# How Consumers 'Learn' to Work for Retailers

**Abstract**

**Purpose**

The purpose of this paper is - to investigate how learning style affects the performance of the 'working' consumer in one self-service context – retail Self Check-Out Tills (SCOT[1])

**Design/methodology/approach**

The study uses qualitative and quantitative data collected from users of retail SCOT. First: a qualitative study of self-scan users identified differences in consumer learning styles and, combined with existing measures, was used to generate a set of scale items. Second: an exploratory survey of 232 self-scan users, based on these scale items was carried out to identify differences in consumer learning styles, and offer tentative connections between these and outcome variables such as enjoyment and self-perceptions of performance.

**Findings**

Initial exploratory factor analysis of 232 SCOT users revealed significant differences in learning styles. Three categories emerged: labelled, respectively, as 'Regular Reassurance', 'Motivated Practice' and 'Cautious Discovery'. Customers primarily adopting the different learning styles were shown to vary with regard to their perceptions of ability and enjoyment with SCOT, and in their capability of helping other customers with the technology. The demographic make-up of customers adopting the different learning styles was also shown to vary.

**Research limitations**

The findings may not be generalizable to other self-service contexts. The additional scale items developed here need to be tested across other SST applications.

**Practical implications**

By understanding the different ways in which consumers prefer to learn how to use SCOT retailers will be in a better position to develop targeted training and education programmes and design interventions which will ultimately help customers (and employees) work more effectively with the technology.

**Originality/value**

Although it has long been recognised that responding to learning needs is important in developing effective retail employees, little has been done to date to identify the specific training needs of working customers. This research begins to address this knowledge gap.

**Keywords**

Customer participation, self-service, technology, partial employee, co-creation, learning style

---

[1] For the purposes of this paper we have adopted the term Self Check Out Tills (SCOT) to describe this form of self service in retail stores. This is terminology used by a large Retail chain in the UK.

**Introduction**

The study of the role and impact of the 'consumer as worker' continues to generate interesting and relevant research in marketing and consumer behaviour. A recent review of the various research streams has highlighted the fact that, while all focus on the active role that consumers play in the market, they often deal with very different aspects of actual consumption practices, and are rooted in different theoretical backgrounds (Cova and Dalli 2009, p.317). Research has shown that consumers 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 et al. 2006, Baron, Patterson and Harris 2006, Baron and Warnaby 2010, Bowen 1986, Lovelock and Young 1979, Kelly et al. 1990, Rodie and Kleine 2000).

Nowhere is the consumers' contribution more evident than in a retail store where participation takes 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, this participation is critical for providers, with consumers making an important contribution to service (labour) productivity (Chase 1978, Johnston 1989, Lengnick-Hall 1996, Andersson et al. 1997, Bitner et al. 1997, Ennew and Binks 1999, Martin et al. 2001, Johnston and Clark 2001, Claycomb et al. 2001, Johnston and Jones 2004, Anitsal and Schumman 2007). According to 'service-dominant logic', customers are *vital* 'operant' resources, co-creators of value and, potentially, a major source of competitive advantage (Vargo and Lusch 2004, Lusch and Vargo 2006, Lusch et al. 2007, 2008).

Unsurprisingly, perhaps, research has focused extensively on consumers 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 et al. 2000), and in a retail/service context include automated checkout systems in hotels, SCOT in retail stores, check in kiosks at airlines airline ticket kiosks as well as virtual interactive touchscreen displays stores more recently provided by Tesco in South Korean subways. It is claimed that they represent the 'primary interactive interface used by retailers to facilitate self-service customer-based transactions' (Kinard et al. 2009 p.304). Given that these systems can offer major financial savings by maximizing the efficiency of service delivery and minimizing personnel costs, getting customers to embrace the technology and work effectively with it has become of paramount importance to service managers.

Significant progress has been made developing an understanding of key consumer demographic and psychographic factors driving the adoption and effective use of SSTs (Bobbit et al. 2001, Bitner et al. 2000, Meuter et al. 2000, Parasuraman 2000, Bitner 2001, Dabholker et al. 2002, Henig-Thurau et al. 2004, Liljander et al. 2006, Walker and Johnson 2006, Weijters at al. 2007). Much of this research is grounded in theory about the adoption of innovations: the Theory of Reason Action (Fishbein and Ajzen 1975), the subsequent Technology Acceptance Model (TAM) (Davis 1989) and their adaptations (Venkatesh et al. 2003, Perea y Monsuwe et al. 2004, Baron et al. 2006). Research has also explored the impact of social presence on attitudes toward SSTS (Kinard et al. 2009). Wang et al have also recently explored the role of situational influences and past experience on consumer attitudes and behaviour towards SSTs (Wang et al 2012).

No recent research, however, has developed an in-depth understanding of how consumers differ in terms of *how they prefer to learn to perform* the tasks they face as retail workers. In many scenarios, learning choices are limited. In the case of SCOT, for example, consumers may follow on screen instructions, learn vicariously from other shoppers, or request that a sales person provides assistance. To what extent are these options either effective in training working consumers or sufficient in terms of meeting the learning and training needs of *all* shoppers? Does the way that

customers learn mean that they will perform differently and experience different levels of satisfaction with their work? Critically for retailer managers there is the implication that different consumers may require different training interventions and levels of support in order to perform effectively and efficiently.

To start to address these questions, the main objectives of this study are to:

- Identify differences in preferred learning styles between consumers interacting with SCOT;
- Generate a set of scale items which can be incorporated in a consumer learning style questionnaire;
- Profile customer segments based on differences in preferred learning styles and relevant demographic, usage and output variables identified in prior literature;
- Use these profiles to propose effective store design and human resource management intervention strategies.

The remainder of this paper is divided into three major sections. First, after a brief discussion of the growth and importance of SCOT in retailing, we ground our interest in consumer learning styles in the context of prior theory concerning the adoption and use of SSTs and the work of Kolb (1976, 1984) and Sproles and Sproles (1990) on learning styles. Second, we detail the two stages of our research. First: a qualitative study of self-scan users which identifies differences in consumer learning styles and, combined with existing measures, generates a set of scale items. Second: an exploratory survey of 232 self-scan users, based on these scale items, which suggests differences in consumer learning styles, and offers tentative connections between these and outcome variables such as enjoyment and self-perceptions of performance. In the final section, we provide a general discussion of the findings and discuss the limitations of the study and directions for further research.


**Background and Review of the Literature**

The growth and significance of SCOT in Retail

According to a report published by the US Information Technology and Innovation Foundation, 'over the next decade, self-service technology (SST) has the potential to be a major force for growth in productivity and improvements in quality of life' (Castro, Atkinson, and Ezell 2010, p.1). The authors have estimated that, 'if self-service technology were more widely deployed, the U.S. economy would be approximately $130 billion larger annually, the equivalent of an additional $1,100 in annual income for every household' (p.1).

Although retail SCOT represents only one form of SST, it is arguably one of the most commonly recognised applications. According to a recent study the global installed base of self-checkout terminals will rise from 170,000 in 2012 to reach 320,000 by 2018. 'Although the grocery segment will continue to account for most of the units, the future will see a broader range of retailers implementing self-checkouts'. Tesco, the UK based retailer, with global group sales of £72.4bn, (2013 Company report) has invested heavily in self-checkout systems and opened its first self-checkout only store in Kingsley in 2010. In the US, Home Depot has been one of the leaders in using self-checkout with systems in all US stores accounting for 35% of all transactions. (Castro 2010)

The benefits of SCOT

The benefits of increasing customer use of SSTs generally have been widely documented. They fall under three main headings; benefits to consumers, benefits to businesses, and benefits for the

economy (Castro et al. 2010).  Research suggests that *consumers* value SSTs for increased independence through greater choice of distribution channels, faster service and ease of use (Meuter et al. 2000; Oliver, Livermore, and Farag 2009). In addition, many consumers deliberately choose self-service options to avoid the need for interpersonal interaction at the point of sale (Walker et al. 2002, Dabolkhar and Bagozzi 2002). For *businesses*, involving customers in SSTs can lower labour costs, enhance efficiency, improve productivity, and increase corporate performance (Dabholkar 1996 Bitner, Zeithaml, and Gremler 2010). For example, a retailer that introduces SCOT can in theory move self-scan operators to more productive, satisfying and profitable roles. Castro et al. (2010) also highlight benefits from SSTs for the *economy*, more broadly stressing the contribution to national growth in terms of productivity. 'Higher productivity growth goes a long way in solving pressing societal problems, including Social Security shortfalls, lagging income growth, the national debt, and the ability of society to spend in key areas (e.g., transportation, environmental protection) In addition, if advanced nations sustain or even increase their productivity growth, within a decade workers could have not only higher incomes, but also reduced overall work time and an overall increase in the time they can spend with their families and on leisure'(p. 6)

The problems

Despite the widely acclaimed benefits, there still appear to be problems getting customers to use SCOT on a regular basis across a range of services. Many of the stated benefits have not materialised for consumers. In retail, for example, recent figures from two of the UK's largest supermarkets, with the greatest percentage of self-service checkouts, indicate that average queuing times for staffed tills have increased over the past two years since automated tills were introduced. Many customers offered a choice between staffed and automated tills, find it quicker to use the traditional method. In one survey, researchers made nine visits to stores of the three major supermarkets and, on each occasion, purchased two identical baskets of groceries, one through a staffed till and one through a self-service checkout. On five of the nine occasions, service was slower through the self- service checkout (Jamieson et al 2010). Although customer reluctance may be attributed to poor system design and support, there is also evidence to suggest that many customers do not have the capability, motivation or training to perform their role effectively. Many customers also claim to find participation stressful. One customer, responding to an on line forum linked to a radio debate on SSTs, claimed that their experience was so stressful that it had generated a particular mental condition; Technology Induced Stress Syndrome. This is unsurprising given the fact that consumers are expected to possess the skills and knowledge to operate as partial employees yet, unlike traditional workers, receive no formal training or reward for their contribution. Understanding and managing customer skills and knowledge in this context has received little attention to date (Murillo and Annabi 2002).

Research also suggests that customers are not the only actors in the service system who 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 and Waldman 1999, Halbeston and Buckley 2004 and Hsieh and Yen 2005, Chan K.W et al. 2010). Chan et al. (2010) describe customer participation as a 'double-edged sword', stating that although it 'enhances customers' economic value attainment and strengthens the relational bond between customers and employees, it also increases employees' job stress and hampers their job satisfaction' (p48). Similarly, Hsieh and Yen (2005), found that, 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. In the case of SCOT, many retailers are having to employ more highly skilled workers to provide training backup for consumers at the point of interaction. This is an entirely different facilitation and problem-solving (and arguably more stressful) role for workers than simply scanning goods themselves.  If it is inevitable that consumers will work alongside paid

employees, then there may be benefits to all actors in the system in ensuring that they can do their jobs properly.

<u>The willing and able 'working consumer'</u>

The topic of customer participation in service delivery has received a great deal of attention. Authors have classified various types and degrees of customer participation (Meuter and Bitner 1998, Bitner, Zeithaml, and Gremler 2010, Chan et al. 2010). Humphreys (2008) makes the useful distinction between 'collaboration', defined as the partnership of consumers with the company to co-produce a service, a brand identity or a product, and 'collective co-production' defined as the interaction between consumers to produce a brand community, a narrative, or product alterations independent of company input and stewardship (p 63). More recently, Johnson and Rapp (2010), focusing on the positive benefits of customer participation, generated a scale of customer helping behaviours. Behaviours were clustered into eight dimension; expanding, supporting and forgiving behaviours, increasing quantity, competitive behaviours, responding to research, displaying brands and increasing price. Although research supporting the effect of customer participation on customer satisfaction and loyalty appear to be rather mixed (Chan et al. 2010), the benefits for organisations in terms of productivity gains seem to be more widely recognised. At a conceptual level, however, there seems to be an incomplete picture. 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 and Young's (1979) thought-provoking article) to enhance conceptual and empirical knowledge about the customers' contribution to service productivity (Chase 1978, Johnston 1989, Lengnick-Hall 1996, Andersson et al. 1997, Bitner et al. 1997, Ennew and Binks 1999, Martin et al. 2001, Johnston and Clark 2001, Claycomb et al. 2001, Anitsal and Schumann 2007).

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 and 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 many 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 and Fisk 1992, Pine and Gilmore 1998, Baron et al. 2001, Harris et al. 2001, Voss and Zomerdijk 2007, Schmitt 2010), but they also help to ensure that the customer's service experience is a safe and enjoyable social event (Holbrook and Hirschman 1982, Adelman and Ahuvia 1995, Price and Arnould 1999, Harris et al. 2000, Caru and Cova 2007).

As well as the numerous benefits which come from treating customers as full or 'partial' employees (Lovelock and Young 1979, Mills and Morris 1986, Kelley et al. 1990), many have highlighted the negative consequences. In their review of the implications of *forced use* of technology based self-service, for example, Reinders et al. (2008) conclude that 'forced use leads to negative attitudes toward using the TBSS as well as toward the service provider, and indirectly leads to adverse effects on behavioral intentions' (p.107). More recently, Chan et al. (2010) cautioned against encouraging too much customer participation because of the negative impact on employee job stress, as noted above.

The spotlight on the customers' contribution has intensified with the introduction of the service-dominant logic in the field of marketing (Lusch and Vargo 2006, Vargo and Lusch 2004, Lusch, Vargo and O'Brien 2007). Here the customer takes on an increasingly central role throughout the entire value chain, as an operant resource (co-producer) rather than an operand resource (target). Using this lens, Arnould, Price and Malshe (2006) classify consumers' operant resources as physical, cultural, or social. Physical resources consist of physical and mental endowment, i.e. energy, emotion and strength. Cultural resources include specialized knowledge and skills, as well as history and imagination. Social resources incorporate family relationships, consumer communities and commercial relationships. Baron and Warnaby (2010) recently explored how consumers use their resources to enhance their relationship with an organisation. Their research showed how extensively customers – individually and collectively - *can* mobilise their operant resources if sufficiently motivated, and highlighted once again the potential contribution consumers are able and willing to make.

In summary, there is evidence that many consumers 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 consumers. So why are so many consumers still reluctant to participate? Why are the benefits of self-service not being fully realised? What is preventing consumers from fulfilling their potential as good 'service workers'?

In order to explore these questions in the context of existing literature, we have divided the working consumer's role into four distinct, very basic phases in the context of SCOT. Each of these phases has to be completed if the consumer is to carry out the task i.e. self-scan their goods. As SCOT represents a scenario in which a consumer 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 laboratory to locate our review.

The four phases of consumer work are laid out in Figure 1.

**Figure 1**

S.C.O.T
Phases of consumer 'work'
Reflects different levels of cognitive and behaviour activity
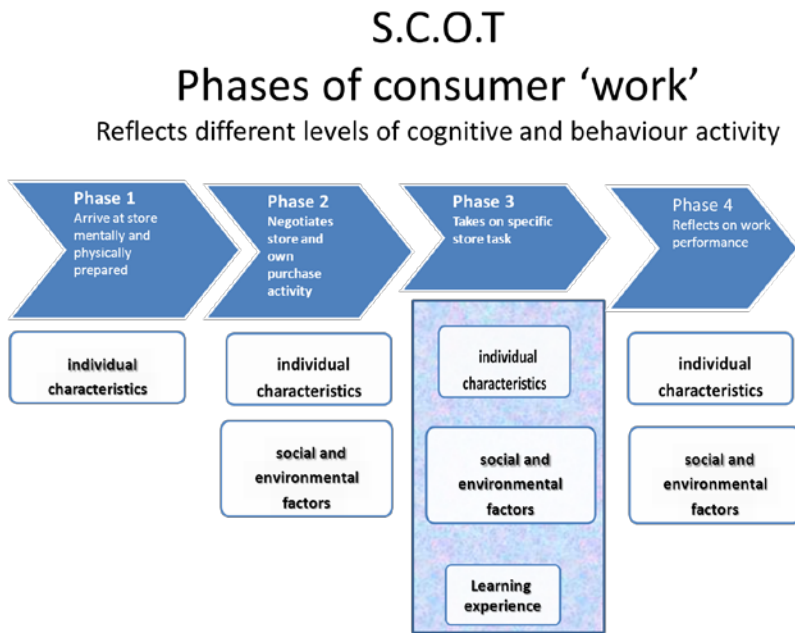
Each phase of work requires different levels of cognitive and behavioural effort from the consumer. Phase 1, is predominantly cognitive in terms of establishing an intention to engage with SCOT, if available. Phase 2 requires cognitive and behavioural effort as the consumer negotiates the store environment and manages their purchase activity. In Phase 3, cognitive and behavioural activity intensifies as the consumer confronts SCOT, perhaps for the first time. In Phase 4, the consumer engages in more cognitive activity reflecting on the positive and (or) negative outcomes of their 'work'. The review of the literature highlights the gap in understanding of the learning experience in Phase 3. There are clearly cognitive and behavioural forces at play in the consumer learning process, about which the works of Kolb (1976, 1984) and Sproles and Sproles (1990) on learning styles provide relevant insights.

The four phases are now explored in more detail.

*Phase 1*

The consumer 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 consumer 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 see benefits to company rather than themselves' (p.234). Parasuraman (2000) also focused on consumer characteristics to develop the Technology Readiness Index (TRI), a series of scale items measuring customers' readiness to embrace and interact with any technological innovation. The TRI highlights consumer optimism and innovativeness as drivers of adoption and discomfort and insecurity as inhibiting characteristics. A similar scale was developed by Zeithaml and Bitner (2003) who subsequently developed the concept of 'customer readiness' as a major factor

indicating whether customers will adopt a self-service innovation. This factor also identified a range of personal characteristics influencing adoption including motivation, ability, and clarity of the individual's role. 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 1992; Gatignon and Robertson 1991; Meuter al. 2005).

According to Walker et al. (2002) the decision whether to adopt SCOT would also be heavily influenced both by the consumer's capacity and capability. They define personal capacity or capability as the 'belief in one's ability to engage with, and use, technology-enabled services confidently and effectively' (p126). Zhu et al. (2007) also draw attention to the importance of considering consumer 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' (p503).

The features of the technology most widely cited as influencing adoption are low complexity (Stevenson, Bulruner, and Kumar 2000,) ease of use, (Kim and Stoel 2004) speed, control, reliability and safety (Dabholkar 1996, and 2003). Walker et al. (2002) also make the connection between capability and willingness, another cognitive construct. With SCOT, many consumers 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. A study by Marzocchi and Zammit (2006) segmented customers into four clusters based on different levels of capacity and willingness. The first cluster, labelled 'people–people pragmatists', were defined as reasonably willing users of technologically facilitated services, although they see only average benefits from technology. The second cluster, the 'techno-waries', saw benefits in technology but had concerns about using and learning how to use technological systems. The third cluster, the 'techno-beneficiaries', was characterised by a total denial of the need for personal contact and identified strongly with the marketed benefits of technology. The fourth cluster, 'techno-phobes' comprised people who saw no benefits in technology and who are concerned with what they perceived to be the difficulties and the risk associated with the use of technologically. In a study of forced use of SSTs, Reinders et al. (2008, p107) found that 'forced use leads to negative attitudes toward using the TBSS as well as toward the service provider and it indirectly leads to adverse effects on behavioral intentions'.

*Phase 2*

Once in the store, the consumer's decision about whether to start work is influenced by their individual preconceptions and characteristics outlined above, combined with real-time, situational realities such as the length of the queues at manned checkouts, the size of their purchase, the time of day, presence of other people (strangers and shopping companions) i.e. 'social' presence (Kinard et al. 2009 and Wang et al 2012. Many authors have identified the positive and negative impact of strangers and shopping companions on various dimensions of instore customer behaviour. Harris and Baron (2004) for example identified the positive impact of shared conversations between strangers in retail settings. Grove and Fisk (1994) similarly identified how customers do and don't 'get along' while queueing in Florida theme parks. 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, 1997a), who draw on the behavioural perspective model to explain consumer behaviour in terms of the scope of the setting in which it occurs and the learning history of the individual.

*Phase 3*

The customer comes into contact with the technology and the work really begins. Unless the consumer 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. This is the area which appears to be in most pressing need of consideration, and is the focus of this research. In the field of consumer behaviour, Kendal and Sproles (1990) explore the relationship between individuals' learning styles and their consumer 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 consumer 'has an individual learning style which is thought to be enduring, patterned and a preferred mode of learning' (Kendal and Sproles 1990). 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).

Based on research with students, and drawing on earlier work (Cox, Sproles and Sproles 1988), Kendal and Sproles (1990) identify a series of statements which reflect six learning characteristics: the serious analytical learner, the active practical learner, the observation centered learner, the concrete detail fact oriented learner, the passive accepting learner and the passive, struggling learner. There have been (and still are) many critics of attempts to classify learning style, and related learning style inventories such as Kolb's LSI and Mumfords LSQ. One of Reynolds' (1997) principle objections is that theorists have 'failed to take account of the social context in which learning takes place' (Sadler-Smith p295). For this reason, although we draw heavily on the statements used by Sproles and colleagues, our methodology reflects our concern for understanding learning styles in the specific context of SCOT.

*Phase 4*

The final phase includes outcomes which may be relevant for both the customer and the organisation. From a customer perspective, 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 repatronise the store; this means that customers who are satisfied with self-scanning are similarly satisfied with the supermarket' (p666)

**Method**

Two stages were undertaken.

Stage 1: Qualitative Study

To overcome the objection that 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 self-scan users exploring motivation, 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, what they liked and disliked, 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 (1985). Eight dimensions emerged from the data which were consistent with the learning style inventory identified in the literature review (Sproles 1990, Kendall 1986). Six additional dimensions were identified, making a total of fourteen dimensions of learning style for inclusion in a questionnaire in stage two. The additional dimensions are identified in Table 1 and supported with quotations from respondents.

TABLE 1 ABOUT HERE

Throughout the 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.

These customer-identified outcomes were included as the following statements in the stage 2 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

Stage 2: Quantitative Study

In an effort to enhance face and content validity, a pretest of the potential survey instrument was carried out with 50 individually administered questionnaires. Modifications were made to take account of difficulties, suggestions and criticisms. The modified learning style statements used in this stage are shown in Appendix 1.

*Data Collection*

Data were 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 2.

TABLE 2 ABOUT HERE

*Exploratory Factor Analysis*

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 3). The factors were labelled 'Regular Reassurance', 'Motivated Practice' and 'Cautious Discovery', respectively. 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 ($p<0.001$). The Cronbach alpha coefficients for the three factors ranged between 0.63 and 0.74 demonstrating reasonable internal consistency and reliability.

TABLE 3 ABOUT HERE

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 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 4.

TABLE 4 ABOUT HERE

The main findings are:

- Regular Reassurance Learning Group. People aged 60+ and females, tend to require the most regular reassurance.
- Motivated Practice Learning Group. Customers' age and gender did not have a statistically significant effect on this learning style.
- Cautious Discovery Learning Group. The main influence on this learning style is age. In particular, customers aged 40+ tended to be more likely to adopt this learning style than their younger counterparts.

*Outcome Variables*

Separate regression analyses were run with the three learning style factors on three outcome variables. The results are presented in Table 5.

TABLE 5 ABOUT HERE

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 consumer's *learning style* affects their participation in one form of retail self-service: SCOT. Informed by insights from in-depth interviews with consumers, we undertook a questionnaire-based survey to explore the relationship between different consumer learning styles and key performance outcomes. Although considerable research has explored participation in the provision of services and defined consumers as 'partial employees' of the service providers (Etgar 2008; Bitner et al. 1997; Kelley, Donnelly & Skinner 1990), to the best of our knowledge no empirical research has systematically investigated customer performance with SCOT linked to learning styles. Similarly, although learning style inventories have been well established in the education literature (Kolb 1976, 1984; Kendall 1986; Sproles 1987; Sproles & Sproles 1990 and Guild 2001), there appears to be no attempt to explore the wide applicability and generalizability of learning styles of consumers in retailing, or in the context of self-service.

This research has begun to fill the research gap through identifying significant differences in consumer 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 consumers prefer to engage with SCOT, and learn how to become service workers. Consumers who want 'Regular Reassurance', are regular self-scan users, tend to be females and require reassurance throughout the learning process, valuing the opportunity to ask questions and watch others. The second category, 'Motivated Practice' captures consumers 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. 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 'Motivated Practice' learning style is the only one linked to enjoyment of using SCOT.

## 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 consumer demographic and psychographic factors driving adoption and use of SSTs, this study investigates how *learning style* affects the performance of the 'working' consumer. Our findings offer several important implications for retailers trying to incorporate consumer work into the service delivery process.

First, it is clear that consumers 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. Although 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 response would result in more *effective* performance in the long term, enhancing the quality of the customer's learning experience. 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. This might be achieved through a more targeted communication campaign. The customers' learning styles identified in this research can be used as a tool to assist retailers to develop targeted training and education programmes which will ultimately help customers become more comfortable and effective with using SCOT.

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 consumer'. 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 consumers 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.'

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 consumer 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**

14

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 does preferred customer learning styles. This too 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. We hope that we will have stimulated interest from colleagues into carrying our further larger scale studies in this area.

**References**

Adelman, M.B. and Ahuvia, A.C. (1995), "Social support in the service sector: the antecedents, processes, and outcomes of social support in an introductory service", *Journal of Business Research,* Vol. 32, no 3, pp. 273-282.

Anderson, E.W., Fornell, C. and Rust, R.T. (1997), "Customer satisfaction, productivity, and profitability: differences between goods and services", *Marketing Science*, Vol. 16, No. 2, pp. 129-145.

Anitsal, I. and Schumann, D.W. (2007), "Toward a conceptualization of customer productivity: the customer's perspective on transforming customer labor into customer outcomes using technology-based self-service options", *The Journal of Marketing Theory and Practice*, Vol. 15, No. 4, pp. 349-363.

Arnould, E.J., Price, L.L. and Malshe, A. (2006), "Toward a cultural resource-based theory of the customer", The service-dominant logic of marketing: Dialog, debate and directions, , pp. 320-333.

Baron, S., Harris, K. & Harris, R. (2001), "Retail Theater: The "Intended Effect" of the Performance", *Journal of Service Research*, Vol. 4, No. 2, pp. 102-117.

Baron, S., Patterson, A. & Harris, K. 2006, "Beyond technology acceptance: understanding consumer practice", International Journal of Service Industry Management, vol. 17, no. 2, pp. 111-135.

Baron, S., Patterson, A., Warnaby, G. & Harris, K. 2010, "Service-dominant logic: marketing research implications and opportunities", Journal of Customer Behaviour, vol. 9, no. 3, pp. 253-264.

Baron, S. & Warnaby, G. 2011, "Individual customers' use and integration of resources: Empirical findings and organizational implications in the context of value co-creation", Industrial Marketing Management, vol. 40, no. 2, pp. 211-218.

Bitner, M.J. 2001, "Service and technology: opportunities and paradoxes", Managing service quality, vol. 11, no. 6, pp. 375-379.

Bitner, M.J., Brown, S.W. & Meuter, M.L. 2000, "Technology infusion in service encounters", Journal of the Academy of marketing Science, vol. 28, no. 1, pp. 138-149.

Bitner, M.J., Faranda, W.T., Hubbert, A.R. & Zeithaml, V.A. (1997), "Customer contributions and roles in service delivery", International journal of service industry management, vol. 8, no. 3, pp. 193-205.

Bitner, M.J., Zeithaml, V.A. & Gremler, D.D. (2010), "Technology's impact on the gaps model of service quality" in Handbook of Service Science Springer, .Maglio Paul P., Kieliszewski Cheryl A. and Spohrer James C., eds. New York: Springer, pp 197–218.

Bobbitt, L.M. & Dabholkar, P.A. 2001, "Integrating attitudinal theories to understand and predict use of technology-based self-service: the internet as an illustration", International Journal of Service Industry Management, vol. 12, no. 5, pp. 423-450.

Bowen, D.E. 1986, "Managing customers as human resources in service organizations", Human resource management, vol. 25, no. 3, pp. 371-383
.
Bowen, D. & Waldman, D. 1999, "Customer-driven employee performance", Pulakos (Eds.), The changing nature of performance, vol. 154, pp. 191.

Carù, A. & Cova, B. 2007, Consuming experience, Routledge.

Castro, D., Atkinson, R. & Ezell, S. 2010, "Embracing the self-service economy", I.T.I.F Foundation Available at SSRN 1590982,

Chan, K.W., Yim, C.K. & Lam, S.S. 2010, "Is customer participation in value creation a double-edged sword? Evidence from professional financial services across cultures", Journal of Marketing, vol. 74, no. 3, pp. 48-64.

Chase, R.B. (1978), "Where does the customer fit in a service operation?", *Harvard business review*, Vol. 56, No. 6, pp. 137-142.

Churchill Jr, G.A. (1979), "A paradigm for developing better measures of marketing constructs", *Journal of Marketing Research*, Vol. 16, No. 1, pp. 64-73.

Claycomb, C., Lengnick-Hall, C.A. & Lawrence, W. "Inks (2001)," The Customer as a Productive Resource: A Pilot Study and Strategic Implications,"", Journal of Business Strategies, vol. 18, no. 1, pp. 47-69
.
Cova, B. and Dalli, D. (2009), "Working consumers: the next step in marketing theory?", *Marketing Theory*, Vol. 9, No. 3, pp. 315-339.

Cox, D.E., Sproles, E.K. and Sproles, G.B. (1988), "Learning style variations among vocational agriculture students", *Journal of Agricultural Education*, Vol. 29, No. 1, pp. 11-19.

Cronin, J.J. and Taylor, S.A. (1992), "Measuring service quality: a re-examination and extension", *Journal of Marketing*, Vol. 56, No. 3, pp. 55-68.

Dabholkar, P.A. 1996, "Consumer evaluations of new technology-based self-service options: an investigation of alternative models of service quality", International Journal of research in Marketing, vol. 13, no. 1, pp. 29-51.

Dabholkar, P.A. 1992, "Role of affect and need for interaction in on-site service encounters", Advances in Consumer Research, vol. 19, no. 1, pp. 563-569.

Dabholkar, P.A. & Bagozzi, R.P. 2002, "An attitudinal model of technology-based self-service: moderating effects of consumer traits and situational factors", Journal of the Academy of Marketing Science, vol. 30, no. 3, pp. 184-201.

Dabholkar, P.A., Bobbitt, L.M. & Lee, E. 2003, "Understanding consumer motivation and behavior related to self-scanning in retailing: implications for strategy and research on technology-based self-service", International Journal of Service Industry Management, vol. 14, no. 1, pp. 59-95.

Davis, F.D. 1989, "Perceived usefulness, perceived ease of use, and user acceptance of information technology", MIS quarterly, , pp. 319-340.

Dean, D.H (2008) "Shopper age and the use of self-service technologies" Managing Service Quality Vol.18 No.3 pp.225-238

Ennew, C.T. & Binks, M.R. 1999, "Impact of participative service relationships on quality, satisfaction and retention: an exploratory study", Journal of Business Research, vol. 46, no. 2, pp. 121-132.

Etgar, M. 2008, "A descriptive model of the consumer co-production process", Journal of the Academy of Marketing Science, vol. 36, no. 1, pp. 97-108.

Fishbein, M. & Ajzen, I. 1975, Belief, attitude, intention and behavior: An introduction to theory and research,
.
Foxall, G.R. 1997, Marketing psychology: The paradigm in the wings, Palgrave Macmillan.

Foxall, G.R. 1990, Consumer psychology in behavioral perspective, Beard Books.

Garcia-Murillo, M. & Annabi, H. 2002, "Customer knowledge management", Journal of the Operational Research Society, , pp. 875-884.

Grove, S.J. & Fisk, R.P. 1992, "The service experience as theater", Advances in consumer research, vol. 19, no. 1, pp. 455-462.

Guild, P.B. 2001,  Diversity, learning style and culture [Homepage of New Horizons for Learning], [Online]. Available: www.newhorizons.org/strategies/styles/guild.htm [2010, Sep].

Harris, K. & Baron, S. 2004, "Consumer-to-consumer conversations in service settings", Journal of Service Research, vol. 6, no. 3, pp. 287-303.

Harris, K., Baron, S. & Parker, C. 2000, "Understanding the consumer experience: It's' good to talk'", Journal of Marketing Management, vol. 16, no. 1-3, pp. 111-127.

Harris, K., Harris, R. & Baron, S. 2001, "Customer participation in retail service: lessons from Brecht", International Journal of Retail & Distribution Management, vol. 29, no. 8, pp. 359-369.

Hennig-Thurau, T., Gwinner, K.P., Walsh, G. & Gremler, D.D. 2004, "Electronic word-of-mouth via consumer-opinion platforms: what motivates consumers to articulate themselves on the internet?", Journal of interactive marketing, vol. 18, no. 1, pp. 38-52.

Holbrook, M.B. & Hirschman, E.C. 1982, "The experiential aspects of consumption: consumer fantasies, feelings, and fun", Journal of consumer research, pp. 132-140.

Hsieh, an-tien and chang-hua yen the effect of customer participation on service providers' job stress the service industries journal volume 25 issue 6 2005 pages 891-905

Jamieson A et al "self-service checkouts have not cut supermarkets queues" the telegraph 21st august 2010 accessed 20th October 2013

Johnson, J.W. & Rapp, A. 2010, "A more comprehensive understanding and measure of customer helping behavior", Journal of Business Research, vol. 63, no. 8, pp. 787-792.

Johnston, R. 1989, "The customer as employee", International Journal of Operations & Production Management, vol. 9, no. 5, pp. 15-23.

Johnston, R. & Jones, P. 2004, "Service productivity: towards understanding the relationship between operational and customer productivity", International Journal of Productivity and Performance Management, vol. 53, no. 3, pp. 201-213.

Johnston, R.A. & Clark, G.A. 2005, Service operations management: improving service delivery, Pearson Education.

Kelley, S.W., Donnelly, J.H. & Skinner, S.J. 1990, "Customer participation in service production and delivery.", Journal of Retailing,
.
Kendall, E.L. & Sproles, G.B. 1986, "Learning Styles among Secondary Vocational Home Economics Students: A Factor Analytic Test of Experiential Learning Theory.", Journal of Vocational Education Research, vol. 11, no. 3, pp. 1-15.

Kim, S. & Stoel, L. 2004, "Dimensional hierarchy of retail website quality", Information & Management, vol. 41, no. 5, pp. 619-633.

Kinard, B.R., Capella, M.L. & Kinard, J.L. 2009, "The impact of social presence on technology based self-service use: The role of familiarity", Services Marketing Quarterly, vol. 30, no. 3, pp. 303-314.

Kolb, D.A. 1984, Experiential learning: Experience as the source of learning and development, Prentice-Hall Englewood Cliffs, NJ.

Kolb, D.A. 1976, Learning style inventory: self-scoring test and interpretation booklet, McBer.

Lengnick-Hall, C.A. 1996, "Customer contributions to quality: a different view of the customer-oriented firm", academy of Management review, vol. 21, no. 3, pp. 791-824.

Liljander, V., Gillberg, F., Gummerus, J. & van Riel, A. 2006, "Technology readiness and the evaluation and adoption of self-service technologies", Journal of Retailing and Consumer Services, vol. 13, no. 3, pp. 177-191.

Lincoln, Y.S. & Guba, E.G. 1985, "Establishing trustworthiness", Naturalistic inquiry, , pp. 289-331.
Lovelock, C.H. & Young, R.F. 1979, "Look to consumers to increase productivity", Harvard business review, vol. 57, no. 3, pp. 168-178.

Lusch, R.F. & Vargo, S.L. 2006, "Service-dominant logic: reactions, reflections and refinements", Marketing theory, vol. 6, no. 3, pp. 281-288.

Lusch, R.F., Vargo, S.L. & O'Brien, M. 2007, "Competing through service: Insights from service-dominant logic", Journal of Retailing, vol. 83, no. 1, pp. 5-18.

Lusch, R.F., Vargo, S.L. & Wessels, G. 2008, "Toward a conceptual foundation for service science: Contributions from service-dominant logic", IBM Systems Journal, vol. 47, no. 1, pp. 5-14.

Martin Jr, C.R., Horne, D.A. & Chan, W.S. 2001, "A perspective on client productivity in business-to-business consulting services", International Journal of Service Industry Management, vol. 12, no. 2, pp. 137-158.

Marzocchi, G.L. & Zammit, A. 2006, "Self-scanning technologies in retail: determinants of adoption", The Service Industries Journal, vol. 26, no. 6, pp. 651-669.

Meuter, M. L. and Bitner, M. J. 1998, "Self-Service Technologies: Extending Service Frameworks and Identifying Issues for Research" in Marketing Theory and Applications, ed. Grewal, D. and Pechman, C., American Marketing Association, , pp. 12-19.

Meuter, M.L., Bitner, M.J., Ostrom, A.L. & Brown, S.W. 2005, "Choosing among alternative service delivery modes: an investigation of customer trial of self-service technologies", Journal of Marketing, , pp. 61-83.

Meuter, M.L., Ostrom, A.L., Roundtree, R.I. & Bitner, M.J. 2000, "Self-service technologies: understanding customer satisfaction with technology-based service encounters", the Journal of Marketing, , pp. 50-64.

Mills, P.K. & Morris, J.H. 1986, "Clients as "partial" employees of service organizations: Role development in client participation", Academy of Management Review, vol. 11, no. 4, pp. 726-735.

Oliver, D., Livermore, C.R. & Sudweeks, F. 2009, Self-service in the Internet age: expectations and experiences, Springer.

Ostrom, A.L., Bitner, M.J., Brown, S.W., Burkhard, K.A., Goul, M., Smith-Daniels, V., Demirkan, H. & Rabinovich, E. 2010, "Moving forward and making a difference: research priorities for the science of service", Journal of Service Research, vol. 13, no. 1, pp. 4-36.

Parasuraman, A. & Grewal, D. 2000, "The impact of technology on the quality-value-loyalty chain: a research agenda", Journal of the academy of marketing science, vol. 28, no. 1, pp. 168-174.

Perea y Monsuwe´, T., Dallaert, B.G.C. and de Ruyter, K. 2004, "What drives consumers to shop online? A literature review", International Journal of Service Industry Management, vol. 15, no. 1, pp. 102-121.

Pine, B.J. & Gilmore, J.H. 1998, "The experience economy", Harvard business review, vol. 76, no. 6.

Price, L.L. & Arnould, E.J. 1999, "Commercial friendships: service provider-client relationships in context", The Journal of Marketing, , pp. 38-56.

Reinders, M.J; Dabholkar P.A and Frambach R.T (2008) "Consequences of Forcing Customers to use Technology-based Self –service *Journal of Service Research* Vol. 11, No. 2 pp 107-23

Reynolds, M. 1997, "Learning styles: a critique", Management learning, vol. 28, no. 2, pp. 115-133.

Robertson, T.S. & Gatignon, H. 1991, "How innovators thwart new entrants into their market", Strategy & Leadership, vol. 19, no. 5, pp. 4-11.

Rodie, A. R., and Kleine, S.S. 2000, "Customer Participation in Services Production and Delivery" in Handbook of Services Marketing & Management, ed. Teresa, A., and Swartz, D. I., Thousand Oaks, CA: Sage, pp. 111-125.

Sadler-Smith, E. 2001, "A reply to Reynolds's critique of learning style", Management Learning, vol. 32, no. 3, pp. 291-304.

Schmitt, B.H. (2010), Customer Experience Management: a revolutionary approach to connecting with your customer, New Jersey; John Wiley and Sons, Inc

Sproles, E.K. 1987, "Characterizing Vocational Students", Journal of Vocational Education Research, vol. 12, no. 4, pp. 1-11.

Sproles, E.K. & Sproles, G.B. 1990, "Consumer Decision-Making Styles as a Function of Individual Learning Styles", Journal of Consumer Affairs, vol. 24, no. 1, pp. 134-147.

Stevenson, J.S., Bruner, G.C. & Kumar, A. 2000, "Webpage background and viewer attitudes", Journal of Advertising Research, vol. 40, no. 1/2, pp. 29-34.

Vargo, S.L. and Lusch, R.F. (2004), "Evolving to a new dominant logic for marketing", Journal of Marketing, , pp. 1-17.

Venkatesh, V., Morris, M.G., Davis, G.B. & Davis, F.D. 2003, "User acceptance of information technology: Toward a unified view", MIS quarterly, , pp. 425-478.

Voss, C. and Zomerdijk, L. 2007, Innovation in Experiential Serives-An Empirical View, London Business School.

Walker, R.H and Johnson, L.W. (2006), "Why consumers use and do not use technology-enabled services" *Journal of Services Marketing* Vol.20 No.2 pp125-35

Walker, R,H., Craig-Lees, M., Hecker, R. and Francis,H. (2002), "Technology-enabled service delivery: an investigation of reasons affecting customer adoption and rejection" International Journal of service Industry Management, Vol.13 No.1, pp.91-106

Wang, C; Harris, J and Patterson P. (2012) "Customer choice of self-service technology: the roles of situational influences and past experience" Journal of service Management Vol.23 No.1 pp.54-78

Weijters, B., Rangarajan, D., Falk, T. & Schillewaert, N. 2007, "Determinants and outcomes of customers' use of self-service technology in a retail setting", Journal of Service Research, vol. 10, no. 1, pp. 3-21.

Zeithaml, V. and Bitner, M.J. (ed) 2003, Services Marketing: Integrating Customer Focus across theFirm, 3rd ed, McGraw-Hill, New York, NY.

Zhu, Z; Nakata, C; Sivakumar, K and Grewal, D (2007) "Self-service technology effectiveness; the role of design features and individual traits Journal of the Academy of marketing science No 35 pp 492-506

Research reported in http://www.selfserviceworld.com/article/216679/Retailers-shaking-up-self-checkout-offerings-as-deployments-increase 22nd October 2013

Anderberg, M.R. 1973, Cluster analysis for applications, Academic press. New York.
Arbuckle, J.L. 1996, "AMOS 3.5", Computer software].Chicago: SmallWaters .

Babakus, E. & Boller, G. 1992, "An empirical assessment of the SERVQUAL scale", Journal of Business Research, vol. 24, pp. 253-268.

Dabholkar, P.A., Thorpe, D.I. & Rentz.J.O. 1996, "A measure of Service Quality for Retail Stores: Scale Development and Validation", Journal of the Academy of Marketing Science, vol. 1996, no. 24, pp. 1.

Dabholkar, Pratibha A (1996), "Consumer Evaluations of New Technology- Based Self-Service Options: An Investigation of Alternative Models of Service Quality," International Journal of Research in Marketing, 13 (1), 29–51.

Davis, Fred D. (1989), "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," MIS Quarterly, 13 (3), 319–40.

DeVellis, R.F. 1991, Scale Development-Theory and Applications, Sage, London. Etgar, M. 2008, "A descriptive model of the consumer co-production process", Journal of the Academy of Marketing Science, vol. 36, no. 1, pp. 97-108.

Fornell, C. & Larcker, D. 1981, "Evaluating structural equation models with unobservable variables and measurement error", Journal of Marketing Research, vol. 18, no. 2, pp. 39-50.

Gough, O. & Sozou, P.D. 2005, "Pensions and retirement savings: cluster analysis of consumer behaviour and attitudes", Marketing, vol. 23, no. 7, pp. 558-570.

Guild, P, McKinney, L, and Fouts, J. 1990, A study of the learning styles of elementary students: Low achievers, average achiever, high achievers, WA: The Teaching Advisory, Seattle.

Guild, P.B. 2001, , Diversity, learning style and culture [Homepage of New Horizons for Learning], [Online]. Available: www.newhorizons.org/strategies/styles/guild.htm [2010, Sep]
.
Hair, J.F.J., Anderson, R.E., Tatham, R.L. & Black, W.C. 1998, Multivariate Data Analysis, Prentice Hall, New Jersey.

Hu, L.& Bentler, P.M. 1999, "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives", Structural Equation Modeling: A Multidisciplinary Journal, vol. 6, pp. 1-55.

Kelley, S.W., Donnelly Jr, J.H. and Skinner, S.J. (1990), "Customer participation in service production and delivery," Journal of Retailing, 66 (3), 315-335.

Kendall, E.L. & Sproles, G.B. 1986, "Learning Styles among Secondary Vocational Home Economics Students: A Factor Analytic Test of Experiential Learning Theory.", Journal of Vocational Education Research, vol. 11, no. 3, pp. 1-15.

Kim, Soyoung and Leslie Stoel (2004), "Dimensional Hierarchy of Retail Website Quality," *Information and Management,* 41 (5), 619–34.

Kolb, D.A. 1984, Experiential learning: Experience as the source of learning and development, Prentice Hall.

Kolb, D.A. (ed) 1976, Learning Style Inventory, self-scoring test and interpretation booklet.

Lovelock, Christopher H. and Robert F. Young (1979), "Look to Consumers to Increase Productivity," Harvard Business Review, 57 (3), 168–7.

Lin, J.S.C. & Hsieh, P. 2006, "The role of technology readiness in customers' perception and adoption of self-service technologies", International Journal of Service Industry Management, vol. 17, no. 5, pp. 497-517.

Lusch, R.F., Vargo, S.L. & O'Brien, M. 2007, "Competing through service: Insights from service-dominant logic", Journal of Retailing, vol. 83, no. 1, pp. 5-18.

Manolis, C., Meamber, L.A., Winsor, R.D. & Brooks, C.M. 2001, "Partial employees and consumers: a postmodern, meta-theoretical perspective for services marketing", Marketing Theory, vol. 1, no. 2, pp. 225.

Meuter, Matthew L., Amy L. Ostrom, Robert I. Roundtree and Mary Jo Bitner (2000), "Self-Service Technologies: Understanding Customer Satisfaction with Technology-Based Service Encounters," Journal of Marketing, 64 (3), 50–64.

Oliver, Dave, Celia Romm Livermore and Neveen Awad Farag (2009), "An Explanatory Model of Self-Service on the Internet," in Self-Service in the Internet Age: Expectations and Experiences, Oliver David, Livermore Celia Romm and Sudweeks Fay, eds. New York: Springer, 257–74.

Prahalad, C. K., Ramaswamy, V. 2004, The future of competition, Harvard Business School Pub.

Punj, G. & Stewart, D.W. 1983, "Cluster analysis in marketing research: review and suggestions for application", Journal of Marketing Research, vol. 20, no. 2, pp. 134-148.

Sproles, E.K. 1987, "Characterizing Vocational Students", Journal of Vocational Education Research, vol. 12, no. 4, pp. 1-11.

Sproles, E.K. & Sproles, G.B. 1990, "Consumer decision-making styles as a function of individual learning styles", Journal of Consumer Affairs, vol. 24, no. 1, pp. 134-147.

Wiggins Johnson, J., and Rapp, A.(2010) 'A more comprehensive understanding and measure of customer helping behaviour' Journal of Business Research 63  787–792

Zeithaml, V.A., Berry, L.L. & Parasuraman, A. 1996, "The behavioural consequences of service quality", Journal of Marketing, vol. 60, no. 2, pp. 31-47.

Table 1: Six 'additional' learning dimensions relevant to SCOT

| Additional Learning Dimension | Statement | Supporting Quotation(s) |
|---|---|---|
| Being motivated to learn | I have to be motivated to do something before I will learn how to do it properly | "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." |
| Starting with instructions but taking short cuts | I might start by carefully following instructions, but am likely to take cuts | "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." |
| Following instructions when faced with a new task | I always follow instructions when faced with a new task | "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."<br><br>"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." |
| Giving up if not successful first time | If I have not learnt to do something at the first attempt, I will probably give up | "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..." |
| Preferring learning without others watching | I prefer to learn how to do things without other people watching me | "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." |
| Preferring it if someone is there to help with mistakes | I like to know that someone is there to help if I make a mistake when learning new things | "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." |

Table 2 Survey Respondent Characteristics

| Age (years) | Percentage of Respondents |
|---|---|
| Less than 25 | 28.4 |
| 25 – 40 | 27.2 |
| 41 – 55 | 22.4 |
| 56 – 60 | 13.4 |
| More than 60 | 8.6 |
| | |
| **Gender** | |
| Male | 47.4 |
| Female | 52.6 |
| | |
| **Marital Status** | |
| Married | 40.1 |
| Living with Partners | 18.1 |
| Single | 41.8 |
| | |
| **Employment Status** | |
| Full-Time | 45.3 |
| Part-Time | 14.7 |
| Full-Time Education | 18.5 |
| Housewife/Househusband | 10.3 |
| Unemployed | 9.9 |
| Retired | 1.3 |
| | |
| **Frequency of Using Self-scan Checkouts** | |
| Hardly at All | 34.1 |
| A Few Times | 43.5 |
| Many Times | 13.4 |
| Every Time | 9.1 |

Table 3 Exploratory Factor Analysis

Rotated Component Matrix – Factor Loadings

Component

| Learning Style Statement | Regular Reassurance | Motivated Practice | Cautious Discovery |
|---|---|---|---|
| I like to know that someone is 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 properly | | 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 |
| Cronbach's Alpha | 0.74 | 0.66 | 0.63 |

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

**Table 4:  The Influence of Individual Characteristics on  Consumers' Learning Styles**

| INDIVIDUAL CHRACTERISTICS | | | | DEPENDENT VARIABLES | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **PREDICTORS: Dummy Variables** | **Regular Reassurance** | | | **Motivated Practice** | | | **Cautious Discovery** | | |
| | *B* | *t* | *β* | *B* | *t* | *β* | *B* | *t* | *β* |
| **Age** | | | | | | | | | |
| <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*** |
| **Gender** | | | | | | | | | |
| Female vs. Male | -0.29 | -2.27 | -0.15* | -0.13 | -0.89 | -0.06 | -0.23 | -1.43 | -0.09 |
| | | *R²=0.18* | | | *R²=0.05* | | | *R²=0.26* | |

**Note: * p<0.05, **p<0.01, *** p<0.001, unstandardised coefficients (*B*), t-statistics (*t*), standardised coefficients (*β*).**

Table 5 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 |
| | $R^2 = 0.11$ Adjusted $R^2 = 0.10$ | | $R^2 = 0.19$ Adjusted $R^2 = 0.18$ | | $R^2 = 0.21$ Adjusted $R^2 = 0.20$ | |

**Appendix 1:      Learning Style Questions**

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

2.  I tend to think things through carefully before starting a new task*

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

4.  I often learn things through watching what others do*

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

6.  I enjoy taking down notes and writing down facts as I learn*

7.  I need the opportunity to ask questions as I learn*

8.  I always follow instructions carefully when faced with a new task**

9.  I tend to think back on what I learn*

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

11. I prefer to learn how to do things without other people watching me**

12. "Doing things" is my preferred way of learning*

13. I feel that observing is a good way for me to learn*

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

*statements adapted from Sproles 1990; Kendall 1986
**statements arising from the stage 1 qualitative research