

## **How Customers 'Learn' to Work for Retailers**

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### Abstract

The purpose of this paper is to investigate how learning style affects the performance of the ‘working’ customer in one self-service context – retail Self Check-Out Tills (SCOT<sup>1</sup>). The study uses qualitative and quantitative data collected from users of retail SCOT. Initial exploratory factor analysis of 232 SCOT users revealed significant differences in learning styles. Three categories emerged: ‘Regular Reassurance’, ‘Motivated Practice’ and ‘Cautious Discovery’. Customers adopting different learning styles varied in their perceptions of ability and enjoyment with SCOT, and in their capability of helping other customers with SCOT. The demographic make-up of customers adopting the different learning styles was also shown to vary. Previously, little has been done to identify the specific training needs of working customers. This research begins to address this knowledge gap.

### Summary Statement of Contribution

The study focuses on the customer learning experience with retail technology, and provides the means for segmenting customers, interacting with retail SCOT, by preferred learning style. A connection is shown between learning style, perceptions of ability and enjoyment with SCOT, and the capability of helping other customers. The findings contribute to our understanding of the customer learning experience by reinforcing the link between motivation to learn and enjoyment, and highlighting the need to provide tailored onsite learning support to give reassurance and confidence for different customer segments.

### Keywords

Customer participation, self-service, technology, factor analysis, co-creation, learning style

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<sup>1</sup> For the purposes of this paper we have adopted the UK term Self Check Out Tills (SCOT), also known as ‘self-service registers’ in other countries, to describe this form of self service in retail stores.

## Introduction

The study of the role and impact of the customers' contribution in service settings continues to generate interesting and relevant research in marketing and customer behaviour (Jaakkola & Alexander, 2014; Sashi, 2012; Brodie et al., 2011; Payne et al., 2009). Likening the customers' contribution to that of a 'working customer', Cova and Dalli (2009) identified and reviewed eight relevant research streams including work on Service Dominant Logic, the Consumption Experience and Consumer Tribes. Whilst acknowledging that their review is not 'exhaustive', they note that all focus on the active role that customers play in the market, but often deal with very different aspects of actual consumption practices, and are rooted in different theoretical backgrounds (p. 317). The more recent work on customer 'engagement' could be seen to represent yet another stream (Jaakkola & Alexander, 2014; Sashi, 2012; Brodie et al., 2011). Research has shown that customers have a wealth of personal resources, including mental, physical and emotional resources which they actively and voluntarily use in service settings to create value (Arnould, Price & Malshe, 2006; Baron, Patterson & Harris, 2006; Baron & Warnaby, 2011; Bowen, 1986; Lovelock & Young, 1979; Rodie & Kleine, 2000).

Much of this research has focused on customers working with retail technology; a 'persuasive' force which continues to stimulate many marketing agendas (Ostrom et al., 2010). These technological interfaces have been termed self-service technologies (SSTs) (Meuter, Bitner, Ostrom & Brown, 2005). It is claimed that SSTs represent the 'primary interactive interface used by retailers to facilitate customer-based transactions' (Kinard, Capella & Kinard, 2009, p. 304). Customers' contributions in a retail store take many forms, e.g. entering a card pin number when paying, placing goods into their basket, or participating more extensively by using self-scan checkouts, thereby replacing an existing service worker. In all cases it has been argued that this participation is critical for providers, with customers making an important contribution to service (labour) productivity

(Anderson, Fornell & Rust, 1997; Bitner, Faranda, Hubbert & Zeithaml, 1997; Johnston & Clark, 2005; Claycomb, Lengnick-Hall & Inks, 2001; Johnston & Jones, 2004;).

Researchers have recognised that the SST context provides a fertile ground for research into various dimensions of customer participation. Significant progress for example, has been made developing an understanding of key customer individual (demographic and psychographic) factors driving the adoption and effective use of SSTs (Hennig-Thurau, Gwinner, Walsh & Gremler, 2004; Liljander, Gillberg, Gummerus & van Riel, 2006; Weijters, Rangarajan, Falk & Schillewaert, 2007; Wessels and Drennan 2010). Research has also explored the impact of social presence on attitudes toward SST (Kinard et al., 2009). Wang, Harris and Patterson (2012) have also recently examined the role of situational influences and past experience on customer attitudes and behaviour towards SST.

It is only recently, however, that researchers have begun to explore how these individual factors interrelate with environmental influences and shape the *customer learning experience*. Hibbert, Winklhofer & Temerak (2012), for example, advance a framework, grounded in the theory of self-directed learning (Tough 1971, Bolhuis 2003), which draws attention to the importance of developing a deeper understanding of the learning trigger events, the learning environment *and* the personal factors that influence the effectiveness of customer participation. This holistic approach resonates with the views of traditional learning theorists working outside the marketing discipline who argue that 'learning is a very complicated matter, and analyses, programmes and discussions of learning must consider the whole field if they are to be adequate and reliable', and 'that the question of relevant learning types must be included, that possible defence or resistance must be considered and that internal as well as external learning conditions must also be dealt with' (Illeris, 2009 p. 18).

Hibbert et al. (2012) also highlight the need for research which acknowledges the interactive and process-based nature of customer learning as well as a better understanding about how customer segments vary in their need to learn, their learning skills, their perceived efficacy as learners and their commitment to learning.

This study makes a specific contribution to this agenda by studying the relationship between individual and environmental influences on the customer learning experience in the context of the SCOT. We investigate how learning style affects the performance and experience of the 'working' customer in a specific learning context. Using an adapted version of Kolb's (1976,1984) 'flexibly stable' learning style inventory, SCOT users are segmented by preferred learning style, and the connection between learning, perceptions of ability and enjoyment with SCOT is explored. We also consider the transformative learning dimension of SCOT use, and link learning style to customer perceptions of their capability of helping other customers.

The objectives are to:

- Identify differences in preferred learning styles amongst customers interacting with SCOT;
- Investigate the impact of individual characteristics on learning styles;
- Explore the influence of learning styles on learning outcomes related to the customer learning experience.

For retailers, our study is timely. The continuing widespread adoption of SSTs indicates that, although customers have largely accepted the technology, many do not necessarily associate this innovation with improved customer service. Although this may be attributed in part to dissatisfaction with the performance of the technology, it has also been suggested that it relates to forced use (Reinders et al., 2008), and a failure on the part of the retailer to adapt the systems to the

skills, capabilities and learning needs of different customers. Any insights which might help a retailer to improve customer satisfaction in this important area would seem valuable.

Also, while the focus of this study is on customer learning in the context of SCOT, this is just one of a number of new technologies which are rapidly being introduced into the retail environment e.g. Natural User Interfaces (NUI) and more advanced Rapid Scan Till systems. Arguably, all of these innovations may require some element of customer learning. Insights from this study about customer learning in a particular context may help to ensure that retailers reflect on the development of an effective customer learning environment in order to successfully implement future innovations.

This paper is divided into three major sections. First, after a brief discussion of the benefits and problems of SCOT in retailing, we ground our literature in learning theories, customer learning styles (Kolb, 1976; 1984, Sproles & Sproles, 1990), and the 'working customer' in the context of adoption and use of SSTs. Second, we detail the two stages of our research: a qualitative study of self-scan users which identifies differences in customer learning styles and, combined with existing measures, generates a set of learning style dimensions; and an exploratory survey of 232 self-scan users, incorporating these dimensions, which identifies three distinct customer learning styles, and offers tentative connections between these and outcome variables such as enjoyment and self-perceptions of performance. Finally, we discuss the findings the limitations of the study and directions for further research.

## **Background and review of the literature**

### *The benefits and problems of SSTs and SCOT*

The benefits of increasing customer use of SSTs fall under three main headings; benefits to customers, benefits to businesses, and benefits for the economy (Castro et al., 2010). Research suggests that *customers* value SSTs for increased independence through greater choice of distribution channels, faster service and ease of use (Meuter, Ostrom, Roundtree & Bitner, 2000; Oliver, Livermore & Farag, 2009). For *businesses*, involving customers in SSTs can lower labour costs, enhance efficiency, improve productivity, and increase corporate performance (Dabholkar, 1996; Bitner, Zeithaml & Gremler, 2010). Regarding the *economy*, Castro et al. (2010) highlight benefits from SSTs, stressing the contribution to national growth in terms of productivity.

However, there still appear to be problems getting customers to use SCOT, as they are expected to possess the skills and knowledge to operate as partial employees. Yet, unlike retail employees, they receive no formal training or monetary reward for their contribution. Customers are not the only actors in the service system who may find the SST experience stressful. A number of authors have highlighted the negative impact of customer participation on employee job satisfaction and job performance and productivity (Bowen, 1986; Bowen & Waldman, 1999; Hsieh & Yen 2005). Although the customers' contribution may initially appear to offer a lower cost base for retailers, it can lead to role ambiguity and job stress for traditional workers (Hsieh & Yen, 2005).

#### *The willing and able 'working customer'*

Authors have classified various types and degrees of customer participation (Meuter & Bitner 1998; Bitner et al., 2010; Chan et al., 2010). Most recently Jaakkola and Alexander (2014) have usefully captured the various forms of customer participation with their classification of Customer Engagement behaviours (CEB) and their connection to value co-creation. Specifically they identify four types of CEB based on insights into customer participation in a public service transport system. These include augmenting behaviour, co-developing behaviour, influencing behaviours and

mobilising behaviours (p.255). Although the problem of labour productivity is well researched, there have only been a limited number of attempts in the services marketing literature (since Lovelock & Young's (1979) thought-provoking article) to enhance conceptual and empirical knowledge about the customers' contribution to service productivity (Anderson et al., 1997; Bitner et al. 1997; Martin, Horne & Chan, 2001; Johnston & Clark 2005; Claycomb et al., 2001).

Few have attempted to define what makes a good (productive) customer 'worker'. Most notable to date has been the contribution from Johnston and colleagues, who have highlighted the qualitative differences between inputs and outputs from an operations perspective and the counter-intuitive relationships which exist between operational and customer productivity (see Johnston & Jones, 2004). Conceptual frameworks which currently guide discussion of customer productivity are largely based on traditional economic frameworks and are arguably incomplete. They fail to address the full range of forces affecting both customer inputs and outputs in the context of productivity. In self-scanning, for example, the focus is on speed of throughput and convenience as the valued customer outputs. However, evidence suggests that there are many 'hidden' outputs which are also important to customers. Some elderly customers participate to get exposure to technology for the first time and many children simply to have fun, and parents to entertain children. For service providers it is becoming increasingly important to be able to identify, and ultimately evaluate, these social and 'experiential' outcomes. Not only can they provide a major source of differential advantage (Grove & Fisk 1992, Pine & Gilmore 1998, Baron, Harris & Harris, 2001; Harris, Harris & Baron, 2001; Schmitt 2003; Voss & Zomerdijk, 2007; , but they also help to ensure that the customer's service experience is a safe and enjoyable social event (Holbrook & Hirschman 1982; Adelman & Ahuvia 1995; Price & Arnould 1999; Harris, Baron & Parker, 2000; Caru & Cova, 2007).

*Customer learning*

According to Illeris (2009), learning theory offers a 'great variety of theoretical approaches and constructions, which are more or less compatible and more or less competitive on the global academic market' (p.7). Theories focus on different elements of the processes of learning, namely how the learner interacts with the external social, cultural or material environment, and 'the internal psychological process of elaboration and acquisition' (p.8). In the context of this research, the steer is clear. There is a need to consider the individual customer's skills, knowledge and motivation as well as the nature and process of interactions within the SCOT environment. In addition, Kegan (2009) argues that if we want to understand 'learning' we need to assess what customers learn about the SCOT process i.e. informative learning, as well as any transformative learning taking place, such as changes in their capacity to learn and move forward. He argues that 'both kinds of learning are expansive and valuable, one within a preexisting frame of mind and the other reconstructing the very frame' (p.42).

The importance of effective customer learning has been widely acknowledged within the marketing literature. Service scholars have made the connection between customer skills acquisition, training and motivation and effective participation (Kelley, Skinner & Donnelly, 1992; Evans, Simona & Murray, 2008). However, Hibbert et al. (2012) point out that, although such research has led to valuable insights, further work is needed to 'understand the processes by which customers learn and how these processes impact customers' capacity for resource integration' (p.249). They identify two deficiencies in current studies. The first is the dominance of a narrow firm-centric view, which fails to recognise the fact that customers are increasingly able to access a wide range of influential learning resources rather than relying solely on company-driven learning initiatives. The second relates to the view of the customers as a passive learner; the assumption being that 'when firms provide education or training, customers use it' (p.249). This view fails to acknowledge the fact that, increasingly, customers are able and willing to exercise control over their learning experience, 'to selectively

manage which resources to use to meet their unique learning goals', as well as regulating 'how much of their own resources (e.g. time, effort, mental and emotional energy) to invest in learning activities' (Hibbert et al. 2012, p.249).

In response to the deficiencies, Hibbert et al. (2012) advance a framework grounded in the theory of self-directed learning (Tough 1971, Bolhuis 2003), through which they identify a number of future research questions and practitioner issues which are directly relevant to this study. Research questions include learning how customer segments vary in their need to learn, and how customer segments differ in their learning skills, their perceived efficacy as learners and their commitment to learning. Relevant practitioner issues include gaining a better understanding of the opportunities for customisation of learning that will lead to improved outcomes, the resources and capabilities needed to support learning, and the data needed to segment customers in terms of their learning capability. (p.256)

Also relevant to this study is the literature on 'learning styles', which has dominated the education environment, but has disappointingly received less attention in the field of customer behaviour. In a review of learning style inventories used in the field of education, Coffield, Mosley, Hall & Ecclestone (2004) identified seventy one taxonomies of learning styles and five families along a continuum based on claims by the developers that models and instruments are fixed or flexible. They classified thirteen of the taxonomies as 'major' based on an assessment of their theoretical importance in the field, implementation either commercially or academically, and their influence on other learning style models. Despite their widespread development and adoption, there are a variety of criticisms about the use and relevance of these models in an educational environment. They include concerns about scale validity and reliability, and recognition that learning styles are only one of a host of influences on learning and not necessarily the most significant. One of Reynolds' (1997) principal objections is that theorists have 'failed to take account of the social context in which learning takes

place' (Sadler-Smith, 2001, p. 295). However, there are positive benefits attributed to the use of learning style inventories in an education context which make them attractive for use in the SCOT context.

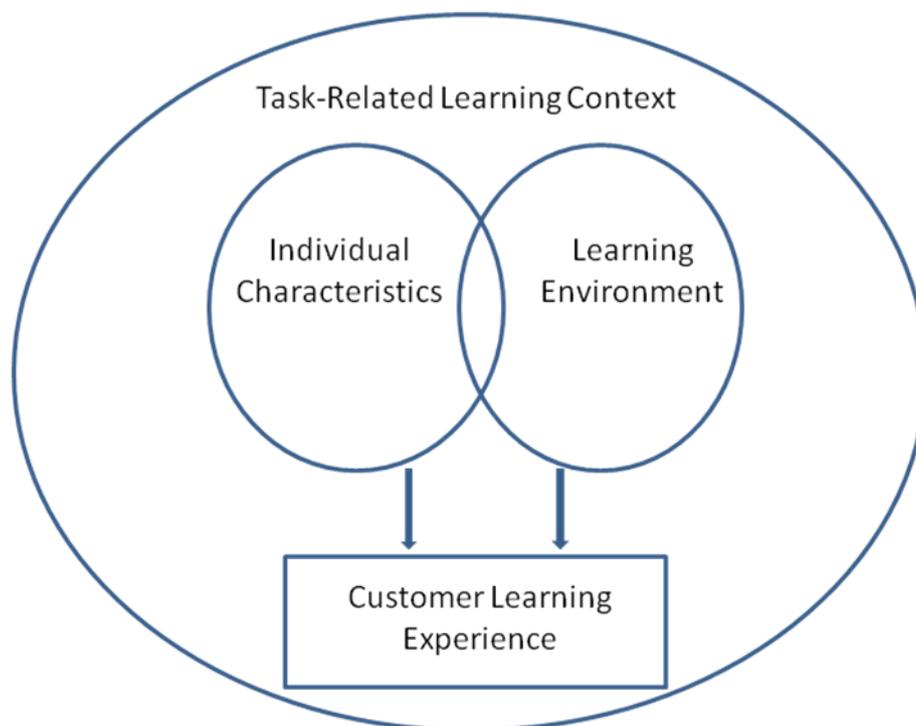
First, the inventories have provided those involved in the education learning process with, a 'much needed 'lexicon of learning'', and act as 'an agent for broader change' (Coffield et al., 2004 p. 38). Although retailers are happy to discuss learning and development in the context of the traditional workforce, there appears, to date, to have been little discussion of *customer* learning. Adoption of education-based learning style inventories offers the opportunity to give attention to customer learning and development which can be absorbed and interesting to retailers as well as academics. Second, Coffield et al. (2004, p.39) also draw attention to 'matching' theory; the idea that an understanding of learning styles might generate a tailored organisational response. In an educational context this has resulted in teachers being aligned to students with a similar learning style. There may be a range of organisational responses available to retailers based on the understanding of different learning styles, but most obvious would be matching the learning environment to the different customer segments. These are discussed in more detail later.

In the field of customer behaviour, Sproles and Sproles (1990) explore the relationship between individuals' learning styles and their customer decision-making styles. Drawing on Dunn's definition (1984, p. 12), they define learning style as 'the way each person absorbs and retains information and or skills'. They contend that each customer 'has an individual learning style, which is thought to be an enduring, patterned and preferred mode of learning' (p.1351990). In their research they use Kolb's experiential learning theory as the basis for approach to the measurement of learning styles, largely due to its 'extensive theoretical development and empirical validation' (p. 135). Kolb's Learning style inventory (LSI) is also considered to be part of the 'flexibly stable' learning styles

family (Coffield et al., 2004), recognising style dimensions as relatively stable patterns of behaviour which may vary from context to context, and therefore particularly appropriate for our study.

As SCOT represents a scenario in which a customer can be seen to take on all the activities which might have previously been undertaken by a traditional retail employee, we consider this to be an excellent task-related learning context in which to locate our study (see Figure 1).

Figure 1: SCOT – Influences on how customers learn to ‘work’



The customer's role in the task-related learning context of SCOT can be divided into four distinct phases. Each of these phases has to be completed if the customer is to carry out the task i.e. self-scan their goods.

The four phases of customer work are:

1. Preparation for store visit
2. Arrive and negotiate the store and own purchase activity.
3. Undertake the specific store task (i.e. use a self service checkout).
4. Reflect on work performance.

Each phase requires different levels of cognitive and behavioural effort from the customer. Phase 1, is predominantly cognitive in terms of establishing an intention to engage with SCOT, if available. Phase 2 requires cognitive and behavioural effort as the customer negotiates the store environment and manages their purchase activity. In Phase 3, cognitive and behavioural activity intensifies as the customer confronts SCOT, perhaps for the first time. In Phase 4, the customer engages in more cognitive activity reflecting on the positive and (or) negative outcomes of their 'work'. All four phases of 'work' are influenced by customers' individual characteristics and the features of the store learning environment. For example, the customer's choice of store, made prior to arrival will depend on store location and opening hours as well as personal store brand preferences. However, from a managerial point of view it could be argued that phases two and three offer most insight into the customer working experience as the customer is physically on site engaging in observable 'work' or activity.

#### Individual characteristics

In Phase 1, the customer has to arrive at the store mentally (and physically) prepared to engage with SCOT, i.e. with a behavioural intention to take part. According to the Technology Acceptance Model (TAM) (Davis 1989) and their adaptations (Venkatesh et al., 2003; Perea y Monsuwe et al., 2004; Baron et al., 2006), the customers' intention to take part is shaped by a range of beliefs about their own ability and the qualities of the technology. They include customer traits, a term introduced by Perea y Monsuwe et al. (2004), and incorporate demographic factors such as age and gender. Dean

(2008), for example, whilst acknowledging the simplicity of the demographic label, notes that older customers will try to avoid SSTs because they are less confident in their ability to use SSTs, prefer employee contact and believe that SSTs are there to benefit the company rather than the consumer' (p.234). Zeithaml and Bitner (2003) developed the concept of 'customer readiness' as a major factor indicating whether customers will adopt a self-service innovation. This factor identified a range of personal characteristics influencing adoption, including motivation, ability, and clarity of the individual's role as well as external drivers such as the nature of the shopping task. Research has also shown that the individual's prior learning history and experience with the technology generally can impact attitudes and behaviour towards using new technologies or using new types of SSTs such as SCOT (Dabholkar & Bagozzi 2002; Meuter et al. 2005).

In negotiating the store in Phase 2, the decision whether to use SCOT would also be heavily influenced by the customer's capacity and capability (Walker et al. 2006). They define personal capacity or capability as the 'belief in one's ability to engage with, and use, technology-enabled services confidently and effectively' (p. 126). Zhu, Nakata, Sivakumar and Grewal (2007) also draw attention to the importance of considering customer competence and capability. They employ resource matching theory to illustrate how the effectiveness of SST use depends on the match between cognitive resources available to customers and resources demanded by the features. They conclude that 'a ubiquitous mistake in SST development occurs when firms attempt to apply the most cutting-edge technologies to compete for market attention but fail to consider customers' competence and preferences' (p. 503). Walker et al. (2002) make the connection between capability and willingness, another cognitive construct. With SCOT, many customers may have the ability to perform the task effectively but are reluctant to participate because they believe they may be contributing to retail unemployment i.e. putting workers out of jobs.

In Phase 3, the customer comes into contact with the technology, and the work really begins. Unless the customer has a successful encounter with the technology then the work will not be completed. Although success, in part, will relate back to prior experience and skills, for new users this will also depend on how they *learn how to* use the system i.e. drawing on their learning style and predisposition. Hibbert et al. (2012) identify 4 key variables that influence an individual's propensity for self-directed learning and they are relevant here: technical skills related to learning process, domain specific knowledge, sense of efficacy as a learner, and commitment to learning at a given point in time. Commitment is also reinforced in their research with reference 'trigger events' for learning which are arguably only effective when related to value benefits perceived by the customer. Influences such as the importance of personal capacity and motivation have been identified in prior research. In this study, these areas are pulled together and empirically explored in one particular context.

Individual customer characteristics also influence the outcomes at Phase 4. For some customers, a successful outcome might be scanning their goods more quickly than they might have at a manned checkout. They might also feel a sense of personal achievement from the task itself, particularly if they can complete their work without any direct personal intervention. A positive outcome would render them likely to repeat the experience. In their study of the determinants of the self-scan experience that have a positive impact on user perceptions of service quality, Marzocchi and Zammit (2006) found enjoyment and a sense of control to be linked to satisfaction. These are both outcomes which would naturally follow from a positive learning experience. They also concluded that 'service satisfaction was shown to have a positive impact both on the overall opinion of the supermarket and the intention to re-patronise the store; this means that customers who are satisfied with self-scanning are similarly satisfied with the supermarket' (p. 666).

Learning environment

In Phase 2, the customer's decision about whether to start work is influenced by real-time, situational realities such as the length of the queues at manned checkouts, the size of their purchase, the time of day, and presence of other people (strangers and shopping companions) i.e. 'social' presence (Kinard et al., 2009; Wang et al., 2012). Many of these can be controlled and managed by the retail provider. Researchers have identified the positive and negative impact of strangers and shopping companions on various dimensions of in-store customer behaviour (e.g. Harris & Baron, 2004; Grove and Fisk, 1992). Kinard et al. (2009) specifically explored the impact of social presence on technology based self-service use, and found that customers were more intimidated and anxious about making a mistake using a SST in the presence of one individual than with a larger number. The impact of these situational variables has long been recognised by behavioural learning theorists including Foxall (1990, 1997), who draw on the behavioural perspective model to explain customer behaviour in terms of the scope of the setting in which it occurs and the learning history of the individual.

Hibbert et al. (2012) identify opportunities to learn, learning resources and learning support as being particularly influential aspects of a customers' learning environment. At present, retailers appear to provide limited onsite support or resources for customer learning in the self-scan setting. For example, although employees are sometimes available to help customers when the self-help process or technology fails, the support is not designed to prevent mistakes from happening again i.e. to have a transformative function. Similarly, customers appear to have limited 'learning' options or opportunities to practice as would be normal routine for retail employees.

In summary, there is evidence that many customers seem to be more willing and able than ever to actively participate in their service experience. In the case of SCOT in retailing, it is clear that retailers view this as an effective platform for customer engagement with beneficial outcomes for

both the organisation and customers. So why are so many customers still reluctant to participate? Why are the benefits of self-service not being fully realised? What is preventing customers from fulfilling their potential as good 'service workers'? A review of theory and practice suggests that one of the reasons might be the gap in our understanding about the nature and importance of customer learning styles on the learning experience. This is the focus of the preliminary investigation that follows.

### **Method**

The review of the literature highlights the gap in our understanding of key aspects of the customer learning experience. Specifically we are interested in expanding understanding of differences in preferred learning styles between customers interacting with SCOT and the relationship between these learning styles and specific learning outcomes such as satisfaction.

To overcome the objection that current learning style inventories do not take account of the social context, an initial qualitative investigation was undertaken to understand more about customer learning in the context of self-service checkouts. Twelve depth interviews were conducted with customers who were familiar with the retail self-scan environment. The interview schedule included discussion about relevant 'learning' related issues identified in the literature including motivation and commitment, influence of prior knowledge and experience, and learning style preferences. Participants were recruited on a referral basis, and, after a brief explanation about the aims of the research, were asked to recall their experiences with SCOT. The interviews elicited a variety of responses including what they liked and disliked, their perceived ability and how they learnt how to use the equipment on the first encounter. All the interviews were tape recorded and transcribed. Data were analysed following guidelines suggested by Lincoln and Guba (1999) and Miles and Huberman (1994). The initial coding of the data in the 'learning preferences' section of the interviews proceeded deductively, drawing on perceived fit with six *a priori* learning dimensions

defined by Cox and Sproles (1988): Serious/analytical (SA), Active/Practice (AP), Observation/centred (OC), Concrete/factual (CF), Passive/Accepting (PA), or Non-adaptive/Struggling (NA) learning style preferences. To achieve a degree of inter-rater reliability, two researchers independently coded the data. Evidence was found of all dimensions except passive/accepting and non-adaptive/struggling learners. Eight statements were incorporated into the questionnaire to acknowledge these key learning styles. In addition the interviews revealed additional themes not covered within the existing inventory but which were consistent with key ideas raised in prior literature on this learning context, and highly relevant to our study. Specifically these related to the role of prior motivation (M), commitment to the task (C), the need for reassurance (R), and the importance of learning without observation (WO). Additional statements were included to reflect these dimensions generating a total of fourteen learning style questions included in the final questionnaire. In an effort to enhance face and content validity, a pretest of the survey instrument was carried out with 50 individually administered questionnaires. Modifications were made to take account of difficulties, suggestions and criticisms. The learning style dimensions included in the questionnaire with supporting respondent statements from the qualitative research are shown in Appendix 1.

Throughout the qualitative research discussions, participants referred to their beliefs about their own self-scanning ability, their enjoyment or not of the self-scan process, and their potential for helping other customers through the process.

Thus, these customer-identified outcomes were included as the following statements in a subsequent exploratory, quantitative study:

I feel that I am very good at using self-scan checkouts

I enjoy using self-scan checkouts

I feel that I am capable of helping people to self-scan

Survey data were then collected from customers of four major UK grocery retailers at five locations in a mid-sized UK Midlands city over a 7-day period. The represented stores offered both self-scanning and traditional checkout services. Customers were approached to participate in a survey on Self-Service Checkout (SSC) services. Participants self-completed questionnaires on site. The fourteen learning style statements in Appendix 1, and the three outcome statements, were assessed on a seven-point Likert scale with 1 = strongly disagree, and 7 = strongly agree.

No incentive for participation was offered. This method yielded 232 fully completed questionnaires.

The respondent characteristics are summarised in Table 1.

Table 1 Survey Respondent Characteristics

<b>Age (years)</b>	<b>Percentage of Respondents</b>
Less than 25	28.4
25 – 40	27.2
41 – 55	22.4
56 – 60	13.4
More than 60	8.6
<b>Gender</b>	
Male	47.4
Female	52.6

<b>Marital Status</b>	
Married	40.1
Living with Partners	18.1
Single	41.8
<b>Employment Status</b>	
Full-Time	45.3
Part-Time	14.7
Full-Time Education	18.5
Housewife/Househusband	10.3
Unemployed	9.9
Retired	1.3
<b>Frequency of Using Self-scan Checkouts</b>	
Hardly at All	34.1
A Few Times	43.5
Many Times	13.4
Every Time	9.1

#### Exploratory Factor Analysis:

Principal component factor analysis with varimax rotation was applied. This resulted in four statements with factor loadings below 0.4 (Numbers 5, 10, 11 and 12 in Appendix 1) being deleted and a three-factor solution (Table 2). A loading of 0.4 was used as a cut-off point because it indicated

that approximately 16% or more of the variance in that construct was accounted for by its common factor (Stevens, 2012; Field 2013).

Three factors were labelled 'Regular Reassurance', 'Motivated Practice' and 'Cautious Discovery', respectively. The variance explained by the three factors is 50.0%. The Kaiser-Meyer-Olkin (KMO) statistics showed that the value of all remaining scales were all above 0.50 in the anti-image correlation matrix and the Bartlett's test was significant ( $p < 0.001$ ). To further check the decision on the number of factors to retain, parallel analysis was carried out. Based on O'Connor's (2000) suggestion, we compared raw data eigenvalues with 50% and 95% percentile eigenvalues. The first three raw data eigenvalues corresponding to the three factors were found to be statistically significant (e.g. the first three raw data eigenvalues are bigger than 50% and 95% percentile eigenvalues). These results further confirmed that three types of learning styles were factored really well.

The Cronbach alpha coefficients for the three factors ranged between 0.63 and 0.74 demonstrating reasonable internal consistency and reliability.

Table 2 Exploratory Factor Analysis

## Rotated Component Matrix – Factor Loadings

Items of Learning Styles	Regular Reassurance	Motivated Practice	Cautious Discovery
I like to know that someone there to help if I make a mistake when learning new things	0.81		
I feel that observing is a good way for me to learn	0.68		
I tend to think back on what I learn	0.65		
I need the opportunity to ask questions as I learn	0.62		
I have to be motivated to do something before I will learn how to do it probably		0.78	
I need the chance to practice something before I will learn how to do it properly		0.67	
I often learn things through watching what others do		0.56	
I tend to think things through carefully before starting a new task			0.48
I always follow instructions carefully when faced with a new task			0.73
I enjoy taking down notes and writing down facts as I learn			0.41
<b>Parallel Analysis:</b>			
	<b>Root</b>	<b>Raw Data</b>	<b>Means</b>
	1.00	3.79	1.43
	2.00	1.94	1.33
	3.00	1.45	1.25
<b>Cronbach's Alpha</b>		0.74	0.66
			0.63

Customers adopting the *Regular Reassurance* learning style desired assistance from others, opportunities to ask questions, and time to reflect on what they had learned. Customers adopting the *Motivated Practice* learning style needed to see a clear benefit from learning how to do the task, and welcomed being given the opportunity to practice or to observe others. Customers adopting the *Cautious Discovery* learning style preferred to follow a systematic pattern of learning, coupled with note-taking and serious attention to following instructions.

Relationship between individual characteristics and customers' learning styles:

The influence of individual customers' characteristics on the three types of learning styles towards using SCOT was explored. Four dummy coding variables were created for age, and one dummy variable for gender. The age group "<25 years old", was selected as the control group because this age group represented the majority of participants of the study. Female participants were selected to compare against male participants. The two groups of dummy variables (age; gender) were included as predictors of three types of learning styles. Three separate multiple regression analyses were conducted (one for each learning style). The means of three learning style factors were used as the dependent variables. The results of the multiple regression analysis are summarised in Table 3.

It can be seen that neither age nor gender had a statistically significant effect on those using the motivated practice learning style. People aged 60+, and females tend to require the most regular reassurance while learning to use SCOT, while, for those using the cautious discovery learning style, the main influence is age; in particular, people aged 40+ tended to be more likely to use this learning style than their younger counterparts.

Table 3: The Influence of Individual Characteristics on Customers' Learning Styles

INDIVIDUAL CHARACTERISTICS	DEPENDENT VARIABLES								
	Regular			Motivated			Cautious		
	Reassurance			Practice			Discovery		
	<i>B</i>	<i>t</i>	$\beta$	<i>B</i>	<i>t</i>	$\beta$	<i>B</i>	<i>t</i>	$\beta$
<b>Age</b>									
<25 vs. 25-40	0.21	1.27	0.09	-0.10	-0.53	0.04	0.25	1.21	0.09
<25 vs. 41-55	0.42	2.36	0.18*	-0.17	-0.81	0.07	0.67	2.99	0.21**
<25 vs. 56-60	0.28	1.34	0.10*	0.07	0.29	0.02	1.10	4.12	0.28***
<25 vs. 60+	0.98	3.71	0.27***	0.23	0.73	0.06	1.67	5.00	0.35***
<b>Gender</b>									
Female vs. Male	-0.29	-2.27	-0.15*	-0.13	-0.89	0.06	-0.23	-1.43	-0.09
	<i>R</i> <sup>2</sup> =0.18			<i>R</i> <sup>2</sup> =0.05			<i>R</i> <sup>2</sup> =0.26		
<b>Note:</b> * $p < 0.05$ , ** $p < 0.01$ , *** $p < 0.001$ , unstandardised coefficients ( <i>B</i> ), t-statistics ( <i>t</i> ), standardised coefficients ( $\beta$ ).									

## Outcome Variables:

Separate regression analyses were run with the three learning style factors on three outcome variables. The results are presented in Table 4.

Table 4 Summary of Regression Results – Learning Factors on Output Variables

Coefficient	Outcome Variable					
	I feel that I am very good at using self-scan checkouts		I enjoy using self-scan checkouts		I feel that I am capable of helping people to self-scan	
	coefficient	p-value	coefficient	p-value	coefficient	p-value
Constant	7.76	0.00	5.25	0.00	8.29	0.00
Regular Reassurance	-0.37	0.00	-0.27	0.01	-0.47	0.00
Motivated Practice	0.02	0.86	0.31	0.00	-0.07	0.51
Cautious Discovery	-0.31	0.00	-0.24	0.00	-0.26	0.00
	R <sup>2</sup> = 0.11 Adjusted R <sup>2</sup> = 0.10		R <sup>2</sup> = 0.19 Adjusted R <sup>2</sup> = 0.18		R <sup>2</sup> = 0.21 Adjusted R <sup>2</sup> = 0.20	

It is seen that the factor 'Regular Reassurance' has a statistically significant *negative* effect on all three outcome variables, suggesting that customers adopting the regular reassurance learning style are less likely to consider themselves as very good at using self-scan checkouts, to enjoy using self-scan checkouts, or to perceive they have the capability to help other people use self-scan checkouts. The factor 'Motivated Practice' only has a statistically significant (positive) effect on enjoyment of using self-scan checkouts. This suggests that customers adopting the motivated practice learning style are more likely to enjoy using self-scan checkouts. The factor 'Cautious Discovery' has a statistically significant *negative* effect on all three output variables suggesting that customers adopting the cautious discovery learning style are less likely to consider themselves as very good at using self-scan checkouts, to enjoy using self-scan checkouts, or to perceive they have the capability to help other people use self-scan checkouts.

## **Discussion**

In this study, we have explored how a customer's *learning style* affects their participation in one form of retail self-service: SCOT. Informed by insights from in-depth interviews with customers, we undertook a questionnaire-based survey to explore the relationship between different customer learning styles and key performance outcomes. Although considerable research has explored participation in the provision of services, and defined customers as 'partial employees' of the service providers (Etgar 2008; Bitner et al., 1997; Kelley et al., 1990), to the best of our knowledge no empirical research has systematically investigated learning styles linked to three customer learning experience outcomes; enjoyment, personal ability and capability to help others. Our research contributes to the broader customer learning research agenda, exploring how individual factors interrelate with environmental influences and shape customer learning experience. In addition, although learning style inventories have been well established in the education literature (Kolb,

1976, 1984; Kendall & Sproles, 1986; Sproles, 1987; Sproles & Sproles 1990), there appears to be no attempt to explore the wide applicability and generalizability of learning styles of customers in retailing, or in the context of self-service.

This research identified significant differences in customer learning styles in the context of SCOT. Three categories of learning styles have emerged; labelled 'Regular Reassurance', 'Motivated Practice' and 'Cautious Discovery', respectively. They reflect clear differences in how customers prefer to engage with SCOT, and learn how to become service workers. Customers who want 'Regular Reassurance', are regular self-scan users, tend to be females, valuing the opportunity to ask questions and watch others. What is interesting about this category is that, although they are regular users, they still require help and reassurance. Indeed, it may be that these customers will always want to have someone present to provide reassurance and will never be happy in a totally self-service environment.

The second category, 'Motivated Practice' captures customers who want an opportunity to practice in order to learn properly. They also need to see a clear benefit to taking part in the first place, i.e. they have to be motivated to learn. In addition, for this category, there is a statistically significant (positive) effect on enjoyment of using self-scan checkouts. This is a key finding and links back to the notion of trigger events (Hibbert et al., 2012). From a firm's perspective it is preferable to avoid forcing customers to learn 'when they are unmotivated or daunted by the prospect and instead to account for customer preferences and capabilities in designing service systems' (p.252). This also reinforces the dangers of 'forced use' highlighted by Reinders et al (2008). As we have stated before, although many customers are now used to seeing self-service checkouts in a retail environment and in many cases being forced to use them, it clearly does not mean that they are enjoying the 'service' experience. Indeed, it is telling that this 'motivated practice' group is the only one of the three segments which appears to enjoy the experience.

The third style encompasses those who approach the work in a more systematic and serious manner, following instructions and thinking things through carefully: the learning here focuses on 'Cautious Discovery'. This group also enjoys the opportunity to take notes as they learn. Our study also revealed that the older the customer the more likely they are to adopt either Regular Reassurance or Cautious Discovery learning styles. Customers who adopt these two styles also appear to lack confidence in their own ability to use SCOT, and in their ability to help other customers do the same. The fact that customers adopting all three styles lack confidence in their ability to help others suggests that the learning that is taking place is not transformative.

### **Managerial Implications**

The literature highlights how an in-depth understanding of the nature and impact of customer participation in service delivery can lead to competitive advantage. Customer participation is increasing and can take many forms including interacting with retail SCOT. Although we understand many of the key customer demographic and psychographic factors driving adoption and use of SSTs, this study investigates how *learning style* affects the performance of the 'working' customer. Our findings offer important implications for retailers trying to incorporate customer work into the service delivery process.

First, it is clear that customers prefer to *learn* how to use SCOT in a range of different ways, and so may require a variety of design and resource support interventions to perform effectively. At present, the assumption driving system design and resource allocation is that customers learn how to do the required tasks by interacting with the equipment, and following on-screen instructions, and that they need limited additional training and support. Although our findings indicate this may be the case for some customers, many customers are looking for the opportunity to practice to gain

confidence, to learn by watching other people, and to be given time and space to think carefully as they absorb relevant information. There is a clear message about the need for additional learning support which cuts across two of our three learning styles. While retailers may argue that the additional resources required to respond to such diverse learning styles would increase costs in the short term, it may be that a more tailored or 'matched' response would result in more *effective* performance in the long term, enhancing the quality of the customer's learning experience. For example, providing a practice area and an opportunity for less confident customers to ask questions, either of staff or other more experienced customers, during the process might increase confidence and ability, and ultimately motivation and enjoyment.

Segmenting customers, according to their learning style, also has important implications for the diffusion strategies of SCOT. It is clear, for example, that, in order to learn how to perform effectively, those adopting the 'motivated practice' learning style need to be convinced about the benefits of using SCOT from the outset. If they are motivated then they are more likely to enjoy their experience. Retailers take steps to understand and reward this 'motivated' group. One approach might be to solicit the help of those adopting the 'motivated practice' style in increasing the enhancing the motivation of others. Such customers could, for example, help retailers to design relevant communication initiatives, stressing the benefits to other customers. As this would require a much higher level of contribution, the retailer might look to offer additional rewards, perhaps in the form of loyalty points. This strategy would be totally consistent with the view of the customer as a resource and collaborator. As Hibbert et al. (2014, p.258) argue 'in making decisions about ways to support customer learning, firms also need to think how customers' learning processes afford them opportunities to learn from customers'.

Second, our findings have implications for the role and performance of existing service employees. Retailers have recognised that customers may require some help to resolve problems at the point of

interaction. These problems usually arise because of technology failure, or a lack of relevant skills and experience on the part of the 'working customer'. Often an employee is allocated a set number of SCOT units to oversee and respond to customer concerns. In many cases, the employee's response simply involves taking over the transaction from the customer and completing the operation. Although this may speed up the process temporarily, it may not be the best response for long-term productivity. If the challenge is to encourage productive, confident working customers, it may be that a more professional, highly-skilled intervention may be required, similar to that of a trainer or teacher, to help customers to learn from their mistakes. From our findings, it is clear that customers lack confidence in their ability to perform effectively. The challenge is, therefore, how to build the customers' confidence and ability. Under the current system, the customer is unlikely to learn from the employee intervention and will probably make the same mistakes again. Worse still, it may be that the 'problem experience' might deter the customer from attempting to try to use the system again. Placing the emphasis on a more highly skilled intervention might also reduce the stress currently felt by employees asked to switch from the role of checkout operative to customer 'problem solver.'

Finally, our findings draw attention to the need for retailers to bring the lexicon of 'customer learning' onto the strategy agenda. At present there is a general belief that it is sufficient to consider customer learning, back in the 'factory', when the technology is being designed. The research findings suggest that the customers' learning needs extend into the retail environment, and that retailers could do more to provide learning support for the different learning requirements. Although customers appear to have accepted the technology, many do not enjoy using it, and have not learnt enough from their experience to feel confident enough to help others.

It is clear that effective retail service delivery requires the participation of both customers and employees. Retailers need to think more creatively about how they might create a supportive

'learning' environment for the working customer and focus training resources on the learning needs of customers as well as employees to co-create value within the system.

### **Limitations and future research**

The first limitation of our research is limited generalizability of our findings. The research has been carried out in one self-service context; retail SCOT. Although this sector accounts for a growing and significant percentage of self-service applications, SCOT is only one application. We believe there is an opportunity for research which replicates our study within other self-service environments and across other applications such as airport kiosks. A second related limitation is the cultural context of our study. Just as attitudes to self-service applications varies across cultures, so too do preferred customer learning styles. This also represents a major opportunity for further research. A final, more obvious limitation relates to the size of the shopper sample used in this particular study.

Our aim with this preliminary investigation was to focus attention on this under-researched area. A constructive area for future research would be the rigorous development and testing of a scale of items for a customer learning questionnaire. We hope that we will have stimulated interest from colleagues into carrying our further larger scale studies in this area.

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### **Appendix 1: Learning Style Dimensions and coding from stage 1**

1. I need the chance to practice something before I will learn how to do it properly\* (AP)

“The only time I sort of learn properly is by mucking about, like with computers and that’s because I know they have a back button.”

2. I tend to think things through carefully before starting a new task\* (SA)

"I think you need patience, you know, the same with all pieces of machinery, they will have their own little foibles. You need to learn about what they are and how to deal with them and the knowledge that not all pieces of machinery work perfectly first time. So I think just patience and I suppose not to automatically expect that it's going to work perfectly and that you can whizz through as quickly as you might think. You need to think it through."

**3. I have to be motivated to do something before I will learn how to do it properly\*\* (M)**

**"I probably could learn it. I just don't want to. It's just more money for supermarkets. To some extent it probably is that I'm not in the right sort of frame of mind to want to learn it seriously."**

4. I often learn things through watching what others do\* (OC)

"I learnt by watching somebody showing me what to do really."

**5. I might start by carefully following instructions, but am likely to take short cuts\*\* (C)**

**"I'd probably scan through the instructions. I won't go, you know somebody, if you've got like a 60 page book on how to use something, I wouldn't read all 60 pages. I would just flick through, pick the diagrams up. Oh right I've got the gist of this and if there's anything I'm unsure of, then I'd go back to the instructions."**

6. I enjoy taking down notes and writing down facts as I learn\* (CF)

"She said, I'll leave you to see if you can do it on your own. So I done it, but I didn't realise that you had to put it straight in the bag for them to feel the weight, I thought you just scanned and all that. I probably should have made a few notes.. that would have been better, ha ha..."

**7. I need the opportunity to ask questions as I learn\*\* (R)**

**"I'm happy to have a go but need reassurance and the chance to ask..**

**Sometimes you need that little bit of back up."**

8. I always follow instructions carefully when faced with a new task\* (SA)

"I think they have clear enough instructions, and I think it's because of the nature of what other things they're doing is like. You just follow the steps, you know, like setting up a DVD player to record something, you just follow the steps and if you don't make it, just go back."

"My husband isn't so. He never reads instructions so he just gets stuck in whereas I will stand and read and read again before doing something."

9. I tend to think back on what I learn\* (SA)

"I think back each time I do it...You still have to take some time to read the instructions because each system might be different and you want to make sure that you're following the steps accurately so I think that's, you can't do it automatically., Each time you go you do have to follow the instructions.(8)."

**10. If I have not learnt to do something at the first attempt, I will probably give up\*\* (C)**

**“I’m one of those people that would do anything once. If I didn’t like it, or can’t do it, then I wouldn’t try it again...”**

**11. I prefer to learn how to do things without other people watching me\*\* (WO)**

**“I’ll be honest with you. I used to work in a bank and I used to be on the cash machines and all sorts, cash and cards and God knows what and come up with all sorts of things – pay one bit on the card and this on another card, card, cash, tokens and everything so it’s not that. That doesn’t worry me. It’s the fact that people are looking at me. That’s what I think it is.”**

**“I certainly wouldn’t like to do it in front of everybody else. It’s the audience thing, people seeing me.”**

**12. “Doing things” is my preferred way of learning\* (AP)**

**“I’m not afraid to try anything new but I do need to practice. And then obviously if I’ve done it ok that’s fine. I’m that kind of person, I’m quite happy to work on my own.”,**

**13. I feel that observing is a good way for me to learn\* (OC)**

**“I like to learn through observation. I like to watch somebody do something and then have a go myself. So probably, thinking back, probably Ian did the first self-scanning while I sort of watched him do it because he is more ready, I think, to get stuck in to new things than I might be. Just thinking about it psychologically, that might have been what happened.”**

**14. I like to know that someone is there to help if I make a mistake when learning new things\*\* (R)**

**“It’s always nice to know someone is there in case it says, you know, the item you’ve put in the bag isn’t the same weight as what you’ve just put on the scales. It’s always nice to just turn round and say, can you come and help. If nobody was there, I think I would think twice...initially when I was first using it was to have someone on hand just to sort any little problems that you’ve got, initially if you’ve never done it before.” (R)**

\*statements adapted from Sproles, 1987; Kendall & Sproles, 1986

\*\* additional statements arising from the stage 1 qualitative research.