, parents try to observe the websites their children visit as they are afraid of their children being influenced by friends there. Many parents are more likely to discourage this type of friendship as they do not know or fully understand the background of these strangers. In Saudi society, Islamic religion is considered an important thing that parents try to encourage their children to follow. Thus, parents might think that the purpose of using the Internet might negatively impact children's beliefs.

Also, online friendships might lead users, especially young users, to share and expose their family's information with strangers. This flow of information with others who are not related to the family drives to weaken the family boundaries which, also is considered by parents as

a risk. Moreover, building friendships online could lead users to be more likely exposed to dangerous situations such as sexual harassment or victimization. According to the Circumplex Model, discussing family problems with others not related to the family is considered a negative factor leading to a decrease in the level of cohesion. Results of negative impact of online friendships became significant in the results of the second stage.

12.3.1.2 Internet usage Couple functioning and well-being models:

The hypothesised models investigate relationships among the main variables; Internet usage, couple functioning, and psychological well-being. In these models relationships between the Internet usage (Internet activities and time spent online) and well-being, self-esteem, loneliness, satisfaction with family life and satisfaction with life, is mediated by couple functioning (Couple Cohesion, and Adaptability). In these four models the single status was excluded although the married status remained. The hypotheses were supported. All in all, twelve models were established and each model will be discussed in the following sections.

12.3.1.2.1 Search online and couple Functioning:

The results revealed that using the Internet for search purposes and time spent on this activity have a positive impact on the couple cohesion ad adaptability.

These results are consistent with the previous results of the entire family. Explanations are provided in this section in terms of the positive impact of searching online on couple cohesion, which have been previously provided. Using the Internet for extending a couples knowledge has many advantages in terms of increasing their cohesion. For example, education leads to knowing rights and duties in married life.

Moreover, education is an important way which Internet make it available to learn the rights they have and what should they do each other. In Saudi society, as mentioned before, the relationship can be determined by Islamic instructions and consequently many websites have been established to provide a couple with information related to relationships.

The results of the longitudinal study indicated that the impact of using the Internet for searching online became non-significant but still positive.

12.3.1.2.2 Communication online and Couple Functioning:

In addition, the results of the longitudinal study revealed that communication with other relatives via online access is associated positively with couple adaptability.

This positive impact might be because communication with other family members could help maintain relationships between couples, as mentioned before. Also, the participants in the current study were living in different places when the study was being conducted. Also, communication might provide additional chances for couples to discuss anything related to decision making.

12.3.1.2.3 Pleasure online and Couple Functioning:

In contrast, the results of the cross sectional study suggested that online pleasure and time spent on it 'which is using the Internet for watching and listening' have a negative impact on couple cohesion.

These results are consistent with previous models of the entire family with possible reasons similar to those provided in the results for the whole family. Using the Internet for watching and listening might lead to ignoring others feelings, less support might be received from

each other, and also less time might be spent with each other. Furthermore, being busy on the Internet might lead to disruption in communication reducing the likelihood to discuss relationship problems, finding out satisfactory solutions and also sharing interests.

Similarly, the results suggested that online pleasure and time spent on it decreases the level of couple adaptability.

This might be because couples reduce their communication giving rise to some difficulties surrounding their ability to change rules and their roles. Also, sharing house responsibilities can be overlooked by couples which leads to an inflexibility rule effecting the balance of adaptability.

This effect, however, became non-significant in the results of the longitudinal study.

12.3.1.2.4 Friendships online and Couple Functioning:

In addition, the results of cross culture suggested that online friendships might lead to a decrease in couple cohesion with this result becoming significant in the results of the longitudinal study.

Making new friends and making comments might lead to increases in couple conflicts and a decrease in marriage happiness. These results are consistent with the previous study of Sebastian Valenzuela (2014), who claimed that use of Social Networking is associated with some variables that represent marriage conflicts such as marriage quality or thoughts of separating troubled relationships. Moreover, this result might explain increased rates of divorce in Saudi society. This result is consistent with the study of Jowaher (2005) who did a survey on reasons for divorce, and she found the Internet is considered one reason for divorce in Saudi society.

12.3.1.3 Direct Impact of Internet usage on well-being.

Results on the impact of Internet usage on psychological well-being is split into two sections. The first section discusses results obtained from the cross sectional study showing the direct impact of Internet usage on well-being. In this cross sectional study, the relationships between Internet usage and individual psychological well-being is mediated by family/couple cohesion and adaptability. These results were presented in models one to four. The second section discusses results obtained from the longitudinal study. In this section the relationships amongst Internet usage and individual psychological well-being are not mediated by the family/couple cohesion and adaptability. This division is due to different statistical methods used in the cross sectional and longitudinal studies. The cross sectional study uses Structural Equation Modelling (SEM) enabling inclusion of all variables in one model, but is also helped by the sample size which allows this method to be used. However, in the longitudinal study the sample size was decreased which lead to difficulties in meeting the requirements of using SEM. Therefore, multiple regression was used in the longitudinal study.

12.3.1.3.1 Cross Sectional study: the impact of Internet usage on well-being.

The two models of the family have also investigated the direct impact of online activities and time spent on them. In general, the direct impact showed that is most of online activities have no direct impact on the psychological well-being except shopping online showed that can predict positively the satisfaction with life and family life.

Similarly, **the time spent online activities the results suggested that time spent in general, regardless of the Internet material, could decrease the level of self-esteem.**

This result is consistent with other studies findings (Mesch,2006; Stepanikova,2010) who claimed that Internet usage can lead to a decrease in the level of self-esteem especially using the Internet for social purposes, indicated here by friendships. Friendship is represented by using the Internet to make new friends online and commenting on their friends' activities. The comments that users might receive from other users may lead to a reduction of the level of self-esteem. This result is consistent with the results of Valkenburg (2006) who suggested that negative comments users received from others online affected self-esteem. Also, the longitudinal results supported the impact of friendships on self-esteem.

The results of the cross-sectional study suggested that using the Internet for time spent on gaming online increases the level of loneliness and decreases self-esteem, satisfaction with family life and satisfaction with life, while other activities and time have no direct impact on well-being variables apart from the results discussed previously.

Online gaming showed an impact on well-being, even when the family/couple cohesion and adaptability mediated relationships. It might be some other variables t should be taken into account. For example, it might gaming online decrease the number of users' friends off-line which leads to feel lonelier. This result is consistent with other studies (Whitty,2007; Mesch,2001; Kouider,2012; Wack,2009; Yao,2014) who suggested that using the Internet for gaming and spending more time on it led to suffering from a high level of loneliness.

12.3.1.3.2 The longitudinal study results: The impact of Internet on well-being.

Over six months it was found that most of the significant impact of the Internet activities on well-being have been disappeared. The results are consistency with (Gross,2002;2004; Arruda,2007; Valkenburg,2006) who claimed that there were no direct relationships between Internet usage and well-being variables. However, results suggest that using the Internet for

searching and time spent on the Internet can increase satisfaction of family life, and using the Internet for pleasure and time spent on it, decrease satisfaction with family life. The dependent variable here is related to family and it is impacted more from Internet usage.

12.3.1.4 The association between family cohesion, adaptability and Psychological well-being:

Finally, the second part of the main model in the cross sectional study is to examine the impact of family/couple cohesion and adaptability on individual psychological well-being.

The results for all main models in the cross-sectional study suggest that family/couple cohesion and adaptability have a significantly positive impact on psychological well-being but a negative impact on loneliness.

These results are consistent with results of previous studies (Daniel & Shek, 1997; Mandara ,2000; Al-katib, 2007; Kawash,1990, Olson,1983;1992) where family cohesion and adaptability were a significant key factor to having improved psychological well-being. Also, according to the Circumplex Model, family functioning is linked to high psychological well-being at a theoretical level.

12.3.2 Summary of the models:

From the previous models, results supported that Internet usage can affect family functioning and effects depend systematically on the type of Internet activity. For example, Lee (2007) mentioned online activities that are supported and accepted would increase family relationships while unacceptable online activity would decrease family relationships. Also, Mesch (2003, 2006) found that Internet activities produced different impacts on family

conflict and cohesion. Consequently, the previous models showed different impacts on family cohesion and adaptability based on the type of Internet activities. For example, online research increased family cohesion and adaptability while online pleasure and shopping led to decreased levels of family functioning. Furthermore, the findings which is the central argument of the current study is that family functioning can work as a mediating variable between Internet usage and well-being.

12.4 Differences among sample:

This section is to address the differences between among groups in the current study. A t-test was used in order to find out the differences between samples of the present work among all study's variables. It starts with the differences between United Kingdom and Kingdom of Saudi Arabia samples. Then moved to explain the differences between participants who took part in the second wave (longitudinal study) with participants who did not. Finally, discuss the differences between cross-sectional and longitudinal samples `in the time spent on the online activities.

12.4.1 United Kingdom and kingdom of Saudi Arabia samples:

The results showed that Saudi sample in United Kingdom used the Internet for reading and surfing for information as well as shopping online more than Saudi sample in Kingdom of Saudi Arabia. Some explanations can be considered to illustrate this difference. The first possible reason is related to the demographic information which is the level of education. Most of Saudi participants who were living in the UK during currying out this study were studying at postgraduate or undergraduate which make sense that they mostly use the Internet for looking for particular information related to their subjects. Also, shopping online

revealed that sample in the UK use it more than sample in KSA. The possible reasons for that might be because of the development website in terms of ease of use, and more attractive compared with shopping websites in Saudi Arabia. Also, it might be related to the home address in KSA. The home address in KSA is not really clear as the home address in the UK which make sample in Saudi Arabia not trust these websites.

While results showed that sample in KSA use the Internet more for gaming, making new friends, and making a comment online than sample in the UK. The likely reason for that is a number of sample who are considered as young users. The number of sample in KSA who are under or equal 20 years old is 58 participants while in the UK sample is only 4 participants.

In terms of well-being variables, the results revealed that UK sample showed high self-esteem and satisfaction with life compared with KSA sample. Again, level of education could be illustrating this result. Education level can increase the level of self-esteem and also the satisfaction with life.

Similarly, UK sample showed more family functioning than KSA sample. The probable reason is the level of education for the UK sample. Increasing level of education is more likely associated with better understanding of the rights and duties towards the family. Other reason as Olson (1983) mentioned that when one of family member is at difficult circumstances the cohesion and adaptability could be increased which support the member to overcome the difficulties he or she faces. In this case, it can be considered that postgraduate students in the UK sample as a difficult situation so they receive supports by providing good cohesion and flexible rules from other family members especially wives/husbands towards another to achieve their targets.

12.4.2 Differences between sample who took part in the longitudinal study and who did not in the study's variables:

The results revealed that there were only differences between sample who took part at time two (longitudinal study) and sample at time one (cross sectional study) who did not in the time spent on three online activities as following; game, communication, and shopping, while no different was found in other variables. The sample at time one (cross sectional study) showed that they spent more time in these online activities compared with.

The possible reasons for the differences could be related to the size sample at time two. The sample size in the cross-sectional study is bigger than longitudinal study which could lead to have a difference in the time spent on theses online activities.

Also, the age of the sample in the cross sectional compared with longitudinal samples. The sample in the first wave has more young users which could show more time spent on the game, communication, and shopping online while longitudinal sample has more adult users.

However, no differences were found in the rest of the variables.

12.4.3 Differences between cross-sectional and longitudinal samples in time spent online:

This section is to explain the differences between performance of the participants in the longitudinal study compared with themselves in the cross-sectional study. According to the results, there were differences in time spent on two online activities as following; game, friendships. The game online nowadays makes a chat between players available which might encourage them to spent more time on playing game. Also, the participants who took part in the second wave of the study seemed to use the Internet more than other sample which make them more likely to spent time in these activities.

12.5 Strength and limitations

The present framework of the association between technology usage and family process needs to be empirically discussed due to limited information found in previous literature in this area. Therefore, this project extends the family approach by providing an investigation of relationships among Internet usage and the variable of family process. The present studies not only identified negative and positive impacts of the Internet on family functioning, but also support the assumption that family functioning acts as a link between Internet usage and psychological well-being as stated in the previous models.

In terms of Saudi society, since the Internet was introduced to Saudi society by the end of the 1990s, the number of users has dramatically increased. According to the global report 2015, more than half of the Saudi population uses the internet, although few studies have recognised the need to investigate effects of the Internet on families. Therefore, this project provided a clear picture about the change that the Internet might introduce within the family in Saudi society. The results of the current studies were obtained from different family members, fathers, mothers, sons and daughters that provided different perspectives of the impact of using the Internet on the family. The main study used a longitudinal design over six months to produce a better understanding of the impact of Internet usage on the family. Results showed the Internet can play a role in the family and couples regarding bonding and also with family rules providing different impacts on family functioning depending on the online activities that family members use. Thus, this study would help people in terms of how to deal with the Internet especially parents, care givers and also any institution that has associations with family, like schools or the ministry of education.

Furthermore, the project has provided new techniques to translate scales from different languages to another. This method, as stated in chapter five (study one), is called the statistical method of translation. This method is an additional support for another method of

translation, like back translation, and it would be aid in avoiding the effects of cultural bias. It relies on the output of percentage that referees to what extent the translated item matches to the original item, as seen in study one, chapter five.

Moreover, the current project adds to the pool of Arabic research instruments in the form of a suitable family scales for Saudi society and other Arabic societies. This project validates the Family Adaptability and Cohesion Evaluation Scale (FACES II) which already has been validated in different societies around the world, hence is an appropriate scale for Saudi society context. This scale would help researchers who are interested in family approaches to measure the level of cohesion and adaptability of family functioning, enabling them to provide help and advice for families.

Although this project presents important findings on relationships between the internet, family functioning and its impact on psychological well-being, it also has a number of limitations. The first limitation is the study obtains data from different family members but not from whole family groups. In spite of this the study tried to find a link identifying a family as one group but found difficulties in terms of finding a code that gather the participants as one family. Participants were asked to write the last five digits of a number of one parent but wrote their own numbers instead, making it difficult for the researcher to identify one family. Due to this reason, the study was not able to measure the impact of Internet on family cohesion and adaptability when parents shared time with their children or couples shared their interests in online activities.

Further research could involve the inclusion of whole households and would therefore be able to provide more information on the impact of the Internet on complete families, this would then identify all the participants in a single family more easily.

Also, in terms of sample size, especially in the longitudinal study, the number of participants dropped dramatically from the main sample in the cross-sectional study giving the researcher limited options in statistical methods. A further study that included a larger sample would provide more reliable results. In the cross-sectional results, Structural Equation Modelling was used which led to measuring family cohesion and adaptability as mediation variables between Internet usage and psychological well-being. While in the longitudinal study only the multiple regression method was used which revealed other results in terms of being not significant any more.

Further studies are needed in order to investigate the Internet activities that significantly impact family functioning by developing measures to produce better understanding of how and why specific Internet activities have positive or negative impact. For example, using a qualitative method through interviews with a sub-group, or through diary studies, or even browser information could be implemented.

This study would benefit further from an investigation into the impact of Internet usage on specific family stages using different family life cycles that are particularly sensitive to the relationships outlined in this study. For instance, the influence of using the Internet with; young couples without children, couples with preschool children, families with school age children, couples with adolescents in the home, empty nest families and family retirement, to investigate the level of adaptability and cohesion across these contexts.

As this study identifies a more negative side of family functioning, further studies could be carried out that focus on improvements in family functioning in relationship to technology and the use of the internet.

12.6 Conclusion

The main aim of the current study was to find out the impact of Internet usage on family functioning represented by cohesion and adaptability and psychological well-being. This study is considered as the first to try to not only figure out the positives and negatives of using the Internet on family functioning and well-being, but also to investigate the mediation variable of family functioning between Internet usage and well-being.

Some processes have been made in order to approve the model of the current study which hypothesised family functioning work as a mediation variable between Internet usage and well-being variables.

The study began with determining the most common online activities based on previous literature and translated the scales that measure variables under this study.

The study then moved to the second step which was a pilot study to examine relationships among the variables of the current study. Results indicated there were associations among the variables. However, the scale, especially the FACES II, needed to be developed to be valid for Saudi society.

Thus, the study extended the sample to develop the scale. In this step the reliability and validity were found for FACES II. Reliability was obtained using Cronbach's alpha and the validity was obtained by using the face validity, congruent validity and demonstration validity.

After preparing instruments to measure variables under this study, data was collected from a large sample size which allows the study to use advance statistical methods like Confirmatory Factor Analysis and Structure Equation Modelling. Several models have been established and can be divided into three types of models; firstly, models focused on family members, secondly, models focused on couples, which both were considered as main models

and suggested family functioning mediated the relationships between Internet usage and psychological well-being. The third type of model was called alternative models. In these models psychological well-being variables mediate the relationship between Internet usage and family functioning. The results confirmed the main models showing that Internet activities impacted family functioning which in turn impacts well-being.

For further confirmation, the cross-sectional study and longitudinal study were completed. However, in this step the number of samples was dramatically dropped giving rise to some difficulties using the SEM. Therefore, multiple regression was used and results revealed again that the Internet usage has more impact in family functioning, more so on family cohesion than on psychological well-being.

This study extended the family approach by developed the investigation of association between Internet usage as a part of people life and family process variables. This study brings other effects on family functioning that should concern parents, educators, family councillors and psychologists who could take them into account to protect the family or use the information and take advantage from it.

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14. Appendix:

14.1 Appendix (1): Questionnaire.

NOTTINGHAM TRENT UNIVERSITY

Informed Consent Form

Project title:

The Impact of Internet Usage on Family System and Psychological Well-Being.

Summary:

The current study will shed more light on the impact of internet usage on family systems and psychological well-being. This study will be conducted on Saudi Families in the UK and KSA. The sample of this study will be approximately 400 participants and it includes parents and children. This study has been ethically approved by Nottingham Trent University, and permission given by the Saudi Embassy.

If you sign below this means that you agree that: 1- You have read and understood the participant's information sheet. 2- Any questions you may have about your participation have been answered satisfactorily.3- You are taking part in this research study voluntarily.

Participant's Name (optional): .....

Participant's signature: .....

Date: .....

IMPORTANT: If you are under 18 years old, this form must be signed by your parents or your guardian.

Participant parent's signature: .....

Name: ——————————————— (optional) **Age**:————————.

please answer the following questions about yourself:

Name: (optional)
Age:
What is your gender? □ Male □ Female
Status: ☐ Married ☐ Single ☐ Widowed ☐ Divorced
Member of family: ☐ Father ☐ Mother ☐ Son ☐ Daughter
Your order among your siblings: ☐ first ☐second ☐ third ☐forth ☐fifth (Other please specify): .....
How many family members live at your home?
What level of education you have completed? □ Less than high school □ High school □ Diploma □ Graduate □ Higher studies
Your job:
What is your monthly income in SAR? □ Less than 2000. □ 2000 – 2999 □ 3000- 4999. □ 5000 – 7000 □ more than 7000

Please answer the following questions about your Internet usage:

How long have you been using Internet? ☐never ☐less than 12 months ☐from 12 months up to 3 years ☐from 3 years up to 5 years ☐5 years and more
Tick the available devices you have at your home and state how many you have: ☐ Smart phone [e.g. iPhone, Galaxy] .....N ☐ Tablets (e.g. Mini Ipad, Galaxy tape) .....N ☐ Laptop..... N ☐ Desktop..... N ☐ Console games..... N
How often do you use the internet together with other members of your family ? (may be more than one) ☐ Almost Never ☐ Once in a while ☐ Sometimes ☐ Frequently ☐ Almost Always
When you are at home, where do you use the internet? ☐ Own room ☐ Living/dining area ☐ Kitchen ☐bedroom ☐others specify (.....
How much time do you spend during a day interacting with other members of your family? ☐ Almost Never ☐ Once in a while ☐ Sometimes ☐ Frequently ☐ Almost Always

Please give an estimation of the number of hours you spend on the internet over a period of two weeks.

Question	Weekdays at Home	Weekdays At Work	Weekends
How many hours do you use internet?			

Over a period of two weeks could you please determine how important the following reasons are for using the internet. There is no right or wrong answer.

		Least important	Less important	Not important	Somewhat important	Very important
1	How important for playing online games with friends?					
2	How important for chatting with friends online?					
3	How important for participating in discussion groups?					
4	How important for making new friends?					
5	How important for making comments after watching a movie or video or listening to music?					
6	How important for giving your opinion and voting?					
7	How important for email interaction with other people?					

Please give an estimation of the number of hours you spend on the internet over a period of two weeks for the activities you have just rated:

		Weekdays at Home	Weekdays At Work	Weekends
1	Playing online games with friends.			
2	Chatting with friends online.			
3	Participating in discussion groups.			
4	Making new friends.			
5	Making comments after watching a movie or video or listening to music.			
6	Giving your opinion and voting.			
7	Emailing interaction with other people.			

Over a period of two weeks could you please determine how important the following reasons are for using the internet. There is no right or wrong answer

		Least important	Less important	Not important	Somewhat important	Very important
8	How important for downloading software to your computer?					
9	How important for surfing the net for information?					
10	How important for listening to music?					
11	How important for watching movies?					
12	How important for reading an electronic magazine or newspaper?					
13	How important for online shopping?					

14	How important for playing online games (single play games)?					

Please give an estimation of the number of hours you spend on the internet over a period of two weeks for the activities you have just rated:

		Least important	Less important	Not important	Somewhat important	Very important
8	Downloading software to your computer.					
9	Surfing the net for information.					
10	Listening to music.					
11	Watching movies.					
12	Reading an electronic magazine or newspaper?					
13	Shopping online.					
14	Playing online games (single play games).					

Debriefing Information

Thank you for your participation!

As mentioned in the beginning, should you decide to withdraw your responses you should contact the researcher within 14 days at N0464352@ntu.ac.uk or the researcher's supervisor, Dr.Jens Binder at Jens.Binder@ntu.ac.uk.

Once again, thank you for your support for this project.

14.2 Appendix (2): Information Sheet:

PARTICIPANT INFORMATION SHEET

Project title:

The Impact of Internet usage on Family Cohesion and Psychological Well-being.

Invitation:

You are being asked to participate in a survey study. The main aim of this research is to investigate the impact of Internet Usage on Family Systems and on Psychological Well-being. This study will be carried out by Sami Alzhrany who is doing a PhD in Psychology at Nottingham Trent University. The researcher's supervisor is Dr. Jens Binder, Senior Lecturer in Psychology at Nottingham Trent University.

What will happen?

You will be asked to respond to three different sets of questions. The first one is on Internet Usage, the others on your Family System and on Psychological variables.

Time Commitment:

Participants will be given a questionnaire that takes about 45 minutes to complete. All the questions are in multiple choice formats.

Participant's rights:

You may decide to stop as being a part of this research study at any time without explanation. You have the right to ask about any data you have supplied to that point be withdrawn/ destroyed. However, if you decide to withdraw your responses you should contact the researcher within 14 days at 0464352@ntu.ac.uk or researcher's supervisor, Dr.Jens Binder at Jens.Binder@ntu.ac.uk.

You have the right to have your questions about the procedures answered, unless the answers of these questions interfere with the study's outcome. If you have any questions you should ask the researcher via email (0464352@ntu.ac.uk) or his Supervisor Dr. Jens Binder (Jens.Binder@ntu.ac.uk).

Benefits and Risks:

There are no known benefits and risks for you in this study.

Confidential and anonymous:

The data we collect don't contain any personal information about you except some information which is very important such as age, gender, nationality, number of family members, permission from parents (if you are under 18 years old). However, no one will link the data you provided to the identifying information you supplied. The data will be used only for academic purposes and the statistical analyse will be used in conferences and journal articles.

For further information:

The researcher and his supervisor Dr.Jens Binder will be glad to answer your questions at researcher's email 0464352@ntu.ac.uk mobile number on 00447450606036 or Dr.Jens Binder at Jens.Binder@ntu.ac.uk.

If you are interested in the research outcome you can find out more by asking the researcher or supervisor using the contact details above.

Informed and Consent form

Project title:

The Impact of Internet Usage on Family System and Psychological Well-Being.

Summary:

The current study will target to shed more light on the impact of internet usage on family systems and psychological well-being. This study will be conducted on Saudi Families in the UK and KSA. The sample of this study will be approximately about 400 participants and it includes parents and children. This study has been ethically approved by Nottingham Trent University.

If you sign below this means that you have agreed that: 1- You have read and understood the participant's information sheet. 2- Questions about your participation have been answered satisfactorily.3- You are taking part in this research study voluntarily.

Participant's Name (option): .....

Participant's signature: .....

Date: .....

IMPORTANT: If you are under 18 years old, this form must be signed by parents or your carer.

Participant parent's signature: .....

Debriefing Information

Thank you for your participation!

This study is about the impact of Internet Usage (defined here as frequency of use and type of use) on Family Systems, measured as Family Cohesion, Adaptability and Communication, and on Psychological Well-being, measured as Self Esteem, Satisfaction with life and Loneliness levels. It is expected that certain types of internet usage can impact negatively on these variables. Internet usage may also depend on where a family is based, which is why this research is conducted in the UK and KSA.

As mentioned in the beginning, should you decide to withdraw your responses you should contact the researcher within 14 days at 0464352@ntu.ac.uk or the researcher's supervisor, Dr.Jens Binder at Jens.Binder@ntu.ac.uk.

Once again, thank you for your support for this project.