

Customer Choice of Self-Service Kiosks in Service Transactions

S. Galdolage¹

Department of Marketing Management, Faculty of Management Studies and Commerce University of Sri Jayewardenepura, Sri Lanka

Abstract

Purpose: This paper aims at creating a sense of understanding about the reasons for customer choices when it comes to self-service kiosks in performing service transactions.

Design/methodology/approach: In exploring the research aims, semi-structured interviews were conducted with twenty-five selected customers based on a non-probabilistic purposeful sampling method and data were analysed using the application of a thematic analysis method.

Findings: The study found that nine primary factors played a role in a customer's choice of self-service kiosks. These factors were classified into three conceptual domains as factors related to 'self-service technologies', 'individuals' and 'society.'

Research Limitations/Implications: The study is exploratory and was conducted with 25 respondents. Further, it was limited to kiosks disregarding other types of Self-Service-Technologies (SSTs). Thus, findings may not be able to generalize all types of SSTs or to a larger population.

Practical Implications: This classification provides a holistic picture on SST acceptance, particularly self-service kiosks, which was lacking in previous research work. The study draws the attention of practitioners to ensure whether the SST Kiosks provided by them are positively linked with these varieties of influences in motivating customer acceptance.

Originality/Value: This can be considered as a frontier study, which provides a novel understanding on reasons behind customer's choice in SST kiosks that enhance the scientific utility of the paper. As practical utilities, it guides service providers on designing and delivering their technological interfaces to match customer expectations which gain competitive advantages in return.

Key Words: Self-service technologies, kiosks, technological interfaces, customer choice/intention, acceptance/trial

¹ Corresponding author: sandamali@sjp.ac.lk
ORCID: <https://orcid.org/0000-0003-3257-2882>

INTRODUCTION

A service encounter is viewed as “the dyadic interaction between the customer and service provider” (Surprenant and Solomon, 1987, p.87) and has typically been limited to interpersonal interactions (Solomon *et al.*, 1985). However, the advancement of technologies has changed the traditional service interfaces (Curran *et al.*, 2003) with self-service technologies (Meuter and Bitner, 1998; Verhoef *et al.*, 2009) appearing in an increasing array of services (Meuter *et al.*, 2005). A corollary of these changes has meant that there is an increasing degree of customer owned self-responsibility (Ding *et al.*, 2007).

With the use of these technologies, customers become partial employees of the service organization (Meuter and Bitner, 1998) by creating the service through minimum or no assistance from organizational employees (Jo Bitner *et al.*, 1997). An increasing number of service organizations are embracing SSTs since customers are interacting more with machines now and this has altered their role from passive to more active (Hilton *et al.*, 2013). Although customers were supposed to perform only routine and simple transactions at the beginning, currently more complex and non-routine service transactions are provided at SSTs (Quinn *et al.*, 1990). Now, SSTs are becoming points of difference in the many services (Verhoef *et al.*, 2009) and there is a tendency among people to work with SSTs rather than depend on the organization’s employees (Meuter *et al.*, 2000).

The tremendous growth in SSTs has not been accompanied by commensurate academic inquiries (Verhoef *et al.*, 2009). Previous literature highlights the inadequate attention given to technological interfaces (Meuter *et al.*, 2000), in service encounter research (Bitner *et al.*, 2002), as well as in consumer evaluations (Dabholkar, 1996), and their experiences in SSTs such as kiosks (Hilton *et al.*, 2013; Verhoef *et al.*, 2009). Additionally, transforming traditional service encounters into SSTs without having adequate understanding of customer perceptions has been identified as a risk (Hilton *et al.*, 2013).

Given this backdrop, this study focuses on exploring factors affecting customer intention of accepting SST kiosks in their service transactions. This study provides a comprehensive understanding on the totality of influences under three main conceptual domains; SSTs, individuals and society. This paper first presents the conceptual foundations on understanding self-service technologies, discussing the existing literature and previous research attempts

in measuring the consumer acceptance of general technologies and SSTs in specific. Next, the methodology is provided and followed by the findings and a discussion. Finally, it provides a theoretical as well as practical contribution of the study with the limitations and future research directions.

Literature Review

Literature focuses on expounding mainly the Self-Service Technologies in services, Interactive kiosks and customer acceptance of such SSTs.

Self-service Technologies in services

Technological maturity has inspired the service encounters through self-service technologies (Meuter *et al.*, 2005; Curran *et al.*, 2003). The high cost of labour has also undetectably influenced organizations to convert their business processes into technologically incorporated advanced operations (Dabholkar, 1996; Saarijärvi *et al.*, 2013). The growth of the World Wide Web splendidly contributes towards the wider spread of SSTs (Hilton *et al.*, 2013) and multimedia rich communications in the internet creates a successful background for customer interactions (Sawhney *et al.*, 2005, Füller *et al.*, 2009). SSTs are a result of all these transformations, and currently offers many opportunities for customers to generate either the complete or part of a service electronically (Bitner *et al.*, 1990, Meuter and Bitner, 1998, Verhoef *et al.*, 2009).

SSTs are defined as “technological interfaces which enable customers to produce a service independent of direct service employee intervention” (Meuter *et al.*, 2000, p.50) or “technologies provided by an organization, specifically to enable customers to engage in self-service behaviours” (Verhoef *et al.*, 2009, p.03).

With the use of SSTs, service providers are benefitted with cost savings (Ding *et al.*, 2007), increased efficiency, customer satisfaction, standardization of service (Meuter and Bitner, 1998), productivity (Dabholkar, 1996), and avoidance of more clerical work (Castro *et al.*, 2010). Benefits to customers are; time saving, cost saving (Hsieh, 2005), greater control, customization (Meuter and Bitner, 1998), convenience (Dabholkar, 1996), ease of use (Meuter *et al.*, 2000), spontaneous delight (Bitner *et al.*, 2000), constant service

environment (Curran *et al.*, 2003), feelings of accomplishment, and enhanced self-efficacy (Meuter *et al.*, 2005).

Although SST's seem beneficial in many ways, Meuter and Bitner (1998) found potential disadvantages for firms. Fournier *et al.* (1998) recognized negative feelings by customers towards new technologies. Further, possibilities for service failures (Holloway and Beatty, 2003; Reider and Voss, 2010), customer frustration of working with SSTs (Parasuraman, 2000; Kristensson *et al.*, 2008) and potential threat in building loyalty (Selnes and Hansen, 2001). Among the prevalence of such pros and cons, it is worthwhile to study why people intend to use (or not) self-service technologies. Therefore, it is paramount to explore the factors affecting customer intentions to use SSTs.

Interactive Kiosks

SSTs are categorized under four groups as “telephone/interactive voice responses, online/internet, interactive kiosks and video/CDs” (Bitner *et al.*, 1990; Meuter *et al.*, 2000) focus on providing three main objectives such as customer service, direct transactions and providing customer education /training (Meuter *et al.*, 2000). Online banking, automated teller machines (ATM), self-check-in/check outs, automated airline ticketing, self-service fuel pumps, self-scanning at supermarkets, blood pressure monitors, distance learning can be taken as some of the noticeable examples for SSTs (Meuter *et al.*, 2000).

Interface design becomes very important in Kiosks since it helps customers to demarcate the functional features of a Kiosk which determines the efficiency and effectiveness from their perspective. The user-friendly kiosk designs can appeal to even senior customers or those who have no or a very basic experience with computers (Anitsal and Paige, 2006; Beatson *et al.*, 2007; Rowley, 1995). Although kiosks are designed to off-services created by consumers, employee assistance is still an integral part which demands employee training. It helps to achieve customers' satisfaction and prevents service failures caused by difficulties with the system (Porter, 2001). Accurate and timely delivery can be a competitive advantage to a company that provides Kiosks (Dabholkar *et al.*, 2003). Kincaid and Baloglu (2005) point out that adopting self-service technologies such as kiosks, as an essential factor for retailers in the current marketplace. Rowley and Slack (2007) note that among different SSTs, the most typical SST is interactive kiosks which refer to

computer workstations for public access. Kiosks have widely been used for banking (ATM) and airline check-ins. Apart from that, many services such as hotels, retail channels, airlines, entertainment service providers, hospitals are now adopting to provide some of their services through interactive kiosks.

Understanding customer choice of SSTs

Though business organizations derive short-term value through the provision of self-service technologies, forcing customers to use SSTs will create failures in the long run (Ple and Cáceres, 2010). Having an in-depth understanding on the customer choice of SSTs will help the organization to overcome such failures. However, an array of scholarly work is available in understanding acceptance/trial/adoption of SSTs. As we recognised, most of them have used general technological acceptance models such as the Technology Acceptance Model (TAM) or Unified Theory of Technology Acceptance and Use (UTAUT), to understand the SST context even though they do not properly explain it (Blut *et al.*, 2016).

Technology Acceptance Model (TAM) was first presented by Davis in 1985, combining the essence of the Theory of Reasoned Action and Theory of Planned Behaviour. However, it continuously upgraded as TAM 2 (Venkatesh and Davis, 2000) and TAM 3 (Venkatesh and Bala, 2008) by providing matching dimensions to the context of e-commerce. TAM is mainly an information systems theory which suggests the factors influence on accepting new technologies (Venkatesh and Bala, 2008, p.277). However, Oh *et al.* (2016) point out that TAM is not adequate to understand SST adoption. Similarly, Lee (2016) notes that TAM produces inconsistent results in different cultural settings and therefore challenged its applicability in different cultural contexts. Previous researchers such as Weijters *et al.*, (2007), Lee (2016), Pikkarainen *et al.*, (2004) used extensions to TAM in measuring SST acceptance. Blut *et al.* (2016) also recognize TAM as not appropriate in understanding SST acceptance while Oh *et al.* (2016) recommends adding ‘non-technology’ variables to TAM, to understand SST acceptance.

Unified Theory of Acceptance and Use of Technology (UTAUT) model was proposed by Venkatesh *et al.*, (2003) with four core variables: “performance expectancy, effort expectancy, social influence, and facilitating conditions” to understand intention and actual use of technologies. Blut *et al.*,

(2016) proved that general technological acceptance models; mainly TAM and UTAUT as not adequately explaining the SST context. However, most of the previous studies have used these models in understanding SSTs even though they have not been able to precisely explain the context of self-service technologies.

Apart from these established technological acceptance models, some scholars introduced several individual measurements to understand trial/ acceptance/ intention/ use of self-service technologies. Meuter *et al.*, (2005, p.63) found the importance of ‘innovative characteristics of SSTs’ and ‘individual difference’ on SST trials. Both ‘consumer contexts’ (their skills, experience, social and psychological factors) and ‘organizational contexts’ (features of the interface, speed, control, reliability) are recognised as important in a customer’s choice of SSTs (Hilton *et al.*, 2013). Liljander *et al.*, (2006) explore ‘technological readiness’ (TR) in SST acceptance and find different levels of technological readiness between the users and non-users of SSTs. Hsieh (2005) finds an influence of technological readiness on behavioural intentions and customer satisfaction in the self-service technologies while Lin and Hsieh (2007) find an influence of TR on both satisfaction and behavioural intentions in SSTs. A negative effect of user’s ‘technology anxiety’ on their use and evaluations of self-service technologies was identified in literature (Meuter *et al.*, 2003). Wang *et al.*, (2016) found that individuals’ anxiety and lack of trust towards technology cause an unwillingness to use SSTs and dissatisfaction.

Lee (2017) shows an inverse relationship between an intention to use SSTs and customer willingness for interacting with service employees. On a similar note, Dabholkar (1996) also has mentioned the same saying that service employees create a negative disposition towards SSTs. Elaborating the same, Anton (2000) also pointed out that customers who usually look for human interactions in service interfaces are not properly interactive with SSTs. Significance of ‘situational influences’ on the customer choice of SSTs was explained by Wang *et al.*, (2012). Further, they pointed out that situational factors such as “waiting time, complexity of the tasks and the influence of companions” as more persuasive. The importance of situational factors such as “time pressure, basket size, coupons and queue length” was pointed out by Demoulin and Djelassi (2016) showing how they influence on customer choice between SSTs and traditional service interfaces. Apart from those ‘habit and

experience' of using similar technologies also were recognized as crucial in adopting SSTs (Demoulin and Djelassi, 2016). On a similar note, Wang et al. (2017) identify 'prior habit' as one of the important determinants of using SSTs while Castro *et al.*, (2010) argue that prior experience in using SSTs is critical when the technology is new.

Lee and Allaway (2002) show the effects of 'personal control' on adapting to SSTs while 'perceived empowerment' and 'enjoyment' were recognized as prominent in determining customers' readiness for online value co-creation (Füller *et al.*, 2009). 'Attitude towards SSTs' is recognised as vital in SST adoption (Curran and Meuter, 2005, Dabholkar and Bagozzi, 2002). The SST Attitude-Intention Model (Curran *et al.*, 2003), also clearly explains the impact of customer attitudes towards SSTs on their intention to choose. 'Personal values' and 'consumer traits' were recognized by Lee and Lyu (2016) as vital in shaping customer attitudes and an intention to use SSTs. Wu *et al.*, (2017) elaborates the e-servicescape dimensions as significant in changing customer attitudes and trust toward websites. 'Service quality in SST' is also viewed as imperative in SST acceptance (Bauer *et al.*, 2005; Shamdasani *et al.*, 2008; Lin and Hsieh, 2011; Considine and Cormican, 2016). Age was recognized as a determinant of SST use such that the older generation has less confidence in performing via SSTs (Dean, 2008). However, Dabholkar *et al.*, (2003) and Weijters *et al.*, (2007) found a non-significant impact of age on SST use. Blut *et al.*, (2016) also proposed that consumer demographics such as age and gender as not effective in predicting SST acceptance. However, Elliott and Hall (2005) found a significant effect of gender on the intention to use SSTs.

Simplicity, convenience, availability, efficiency of SSTs would encourage the use of SSTs while fear and the lack of benefits discourages the same (Marr and Prendergast, 1993). Perceived usefulness (Eriksson and Nilsson, 2007), willingness and ability (Hilton *et al.*, 2012), individuals' capacity, perceived risk, relative advantage, desire for personal contacts and personal back up (Walker and Johnson, 2006), innovation characteristics (Lee *et al.*, 2003), cost, time-saving (Ding *et al.*, 2007) have also been recognized as important. Additionally, well-designed interface, accessibility, support of employees, store promotion and fast delivery were recognised as important in retail kiosks (Cho and Fiorito, 2010) while Picot-Coupey *et al.*, (2016) found the importance of synchronising clicks with bricks. Claiming the unsuitability of using general technological acceptance models to understand SST context,

Blut *et al.*, (2016) developed a model to elaborate SST acceptance, using a meta-analysis of general technology acceptance models. This model consists of subjective norm, experience, need for interaction, self-efficacy, external control, anxiety and computer playfulness which affect the customer's ease of use and usefulness, attitude towards using, usage intention and finally, use behaviour. Although many of the findings in this study aligns with those of Blut *et al.*, (2016), additionally this study found some important elements which were not discovered by them as their study was a result of a meta-analysis of typical technology acceptance models. This study argues the importance of situational factors, technology know-how, information richness and convenience, particularly as important in determining customer intention to accept SSTs.

Methodology

In exploring the research aims, semi-structured interviews with twenty-five SST customers who belong to different demographics such as age, gender, education, occupation within the Humberside area in the United Kingdom, were selected. Face-to-face interviews ranging between 30 to 45 minutes were conducted until information redundancy was achieved (Lincoln and Guba, 1985). A list of self-service technology kiosks was provided to respondents at the beginning to make them clear about the various types of SSTs they use. The discussions were carried out in such a way to encourage respondents to talk freely about why they select (or not) self-service technologies for their service transactions. The conventional content analysis procedure with an iterative process of reading, re-reading, assessing (Patton, 1990) was used in analysing data. A thematic analysis method was used to recognize 'themes' and then categorised them into groups considering patterns (Clarke and Braun, 2013).

Findings and Discussions

The study identified 43 important factors which influence the customer's intention to choose SSTs and then were classified into nine groups of factors. Finally, these nine groups were also reclassified into three themes as factors related to SSTs, factors related to individuals, and societal factors. Table 01 provides a summary of key factors that influence the customer choice of self-service technologies in their service transactions.

Table 1- Factors affecting customer intention of accepting SST kiosks.

Variable	Factors	Quotes from customer responses
Performance	Usefulness	<i>"it's really useful...I can do things in a straightforward way... it's obvious"</i>
	Speed	<i>"Very quick...no need to hang on to things...its fast"</i>
	Efficiency	<i>"it's fine with our busy lives, I could do many things since everything is at our fingertips"</i>
	Consistency	<i>"It's the same for whoever, whenever, wherever do it ...no bias or favours"</i>
	Cost-effectiveness	<i>"it is cheap...why pay extra money if we can do it?"</i>
	User friendliness	<i>"Many of them are simple...easy to handle and in a clear language"</i>
	Reliability	<i>"It's reliable ...no human errors, / I am not sure until I receive it to my hand"</i>
	Trialability	<i>"We can go up to the last moment, if we don't want, we can cancel it ..that's all"</i>
	Compatibility	<i>"It really fits well with what I want to do"</i>
Convenience	Locational convenience	<i>"I can do many things while staying at home, living room...or even on the bed. Many things are available at your fingertips."</i>
	Physical exertion	<i>"because sometimes you are not travelling, no long queues... actually less effort. It's easy"</i>
	Time convenience	<i>"you can use your time ... usually after office hours... its 24 hours"</i>
	Ease of use	<i>"it is not a difficult task...very simple actions to follow/ some might confuse you."</i>
	Ease of learning	<i>"once you do it, you do it every day...it's really simple...all instructions are given.../ though with our age (older), not easy to learn new things"</i>
Information Richness	Sufficiency	<i>"Enough information should be there otherwise how can we make the right decisions?"</i>
	Relevance	<i>"All related info should be there ...not nonsense"</i>
	Timeliness	<i>"I found some information are available in online... but not in the store...haven't updated their sites /some websites are not up to date"</i>
	Accuracy	<i>"What they mention should be correct...because we believe it without checking with others "</i>
	Clarity	<i>"It should be clear to understand for everyone / some instructions mislead you"</i>
	Simplicity	<i>"All instructions should be very simple / I don't know. Some instructions are difficult for me to understand"</i>

Technology knowhow	Knowledge on SST devices	<i>"Should have little understanding on how to operate different kinds of machines...its easy/ we haven't born with technologies like you (older generation)"</i>
	Computer knowledge	<i>"All on computer screens... if we have basic knowledge in computer, its fine / sorry ...I am not good at computer work"</i>
	Knowledge on internet	<i>"Everything is online now...this generation (young) is confident with the internet"</i>
Emotional reactions towards SSTs	Love	<i>"I love to work with technologies...its clever"</i>
	Enjoyment	<i>"You can enjoy it with your smartphones"</i>
	Fear	<i>"I don't know... I am afraid to do it... feeling like unsure of what to do"</i>
	Guilt	<i>"See ... how many of here waiting for jobs...I feel guilty with it"</i>
	Isolation	<i>"I don't want to be isolated with SSTs"</i>
Personal Judgments	Trust	<i>"I trust it...no bias...no errors.../ I am not sure until I receive my tickets (SST orders)"</i>
	Risk	<i>"I have heard about some frauds in banking...it's a risk ...I do not like to use it"</i>
	Privacy	<i>"I hope this personal stuff is confidential in there"</i>
	Independence	<i>"Yes. really I am free from most of the hard work because of this (SSTs)"</i>
	Self-control	<i>"Now I have control... it's my own work...my own decisions"</i>
	Self-confidence	<i>"Yes, I am confident to do/ No, sometimes I am not confident...specially if it is new to me"</i>
	External control	<i>"Things like technology...its failures are beyond me...so I have a hesitation"</i>
Past experience	Past experience	<i>"If once you handle then you know what to do/ might be difficult the first time"</i>
Social Influence	Personal sources	<i>"sometimes my friends ask why you don't use this ...it is so easy"</i>
	Organizational staff	<i>"they ask me to do online checking...I saw that the last moment"</i>
	Influence of society	<i>"I know... society is changing...we also have to accept it and change"</i>
Situational factors	Crowding	<i>"I use automated checkout only if the till is busy with lengthy questions"</i>
	Urgency	<i>"Yes ..if you are in a hurry ...better to go with self-service options"</i>
	Task complexity	<i>"It's good to do simple tasks... if not better to help from staff members"</i>
Customer demographics	Age	<i>"I guess all of you (young) clever with technologies/ People in my age (old) are not good with technologies"</i>

Performance: The study recognized nine types of SST performances, which provide functional benefits to the customers. Usefulness, speed, consistency, cost effectiveness, user friendliness, trialability, efficiency, reliability and compatibility of self-service technologies are among them.

Since Table 01 provides an overall picture, here a few quotations from interviews are provided in support of the findings. Respondents admired the ‘consistency’ of SSTs in similar contexts as important in their intention to use SSTs, mainly because they could use their existing knowledge and skills in performing transactions, even in slightly different contexts such as automated checkouts at different shops.

“You do not need lots of help. Everything is obvious and straightforward. It provides the same service every day. If you have done it once, for the next time also you may have to do the same...all machines are similar, the process may not be changing (consistent). It’s easy for me”. (45 years, Female)

Many of the respondents praised SSTs for their ‘speed/quickness’ of service performance. Therefore, they recognised SSTs as an efficient medium that help them to save time.

*“Just that it is **quick** and easy. Basically, it speeds up your life”. (38 years, Male)*

*“Another kind of thing, like fuel pumping, internet banking, I think it’s good because it’s **efficient**, it saves your time and effort. Also, you don’t have to wait for someone. If I go to the petrol station and it’s closed, you can still somehow pay with your card. Moreover, at a supermarket, you don’t have to wait for someone, so I think that’s good in that sense”. (50 years, Male)*

*“It’s **useful**; See, it is really efficient. I am using internet banking, self-checking checkouts, ATM, self-scanning at supermarkets, online shopping and so on... Yes, I mean definitely useful and makes things a lot quicker than others. But one or two seem to be a hindrance, like self-scanning at retail shops. I had issues while scanning something. All of a sudden it says, ‘unexpected items and so assistance required’, and then someone comes over to help. That happens nearly every time when I use one of those”. (38 years, Male)*

The study further reveals the ‘user-friendliness’ of the SSTs as very important.

“I am not saying that it’s too difficult...many of the self-service options are user-friendly. Nothing we have to do than simply ticking a few numbers and words. All questions are in simple language and in an understandable way...(user-friendly) I have seen some provide a few options for language selection too”. (45years, female)

the ‘reliability’ of service due to not having human errors and the opportunities given for trials are as important in customer acceptance.

*“These machines are truly reliable. Because, I hope that it is **free from human errors**. Think of the money you get from ATMs. Have you ever heard of errors with counting?” (38 years, male)*

“I am never quite 100% certain that I’ve done everything right until the rail ticket arrives or whatever has got confirmation. It’s certain when I actually get the ticket physically in my hand or can see the proof”. (62 years, female)

Some of the respondents pointed out the cost efficiencies related with SSTs as an influencing factor to collaborate with SSTs.

“What I feel is, if I go shopping for everything, it’s a big cost for me...see fuel, parking and my time. I can save my money doing my shopping online. It’s clever”. (25 years, female)

In the available literature, ‘performance expectancy’ was recognised as the strongest predictor of technology acceptance in the UTAUT model, which is explained by five elements: perceived usefulness, extrinsic motivation, job-fit, relative advantage and outcome expectation. Although that model was developed for organisational contexts, they also found that the effect of performance is more stronger for younger workers (Venkatesh *et al.*, 2003). Further, performance has been identified as an important predictor of attitude towards technology based self-service usage (Dabholkar and Bagozzi, 2002). When comparing each individual element in the ‘performance’ factor, ‘perceived usefulness’ has been discussed as one of the main construct (mediators) in TAM which is influenced by many external variables (Venkatesh and Bala, 2008). Li *et al.*, (2018) identify functionality of technology and task routine as important value co-creation determinants in the electronic service.

Further, in line with this study findings, usefulness (Curran and Meuter, 2005; Eriksson and Nilsson, 2007; Weijters *et al.*, 2007), and increased efficiency (Meuter and Bitner, 1998), increased speed of service delivery (Berry, 1999) were recognised as important in both SSTs and general technology acceptance. Moreover, Froehle and Roth (2004) also point out the importance of efficiency, cost-effectiveness and the quality of operations in advanced information and communication technologies. Partially, supporting the qualitative study findings, ‘price advantage’ (Dabholkar, 1996), reliability (Weijters *et al.*, 2007), utilities (Curran and Meuter, 2007), and low risk (Beatson *et al.*, 2006) were interchangeably identified as benefits and determinants of technology acceptance, including SSTs. Further, Hilton *et al.*, (2013) also found the importance of organisational contexts including features of the interface, speed, control, reliability’ in customer choice of SSTs.

Similar to the ‘usefulness’ in this study, the ‘perceived benefits’, have been recognised as having significant effects on ATM adoption (Lee *et al.*, 2003). Weijters *et al.*, (2007) also found ‘usefulness’ and ‘reliability’ have significant effects on SST use. Further, supporting the outcomes of this study, Lee *et al.* (2003) found the importance of ‘reliability’ and ‘security’ in adoption to ATMs. Corresponding with the ‘speed’ and ‘efficiency’ elements in this study, Meuter and Bitner (1998), Beatson *et al.*, (2006) similarly viewed the importance of ‘time-saving’, ‘cost-saving’ and ‘reduced waiting time’ as benefits/reasons to use SSTs. In line with the qualitative study findings, Castro *et al.*, (2010) recognised the importance of ‘user-friendliness’ in encouraging self-service behaviours. Wu *et al.*, (2017) found ‘usability’ as one of the e-servicescape dimensions having significant impact on consumer attitudes and trust toward websites.

Providing more supportive evidence to the findings of this study, Marr and Prendergast (1993) recognised ‘efficiency’ as important in encouraging customers to use self-service technologies in banking. However, Dabholkar (1996) found that ‘speed of service delivery’ and ‘reliability’ as insignificant in determining SST service quality. Lin and Hsieh (2011) developed the SSTQUAL scale to assess self-service technology encounters consisted of seven-dimensions including some performance characteristics such as functionality, security, assurance, design, and customisation. Consistent with the findings of this study, Liljander *et al.*, (2006) recognised that customers typically use self-service technologies due to the efficiency in SSTs by time saving, avoiding queues, quickness etc. Meuter *et al.*, (2005) recognised

‘innovative characteristics’ such as relative advantage, observability, trialability etc as influential in consumer trials of SSTs. In line with the findings of this study, ‘utility’, comprising cost, fast and convenience has been recognised as important in encouraging switching of existing users to self-service technologies (Curran and Meuter, 2007). Ding *et al.*, (2007) notes that service providers are also benefited by ‘cost savings’ mainly because customers perform service-related activities, that would otherwise have been performed by the firm’s employees.

Convenience: Convenience is recognized as the degree of ease associated with the use of SSTs. We recognized five main convenience factors; locational convenience, less physical exertions, time convenience, ease of use and ease of learning.

As the study found, people choose SSTs simply because it provides 24 hours’ operation including after office hours/holidays etc, thereby providing more time convenience for them.

*“It makes my life easier. I do many things online, staying at home, in my bedroom (**location**). I think it increases the efficiency of purchasing things or sending the bank transactions. It assists your daily life, so you can do some things like you could be at the office but also be shopping for food, you could be possibly at work but then during your breaks send a money transaction to someone. I would say it creates more convenience”. (32 years, female)*

*“We are a busy family. I work full time with two children. I don’t have **time** just to go and spend a day in the town shopping leisurely. I personally prefer self-service than actually physically go in and out. It’s not to do with laziness. It’s just to do with convenience. And it’s not difficult”. (45 years, female)*

“Obviously, the easy to use. If someone is saying it’s hard, I ask them to do it once and realize what the difficult thing is in there. Just what you need is practice” (38 years, male).

*“You know, many self-service machines are **24 hours**, day and night, weekends, really easy...what happens if I have to get a day off and go for these all matters? I find it difficult in the office hours”. (48 years, male)*

Respondents also appreciated the locational convenience, such as opportunities given to perform many services at one's fingertips (e.g., many online services) or in their most convenient places (e.g., banking transactions at supermarkets, roadsides etc) with less physical efforts.

“With these online, telephone technologies, we don't want to go everywhere to get everything done. It makes me free from unnecessary travelling and tiredness (physical efforts). I think it's good. Just purely because like, for instance, if you want to go to the supermarket you want to get in and out of it very quickly but there is a massive queue at the till, you can just use the self-service option yourself”. (38 years, male)

“I have two business accounts in two banks. I used to walk to my bank. They closed the branch down in this road. So now I am not going to that bank. She (the manager) asked me to do online. I said no I am not. Now I am using my other bank account. It's convenient to me”. (67 years, female)

Wei *et al.*, (2017) found the importance of convenience as an extrinsic attribute that enhances customer satisfaction in SSTs. Convenience including locational benefits (Meuter and Bitner, 1998, Beatson *et al.*, 2006) has been found as important in SSTs. Lin and Hsieh (2011) found the convenience of 'operating hours' and 'reaching SSTs' as important elements in assessing self-service technology encounters. Marr and Prendergast (1993), also recognised time and place convenience as critical in encouraging the customer to use self-service technologies in banking.

'Perceived ease of use' was discussed as a main antecedent in TAM model (Davis, 1989; Venkatesh and Davis, 2000; Venkatesh and Bala, 2008). 'Ease of learn' also recognized as a variable in 'effort expectancy' at UTAUT model (Venkatesh *et al.*, 2003). Time convenience associated with SSTs due to 24 hours' operation, including after office hours and holidays was pointed out by many respondents as significant. The 'locational convenience' of SSTs in performing many services at fingertips and less 'physical efforts' due to reducing travelling also were pointed out by the respondents as powerful features of SSTs. Convenience (Beatson *et al.*, 2006), specially time and place convenience (Marr and Prendergast, 1993) viewed in consumer adoption of SSTs.

Richness of information/instructions: The quality of the given information/instructions was acknowledged with this. The study identified that the information/instructions provided by the SSTs as a very important indicator in the decision of selecting SSTs. The sufficiency, relevance, timeliness, accuracy, clarity, consistency and simplicity of information/instructions were recognized among them. Majority of the respondents disclosed that they are happy with the information and instructions received, while some respondents pointed out the situations where transactions have gone wrong due to the confused instructions.

*“When you look at it, you can very obviously see how to access different things, whether it’s a screen or whether a little display or whether it’s a keyboard. Many of the **instructions** are simple, and kind of minimal steps, not too complicated as you could easily become confused with too many buttons. Obviously, self-service has fewer buttons. If you go to book a hotel it’s a very clear, kind of onscreen information on where you pay, where you review something, where you look for something, where you reserve... It’s going to be on something obvious”. (22 year female)*

*“I guess it provides sufficient **information** to get correct decisions. This is because sometimes there might be no one to ask...but I know self-service technologies do not give nonsense. It is important that we are taken on the right path”. (40 years, female)*

The incorrect or outdated information in websites, not providing clear guidelines up to the endpoint, complex instructions were among the criticisms.

“I experienced some instructions that are not clear. It makes you confused, and some are inviting mistakes”. (62 years, female)

*“It’s good to make sure whether the information in the websites are correct (**accuracy**). Because I know that sometimes these things are shown online ...but not physically available in the stores...they haven’t updated their websites in a couple of weeks. Old, wrong information in the websites”. (48 years, male)*

*“It should be **reliable**, correct dates, time, price, everything should be exact. You’ve got to get the right dates when you buy things. Or if it’s a company far away you have to make sure you’re getting what you want.*

It should be very definite, otherwise you confuse where you are parking, going, doing, buying etc". (38 years, male)

*"You know so you're not faffing around trying to figure out how to use it, before actually using it...it should be **relevant**. You should get there, it should all be working. You shouldn't go halfway through your use of it.... realising it is not working properly. Coz you're just wasting your time... you do not need to. It should be easy. If anything goes wrong someone should be there to help. I think that's all I need". (32 years, female)*

Similar to this study, Froehle and Roth (2004) recognised 'information richness' as an influencing factor on customer beliefs related to technology mediated services. Marr and Prendergast (1993) also supported the findings of this study, recognising the simplicity of instructions as one of the important factor that encourage customer use of SSTs in banking. Froehle and Roth (2004) recognized 'information richness' as a factor which influences customer beliefs about technology mediated services.

Technology knowhow: General technical knowledge which is required to work with SSTs were considered under this. The participants disclosed that fair understanding about technological interfaces, knowledge on internet and knowledge on computer as crucial in determining the use of SSTs.

The following quotations provide evidence for the importance of technology-knowhow in customer value co-creation intention in SSTs.

*"You know that today everything is **technology**, everything is connected to the internet. I think people just really enjoy internet technology. Like smartphones, iPads...it is enriching our daily lives. Like switching on your phone and doing that, it's quite clever". (22 years, female)*

*"You have to use the same kind of **machine** in every setting. Many of them are similar. It is easy to learn how to use the machine... especially if you handle it once before, nothing again to do". (22 years, female)*

"It's just working with machines. One thing that you must know is how to talk to that machine and tell what you want it to do. If you don't know how to tell it, you fail to get your work done from the machine". (48 years, male)

Further, it has become obvious that the younger generation are clever with the use of technologies and consider SSTs as a social trend which needs to be followed. As opposed to that, the older generation showed a fear and suspicion of using self-service technologies.

“There is a certain area where I think it’s difficult for much older people to do on the computer. Because they are the older generations and haven’t been brought up to use computers”. (67 years, female)

Similar to this study’s findings, Hilton *et al.*, (2013) found the importance of ‘consumer knowledge and skills’ on the choice of SSTs, and therefore they point out the necessity of considering this matter in the stage of designing technologies. Pointing out the importance of customers ‘abilities’ on SST trials, Meuter *et al.*, (2005, p.63) note ‘individual difference’ as one of the main constructs as mediating the effect of consumer readiness. Further, the findings of this study aligns with Liljander *et al.*, (2006), Meuter *et al.*, (2003) who have recognised the importance of the user’s state of mind and their ‘ability and willingness’ in consumer evaluations of self-service technologies. Supporting our view regarding the conceptual similarities of ‘ease of use’ and ‘ease of learning’ with ‘technology-know-how’, Dabholkar (1996, pg 03) identifies ‘ease of use’ in SSTs as the “ease of using the touchscreen in terms of how easy or effortless it would be to use this option”. Perceived ease of use is viewed as important in both, the acceptance of technology in general (Venkatesh and Bala, 2008) and SSTs in specific (Meuter *et al.*, 2000; Weijters *et al.*, 2007). The research findings are also consistent with previous findings that, ‘perceived ease of use’ including the ‘ease of learning’ as having a positive effect on attitudes towards an information system, individuals' intentions to use it and the acceptance of the information system (Davis, 1989). Venkatesh *et al.*, (2003) view ‘ease of learn’ and ‘perceived ease of use’ under ‘effort expectancy’ in the UTAUT model. Since they examine the ‘expectations’, the effect was found to be stronger for women particularly older workers. In self-service technology context, Curran and Meuter (2005) found ‘ease of use’ including the ease of learning as important in SST adoption.

Personal Judgements: An individual’s subjective evaluation of the consequences of SSTs and their own individualities were considered here. Trust, risk, privacy, independence, self-confidence, self-control, external control and personal judgement on resource availability were identified under

this. A substantial gap was recognized in personal judgements between the generations of young and old.

*“I believe (**trust**) these machines. Because I know it exactly does what I ask it to do. If there is a problem, it might be with my instructions. I am the boss who asks the machine to do it. It is free from man-made errors”.* (22 years, female)

*“You know bank details are confidential (**privacy**). I know many frauds happen if you give all your details to websites. I am not confident about the privacy in there”.* (58 years, male)

*“Honestly, I think my bank account is safer than others since I am not doing online banking. That was it. I know how some people cheat with bankcards (**risks**). I do not want to get that risk”.* (67 years, female)

Further, a substantial difference was recognised between older and younger participants, with regard to their personal evaluation of the sense of independence, self-confidence and self-control when performing SST transactions.

*“I feel that I am much more independent with these technologies. Why should I depend on others if I can get things done by myself? (**sense of independence**) I am really happy with it”.* (25 years, female)

*“When you are actually buying something, and the final decision is made, I think it is nice if you are able to speak to someone to make sure that you have fully understood and have made the right purchase and decision (**self-confidence**). It does not matter if you make an error at the supermarket when you buy some food. But it does matter very much like for health insurance or buying large critical items like a washing machine or fridge freezer. And for something like simple tasks. It's excellent. I can't see any problems there”.* (62 years, female)

*“If I am purchasing something, or I am using the money in my bank account, I have the **control**. I know what is good to do or not. I know the risk and so not use insecure sites”.* (36 years, male)

Personal views about resource availability, the voluntary attribute of the service, and external control were also recognised as different from one individual to another.

*“My view is this is development. Sometimes some things might be sacrificed. As a country, technological development is necessary. In my evaluations now, we have enough resources (**resource availability**) to do self-transactions”. (45 years, male)*

*“If you get to the supermarket and you are halfway through shopping, any breaks...**beyond your control**, you have to start again. Just maybe like technical errors... Screen breaks, internet going down, signals not working” (22 years, female).*

*“I think we still have a choice, (**voluntary**) whether we go to counters or machines, sometimes there’s nothing one can do other than using machines. All tills are closed”. (50 years, male)*

*“Sometimes they’re **optional**, but sometimes they are mandatory. At Tesco, if it is open late, sometimes no one’s serving at the till. So, then you’re forced to use automated ones. When I’m buying alcohol or something, I go to the normal checkouts, not the self-checkouts. Just because you’d have to ask them to...see that you’ve got alcohol. Yeah. If there’s something in my normal shopping which might cause, I just go to the normal checkouts. If you go to the petrol station and it’s closed, which only has a pump then you must pay with a card. If it’s something after hours, you must use self-service options”. (38 years, male)*

Previous research indicates mixed evidence on the salience of personal judgement. Curran and Meuter (2005) point out the differences among individuals, some as being ‘unsure and uncomfortable’ with technology while others may enjoy it as a new social and personal experience. Further, Curran and Meuter (2005) found a risk as insignificant in ATM adoption while Blut *et al.*, (2016) also found the same as the intention to use SSTs was not influenced by ‘risk’. Venkatesh *et al.*, (2003) found insignificant effects of ‘computer self-efficacy’ on technology acceptance.

In line with qualitative study findings, the literature explains the influence of consumer evaluation of risk (Beatson *et al.*, 2006), personal control

(Lee and Allaway, 2002), and perceived risk (Walker and Johnson, 2006) on consumer attitudes towards SSTs. The differences among individuals are supported by Nijssen et al. (2016) who found that low-benefited individuals (who are low in self-efficacy, education, etc.), as revealing a damaging relationship with the firm. Exploring how the risk factor is associated with SSTs, Featherman and Hajli (2016) found six types of risks particularly in e-services: performance risk, financial risk, privacy risk, time risk, psychological risk, and social risk. Comparing some of these elements between users and non-users of SSTs, Liljander *et al.*, (2006) found four factors, including discomfort and insecurity, as leading to different levels of technological readiness between users and non-users in SST acceptance. Lin and Hsieh (2007) recognise ‘technological readiness’ as important in SST acceptance. Elaborating more on the ‘trust’ factor, Wang *et al.*, (2016) found that lacking trust towards technology caused an unwillingness to use SSTs. Influences of personal control on the adoption of self-service technologies were found by Lee and Allaway (2002) considering predictability, controllability and outcome desirability as dimensions of personal control. In a similar context, Lee and Lyu (2016) found ‘personal values’ and ‘consumer traits’ as important in determining the intention of using self-service technology in retailing via building attitudes.

Emotional reactions towards SSTs: Individuals’ emotional responses towards the use of self-service technologies were considered here. Love, enjoyment, fear, guilt and feelings of isolation with SSTs were captured as significant, when compared with how this was perceived by younger and older generations. Youth seemed to come out as more favourable towards the aspect of working with SSTs and enjoyed interactions with different types of technology. Yet, most people who were older were identified to feel as having less confident and therefore, afraid to use SSTs. Further, people expressed a guilty feeling with SSTs since it caused a reduction in job opportunities and fared less when it came to interpersonal relationships.

The study reveals that younger people especially love and enjoy self-service technologies.

*“I think people really just **love** technology. I think that technology enriches our daily lives”. (22 years , female)*

*“Instead of going to the bank, we would get much more **enjoyment** by switching to the phone and doing that, say online shopping or playing game, watching movies via CDs and DVDs. It’s quite clever.” (28 years, male)*

However, it has been noted that some people had negative emotional reactions towards self-service technologies, mainly due to the fear of using technology or a feeling of guilt towards SSTs and feelings of isolation due to performing remote transactions via SSTs.

*“You know we haven’t been born with technology around us, like you. We are actually **afraid** to use technology. I feel better going out to do my shopping.” (67 years, female)*

*“And people are now less friendly...do not talk much with other people. Let’s say coffee for instance. When I am drinking coffee, I would like to not only drink, but stay and talk with people. Instead of going to a machine, putting the money in and pressing a button. There, you are the coffee... that is empty. Do you know what I mean? It just makes us feel **isolated**. However, I don’t really like it. Because it makes us more impersonal, adopts more cold relationships.” (55 years, male)*

“I do realise that for much older generations, they like face-to-face transactions. For some older people, perhaps it’s the only time they speak to someone in a day. And I think we’ve got to realise that it can be a very isolating thing by doing these chores online”. (62 years, female)

*“Probably I would start to feel a little bit **guilty**. Well, I worry about it putting a lot of people out of jobs. If you are using self-service checkouts at supermarkets....it means fewer people on tills. It is so mechanized now”. (28 years, male)*

However, in line with the qualitative findings of this study, enjoyment (Pikkarainen *et al.*, 2004; Curran and Meuter, 2007; Füller *et al.*, 2009), fun (Dabholkar and Bagozzi, 2002) and perceived fun (Weijters *et al.*, 2007) were recognized as encouraging factors, while technology-related anxiety (Liljander *et al.*, 2006; Meuter *et al.*, 2003), fear (Marr and Prendergast, 1993) were identified as negative influences on SST use/adoption in the literature.

Comparable with ‘isolation’ in this study, Anton (2000) found that customers generally seek human interaction at the service encounter. Similarly, Dabholkar (1996), Lee (2017) claimed that ‘need for interaction’ affects disposition towards SSTs. Providing more supportive evidences, Meuter *et al.*, (2005) identify ‘need for interaction’ as having a destructive effect on consumer trials of SSTs, while Curran and Meuter (2005) found insignificant effects of a ‘need for interaction’ for the intention of using ATMs and online banking.

The ‘fear’ element in this study, can be seen as similar to ‘technological anxiety’ which Liljander *et al.*, (2006), Meuter *et al.*, (2003) and Wang *et al.*, (2016) found as a reason for unwillingness to use SSTs. In similar contexts, Venkatesh *et al.*, (2003) found an insignificant effect of ‘computer anxiety’ on technology acceptance. Marr and Prendergast (1993) view ‘fear’ as one of the elements that discourages the use of SSTs. Meuter *et al.*, (2005) identify factors such as ‘inertia and technology-related anxiety’ as individual differences that affects consumer trials of SSTs. ‘Enjoyment’ was identified a factor with a strong influence on customers’ willingness to engage in online value co-creation (Füller *et al.*, 2009). Similarly, Lin and Hsieh (2011) recognised enjoyment as one of the important elements in the SSTQUAL scale to assess self-service technology encounters. Perceived fun was recognised as having a significant effect on SST use (Weijters *et al.*, 2007).

Past experience: We found past experience as one of the most important factors which influences the intention of using self-service technologies and also causes to moderate some other associations. People who have adequate previous experience think that the use of SSTs as a quick and easy option while those who have not previously handled this, believe it to be a hassle for them to do the transaction with a free mind.

“I think probably at the first or second instance...you feel uncomfortable... because you see the screen is going mad and shouting. Once you become familiar with it, then you do not want to worry” (45 years, female).

“I will always go for self-service. Because I know what I should do there. It’s much quicker and easier. At the same time, if you do not know how the self-service checkout works, you can easily get very confused. However, once you know what to do, it’s easy” (22 years, female).

The previous studies on SSTs proved that previous experience (Castro *et al.*, 2010), individual difference (Meuter *et al.*, 2005), consumer context (Hilton *et al.*, 2013) including their previous experience as important in accepting SSTs.

Social Influence: The majority of the respondents acknowledged that the SSTs were a ‘social norm’ which the adaptation is acceptable. Further, we recognize that the influence of personal sources such as friends/peers are significant in this intention and this effect is recognized as being higher among the younger generation. The influence of service organizations/employees to use SSTs both as a supportive hand and also a forced behaviour, was pointed out by respondents.

“I know... society is changing...we also must accept it and change”. (25 years, female)

“First, I also was a bit afraid of using them. Once I went shopping with one of my friends, she showed me how to operate it...it was easy and now I do it always. Service staff were also direct and help to use self-service checkouts”. (22 years, female)

“You know, my wife always goes to the till to make payments. When shopping with me, I used to use self-checkouts. Then she realized there’s nothing in there, other than this being a very simple task. Now she too goes to self-checkouts”. (38 years, male)

Similarly, Venkatesh *et al.* (2003) found that social influences in the UTAUT model to be insignificant in determining technology acceptance when the data were analysed without any moderating effects, and became significant with all their four moderators (gender, age, experience, and voluntariness). Further, this study’s outcome supports, Venkatesh and Morris (2000, p.132) comment regarding “gender as a potential key to understanding the role of social influence on initial technology adoption decisions and sustained usage of new technologies”. Venkatesh *et al.*, (2000) also suggests that women are more sensitive to others' opinions, i.e social influences. Further, Curran and Meuter (2007) explain social acceptance as influential in the intention to change behaviour in SSTs.

Situational factors: A tendency to use SSTs was recognised when physical service encounters were crowded, the customer is in a hurry and when the task is simple to perform.

*“The fuel pumps, I would rather be going and paying. But if it is **crowded**, I will do it by myself with the machine...so you can choose which one, whether you do it in the machine or go to a till. It depends on, say how big the queue is and how much in a hurry I am”. (50 years, male)*

*“As I said, because if I am in a rush. I’m living in Scunthorpe, finishing work in Grimsby, maybe I need to continue work again or want to have some family time, so I just grab something, go to self-service which is faster and continue with my journey.” (**hurry**). (48 years, male)*

*“I like to do **simple** things in machines.” (58 years, male)*

“You know, I am staying alone. So sometimes I’m too lazy to go shopping. So now I usually do online shopping.” (38 years, male)

Providing similar evidences, Wang *et al.*, (2012) found the implications of situational factors including perceived waiting time, perceived complexity of the task and the influence of other companions on the customer choice of self-scanning at supermarket stores. Similarly, perceived waiting time (Dabholkar, 1996), waiting time and social anxiety (Dabholkar and Bagozzi, 2002), and perceived service complexity (Simon and Usunier, 2007) have also been viewed as influential situational factors in selecting SSTs. Oh *et al.*, (2016) found the importance of ‘situational factors’ including waiting and service complexity in SST adoption. Demoulin and Djelassi (2016) also found the influence of situational factors such as time pressure, basket size, coupons and queue length at the SSTs and staffed checkouts on actual customer usage of SSTs. Additionally, Dabholkar and Bagozzi (2002) noted the effect of ‘crowding’ on ‘social anxiety’ particularly, if other customers can see how they use some unfamiliar types of SSTs. Further, Oh *et al.*, (2016) criticised TAM for not representing important ‘non-technology’ variables, such as ‘situational factors’ when considering the adoption of SSTs.

Customer demographics: According to the findings of the qualitative study, demographic differences, especially age was found to be imperative in

determining the customer's intention of collaborating with SSTs in creating value. Particularly, younger people were recognised as clever in using technologies, considering SSTs as a social trend which needs to be followed. As opposed to that, more senior people showed a sense of fear and suspicion towards using self-service technologies. Though gender is recognised as less influential in terms of age. Young males were noticed as being more keener and more enthusiastic towards using self-service technologies.

*“There is a certain area where I think is difficult for much **older people** to do things online. Because they haven't been brought up to use computers ...however I do think it's the way forward”. (62 years, female)*

*“I think people like us (**young**) just really love technology. I think that technology increases our daily lives”. (22 years, female)*

“Instead of going to the bank, we would get much more enjoyment by switching to the phone and doing that, say online shopping or playing games, watching movies via CDs and DVDs. It's quite clever”. (28 years, male)

“I didn't use my bank, since they closed the branch. She (the bank manager) rang me. She said 'you haven't used our bank for a while'... I said 'No, because you closed the branch down'. She said, 'Well you could do online banking or things like that' ...I said, 'Well I don't use it because I feel I don't really need it'. Then she asked, 'What about your bank account'? I said 'I use cheques. That was it. That is the only thing. Maybe I'll use it for a few years... and God knows how long I am going to live....and last. That's it.' (67 years, female)

In line with some findings in this study, Dean (2008) proves that older generation have fewer experiences with SSTs and less confidence in performing SST transactions. Elliott and Hall (2005) note a different effect of gender. Where males are more innovative, females are feeling more uncomfortable and insecure in their propensity to embrace SSTs. Simon and Usunier (2007) recognise age as having a strong negative effect on preference towards SSTs over personal contacts. Blut *et al.*, (2016) finds that demographic variables (age and gender) as being ineffective predictors of SST acceptance and therefore

suggests using these as moderators/ control variables in future research. Lee *et al.*, (2003) found significant effects of age, education and income on ATM adoption. Shulga *et al.*, (2018) notes that millennials tend to co-create value with open-source technologies, when compared with other age generations.

However, Dabholkar and Bagozzi (2002) noted that demographic factors were not important in understanding a customer's use of SSTs because the current environment provides a vast range of opportunities for all to be familiar with simple technologies, disregarding that they are "women, older consumers, the less educated, and the less affluent." Cross-cultural variations in consumer demographics in adopting to self-service technologies were studied by Eriksson and Nilsson (2007), proving that demographic differences were not significant in developed markets. Further, Venkatesh *et al.*, (2003) found, significant moderating effects of gender and age on technology acceptance in the UTAUT model, while none of the significant differences of age on the use of SSTs was found by Dabholkar *et al.*, (2003) and Weijters *et al.*, (2007).

Re-classification of factors

The analysis led to further classifications of identified factors into similar groups. Accordingly, performance, convenience and information richness were recognised under factors related with SSTs which influences the customer intention of accepting self-service technologies. Experience, technology knowhow, emotional reactions towards technologies, personal judgements and customer demographics were identified as dynamics among individuals who are influenced in various ways, by the acceptance of SSTs. Social influences and situational factors were recognized as societal level influences. Figure 01 illustrates the basic conceptual model of antecedents of customer intention of accepting self-service technologies in their service transactions.

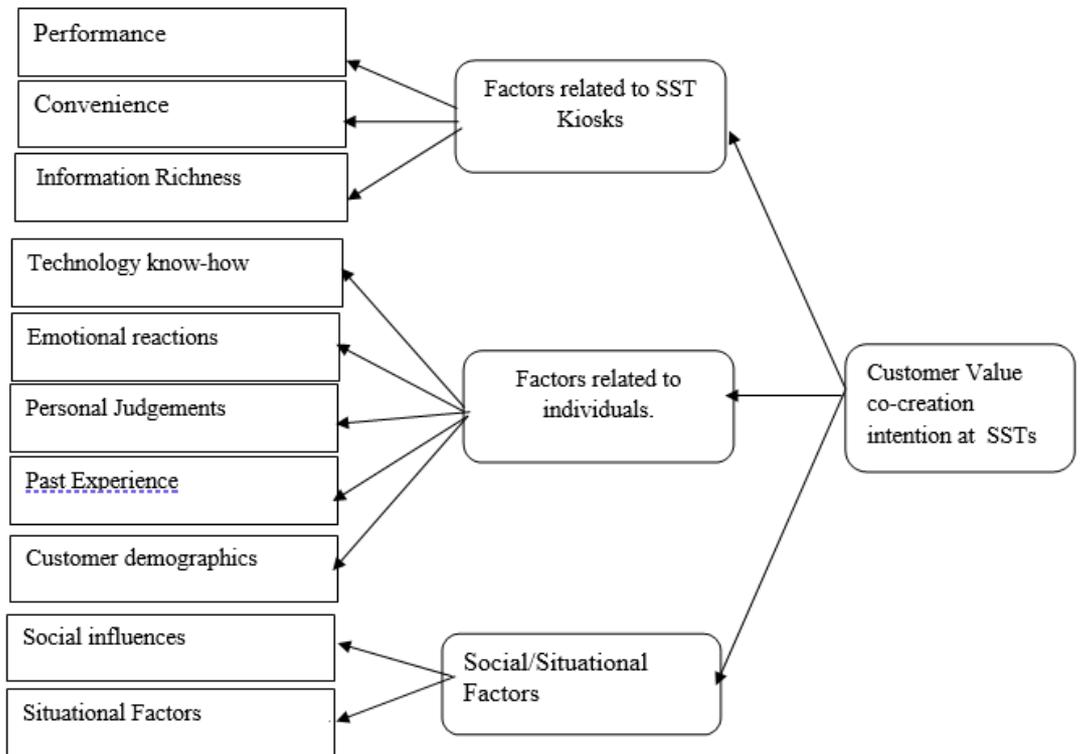


Figure 01: Conceptualization of customer intention of accepting SST kiosks.

Conclusion, Recommendations and Future Research Directions

With this qualitative study, we disclosed ten main influential factors under three domains which explains customer acceptance of SSTs. These domains precisely explain factors in their links with SSTs, with individuals and with society as a whole. This classification provides a comprehensive understanding of factors associated with customer intentions in accepting self-service technologies in their service transactions which was a limitation in previous research work. Business organizations would potentially be advantaged with these findings through incorporating their technology-based self-services with customer intentions.

Theoretical contributions:

This study discovers the customer intention to accept self-service technologies, recognising the influencing factors. Although a number of previous research work has focused on SST acceptance/trial/adoption using general technology acceptance models such as TAM, UTAUT etc, these models

were recognised as not particularly demonstrative of the SST context (Blut *et al.*, 2016). Noticing the lack of comprehensive models that explain customer intention of collaborating with self-service technologies, this study explored the factors that determine customer value co-creation intention and developed a valid model during the qualitative and quantitative stages in the study respectively. Comparing with general technological acceptance models and specifically to the model recently developed by Blut *et al.* (2016) which particularly explains SST acceptance, this study reveals the significance of ‘situational factors’, ‘technology-knowhow’, ‘convenience’ and ‘information richness’ in customer co-creation intention for SSTs.

Managerial Implications:

First, the study provides a broad understanding to service providers on why (reasons) customers collaborate with self-service technology kiosks. The qualitative study provides strong evidence on how performance, convenience, technology-knowhow, information richness, situational factors, social influences and customers’ emotional reactions and personal judgements influence their intention of value co-creation in SSTs.

Service providers can take various steps to increase customers’ intention of using SST kiosks by improving their self-service technologies to match with customer expectations. This study finds that ‘performance’ can be enhanced by improving the usefulness, speed, efficiency, consistency, cost-effectiveness, user-friendliness, reliability and trialability. In particular, this study finds that customers expect quick performance from SSTs without wasting their time and effort, and typically they select SSTs when the physical interfaces are crowded or when they are in a hurry (situational factors) with the purpose of saving their time (e.g., self-checkouts at supermarkets). Therefore, organisations should ensure their SST kiosks are up-to-date and performing rapidly without any tech-related delays or failures. Further, this study found that customers expect a ‘consistent’ level of service from SSTs, such that they can use their existing knowledge and experience in a routine manner to perform similar kinds of SST transactions without hesitations (e.g., similar kinds of self-service checkouts at different supermarkets). Therefore, this study suggests that service firms to secure the consistency of SST service performance, ensuring customer ability to use their existing knowledge and skills in a continual basis. This does not mean, not making any improvements to the SSTs, but to make these

developments in such a manner that customers could feel more comfortable than they did before.

Further, 'information richness' including sufficiency, timeliness, relevance, accuracy, clarity, consistency, simplicity of information/instruction are to be recognised as important when it comes to customer value co-creation intention in SST kiosks. Practitioners can achieve greater competitive advantages by providing and upgrading their self-service technologies to incorporate these qualities, thereby promoting successful customer value co-creations and positive experiences. For example, respondents revealed that sometimes information available on relevant organisational websites are not up to date, terms and conditions are hidden or not presented clearly and some confusing instructions invite problems. Some respondents complained that the information available was not sufficient to elicit the most correct decisions, and thereby leading to value co-destructions. Addressing such issues, this study recommends that service organisations exert some extra effort in managing their websites and other technological interfaces, to provide up to date, clear, accurate, simple and relevant guidelines/information to aid successful performance of value co-creation in SSTs. Further, this study suggests that service organisations provide sufficient information and full details on their offers, since customers have to make their choice in the absence of the service provider's verdict. Additionally, the study found that convenience factors, including 'time convenience, place convenience and less physical efforts', are important in customer value co-creation intention. Therefore, organizations should attempt to provide customer convenience as much as possible via the provision of SST options.

The study found a significance in the aspects of 'technology-knowhow' including customers' general knowledge on SST devices, computer knowledge, internet knowledge, ease of gathering this knowledge and ease of using SSTs. Therefore, the study recommends that organisations assist customers in enhancing their technology knowhow by disseminating awareness of more user-friendly ways of interacting with the organisation's technological interfaces, promoting few-stepped processes with easy to recall approaches with visual demonstrations (e.g., click-choose-confirm-pay) and promoting the benefits of using self-service technologies. Further, this study advises service organisations to consider the customer's technology-knowhow, especially at the stage of designing their SSTs, such that typical customers (not only technology experts) can use them with minimum effort.

Situational factors such as crowding at physical interfaces and the hurriedness of the customer are recognised as vital in SST kiosk use. Therefore, if business organisations are not providing self-service technologies at all or not offering enough technological interfaces, this study recommends them to facilitate customers with enough self-service technological options, if possible, so they can perform with SSTs, especially in the above identified situations.

Since the study recognizes age as an important element in determining SST acceptance such that older people are reluctant to perform with SST kiosks, service providers should not neglect that segment of the market in their service provision and should make sure that they provide options to perform service transactions in physical interfaces, without forcing them to use SSTs.

The study found that, while younger people enjoy using SSTs, some older people feel a sense of fear and guilt towards SSTs. The guilty feeling towards SSTs is mainly due to the fact that it causes loss of job opportunities and reduces inter-personal interaction, making customers feel more isolated. Furthermore, while a majority of young people trust SSTs, some older people see it as a risk and a threat to their privacy. While young people believe SSTs make them more independent, older people view it as more of an isolating factor. The majority of younger people appeared as ready and confident to use SSTs while the opposite were recognised among older people. Everyone believed SSTs are still voluntary, and organisations are providing options to choose between SSTs or interpersonal interactions. These insights will be helpful to business organisations to explore how they can make their different demographic profiles happy with their service. It also provides insights on how to promote the organisation's self-service technologies to different demographic segments, based on what they value. This understanding can be used to initiate awareness programmes on reducing poor attitudes towards organisations and their technologies by promoting positive views such as how they help to enhance the wellbeing of individuals and society rather than being associated with negative impacts.

Limitations and future research directions

Limiting to the semi-structured interviews and covering a smaller geographical area can be recognized as the limitations of this study. Therefore, as the next step, the empirical validations of these qualitative findings through a field survey is recommended. Further, investigations of customer use behaviour of self-service technologies and exploring their experiences with SSTs can be proposed as related future studies.

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CONFLICT OF INTEREST

The author declares no conflicts of interest.

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