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The Influence of Self-Service Technology on Customer Word-of-Mouth in Retail

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Abstract

In light of the vital role of word-of-mouth (WOM) in ensuring the success of retail establishments, this study investigates the influence of self-service technology (SST) on customer WOM. Data collected from 361 respondents were used to construct a structural equation model. The results indicate that perceived ease of use, usefulness, and perceived control have varying effects on both SST satisfaction and WOM intention. These findings are of practical significance for store managers seeking to harness SST for enhancing positive word-of-mouth (WOM) and strengthening retail success.

Keywords: word-of-mouth, retail self-service technology, ease of use, usefulness, perceived control

Introduction

Technology has radically changed the business landscape (Gallaugher, 2010; Schön, 2017). Among the range of new technologies developed within the last several decades, self-service technology (SST), or "technological interfaces that enable customers to produce a service independent of direct service employee involvement" (Meuter et al., 2000, p. 50), has attracted a great deal of attention from marketing scholars and practitioners (Kelly et al., 2010). Notable examples include automated teller machines (ATMs), pay-at-the-pump machines, and telephone banking or, more recently, automated hotel and grocery store checkouts, airline check-in systems for e-ticket holders, in-store kiosks for product information, web-based purchasing, and Internet transactions (Orel & Kara, 2014; Yang & Klassen, 2008). By replacing human-to-human contact with human-machine interaction (Parasuraman, 2000), SST has effectively reshaped consumers' views of the conception, development, and delivery of services (Huang & Zhou, 2017; Meuter et al., 2005).

If managed properly, SST allows retailers to serve customers in a more efficient way by offering consistent services (Gelderman et al., 2011; Weijters et al., 2007; Yang & Klassen, 2008). SST offers more choices to customers, which can reduce anxiety associated with personnel judgement (Bitner, 2001; Griffy-Brown et al., 2008; Meuter et al., 2000). They also allow retailers to better meet the needs of specific groups of customers, including those who seek more innovative services (Azhar & Lin, 2017; Dean, 2008). Overall, the use of SST makes shopping faster, easier, and more controllable for customers, thus creating an overall more enjoyable retail experience and, by extension, increasing customer satisfaction and loyalty (Bitner et al., 2002; Dabholkar et al., 2003; Meuter et al., 2000, Orel & Kara, 2014). In addition to adding value for customers, SST can empower both employees and customers by offering place and time convenience (Hsieh, 2005; Li & Gregor, 2011; Yang & Klassen, 2008). Further, labor, real estate, and communication costs can be reduced for retailers through the deployment of SST (Canbase, 2009; Orel & Kara, 2014).

To date, the benefits of SST for customers and retailers have been suggested, but limited attention has been paid to the influence of SST deployment on customer word-of-mouth (WOM). The present research sought to address this gap in the literature by using the theory of planned behavior (TPB) and technological acceptance model (TAM) as a framework to predict customer satisfaction and WOM in retail contexts.

Theoretical Framework

The Theory of Planned Behavior (TPB) underscores the significance of both intention and behavioral control in shaping behavior, as evidenced by Ajzen (2002), Armitage and Conner (2001), and Sheeran (2002). TPB finds application in a diverse array of domains, including ethical decision-making (Chang, 1998), health management (McEachan et al., 2011), driving behaviors (Elliott et al., 2007), and technology adoption, such as online grocery shopping (Hansen et al., 2004). In this model, human attitude is considered to be the result of behavioral belief and the evaluation of outcomes, as proposed by Mathieson in 1991. Despite the prevalent use of attitude and subjective norms as predicted outcomes in these models, the present study specifically centers on the outcomes related to the utilization of Self-Service Technologies (SSTs), such as satisfaction and Word of Mouth. In parallel, the Technology Acceptance Model (TAM) is widely employed for forecasting technology acceptance, emphasizing the pivotal roles of perceived ease of use and usefulness (Davis, 1986). TAM's versatility is evident across various contexts, with robust associations established between its constructs and technology adoption (Guriting & Ndubisi, 2006). Moreover, TAM's insights extend to attitudes toward technology, including applications in the realm of retail self-service technology (Childers et al., 2001). This study posits that the foundational concepts shared by TPB and TAM—perceived control, ease of use, and usefulness—exert an influential impact on customer word-of-mouth. This influence is mediated through satisfaction derived from the utilization of self-service technology (SST).

Literature Review Word-of-Mouth

Positive customer WOM, or "oral, person-to-person communication between a perceived non-commercial communicator and a receiver concerning a brand, a product, or a service offered for sale" (Arndt, 1967, p. 190), is a crucial driver of customer loyalty (Garnefeld et al., 2011). It thereby reduces consumer resistance, switching behavior (Wangenheim & Bayón, 2007; Money, 2004), and advertising costs (Trusov et al., 2009) while enhancing new customer acquisition (Trusov et al., 2009), customer purchases, and overall sales (Floyd et al., 2014; Libai et a., 2013; You et al., 2015). The long-term value of a retailer is thus enhanced by positive WOM (Villanueva et al., 2008).

Various studies have delved into the effects of negative word of mouth (NWOM). Azemi, Ozuem and Howell (2020) identified three distinct types of customers who engage in online NWOM: tolerable, rigorous, and confrontational online NWOM customers. In a series of experiments, Chan and Cui (2011) discovered that attribute-based NWOM adversely affects dissatisfied consumers, while experience-based NWOM has a positive influence during the post-consumption stage. Moreover, Sandes and Urdan (2013) conducted an exploratory experimental study on electronic word of mouth, revealing that negative comments significantly impact brand image. Additionally, research has shown that the impact of positive word of mouth generally outweighs that of negative word of mouth on brand purchase decisions (East et al., 2008).

Given the importance of WOM in retail and other business contexts, drivers of positive WOM should be further studied. Previous research has shown that WOM can be driven by perceived service quality and value (De Matos & Rossi, 2008; Harrison-Walker, 2001); financial incentives (Ahrens et a., 2013); and consumer trust (De Matos & Rossi, 2008), commitment, identification (Brown et al., 2005), and confusion proneness (Walsh & Mitchell, 2010). Another important antecedent to WOM, however, is customer satisfaction.

Satisfaction with SST and Word-of-Mouth

According to the disconfirmation theory, customer satisfaction is a function of customer expectations regarding products and/or services (Oliver, 1997). When the performance of a product or service meets or exceeds customer expectations, the customer will feel satisfied; if it fails to meet his or her expectations, he or she will feel dissatisfied (Bhattacherjee, 2001; Chen, 2005). The disconfirmation theory posits that consumers' desires, experiences, and expectations interact with product and service performance to affect consumer attitudes (Lee & Joshi, 2006). Satisfied customers exhibit greater loyalty, less tendency to switch (Chen, 2005; Yang & Peterson, 2004), and higher intention to patronize (Fernandes & Pedroso, 2017; Marzocchi & Zammit, 2006).

Given that the use of SST is an aspect of the consumer shopping experience, it was anticipated that satisfaction with SST would affect general customer satisfaction and eventually WOM intention (De Matos & Rossi, 2008; Ha & Im, 2012; Ladhari, 2007, Wangenheim & Bayón, 2007). Thus, it was hypothesized that:

H1: *Satisfaction with SST is positively associated with WOM intention.*

A diverse range of factors affect customer satisfaction with SST, including but not limited to customer innovativeness and optimism (Abdullah, 2012; Lin & Hsieh, 2006), fun and enjoyment (Fernandes & Pedroso, 2017), product/service price and location (Skoglan & Siguaw, 2004), site design and payment methods (Cho & Park, 2001), waiting times (Marzocchi & Zammit, 2006), convenience (Meuter et al., 2000), human touch (Makarem et al., 2009), process failure, technology failure, and forced use of SST (Jamal, 2004; Liu, 2012). In the present study, it was anticipated that the variables of perceived control, ease of use, and usefulness would affect satisfaction with SST.

Control, Ease of Use, Usefulness, and Satisfaction with SST

Perceived control. Perceived control can be used to measure behavioural control in SST contexts. It is a crucial element in the customer's appraisal of the retail experience as it drives intention to use technologies (Collier & Sherrell, 2010; Kuan et al., 2011; Zeithaml et al., 2002). For example, SST with higher perceived control has lower perceived risk and higher perceived value (Zhu et al., 2007). Dabholkar (1996) defined perceived control as the amount of control a customer feels he or she has over a process and its results. SST is perceived as more controllable when customers are able to determine and design the service for themselves and flexibly change their decisions (Lee & Allaway, 2002). In a retail context, perceived control is an intrinsic feeling of independence (Meuter et al., 2000) that can enhance consumers' evaluations of the self-service option and increase their motivation to use SST (Collier & Sherrell, 2010; Dabholkar, 1996).

Ease of use. Customers tend to feel more satisfied when SST is easy to use (Meuter et al., 2000). When an innovation is easy to understand or use, it can be said to possess perceived ease of use (Zeithaml et a., 2002). Perceived ease of use is the degree to which a person believes a particular technology or service can be used effortlessly (Davis, 1986). Perceived ease of use has positive effects on attitudes toward SST (Kim et al., 2009; Lanseng & Andreassen, 2007) and SST use in different contexts (Guriting & Ndubisi, 2006; Hernan-dez & Mazzon, 2007; Oh et a., 2013; Venkatesh, 2000; Venkatesh, 2000; Wang et al., 2003). When retail consumers can easily handle the required technology, they exhibit positive attitudes toward SST (Rangarajan et al., 2007).

Usefulness. When technology is easy to use, customers perceive it as useful because they do not have to spend time and effort figuring out how to operate or employ it and can thus complete their tasks more efficiently (Bruner & Kumar, 2005). Perceived usefulness is defined as the subjective probability of a technology helping a user complete a task (Eriksson et a., 2001; Guriting & Ndubisi, 2006; Jaruwachirathanakul & Fink, 2005; Laforet & Li, 2005; Liao & Cheung, 2002; Oh et al., 2013; Polatoglu & Ekin, 2001). Eriksson and Nilsson (2007) demonstrated that SST usefulness can positively affect users' continued use of Internet banking. Focusing on retail contexts, Lin and Chang (2011) found that usefulness can positively affect SST use. As consumers tend to select products and services with more potential benefits, SST perceived as useful attracts more consumer use (Meuter et al., 2000; Oh et al., 2013; Parasuraman et al., 2005).

Within TPB and TAM frameworks, perceived control, ease of use, and usefulness are commonly identified as positive features of SST. These features not only drive the adoption and use of SST, but also satisfaction with it (Bhattacherjee, 2001; Chen & Chen, 2009; Dabholkar & Bogozzi, 2002; Fernandes & Pedroso, 2017; Wang, 2012; Yen & Gwinner, 2003). Hence, it was hypothesized that:

H2: Perceived control is positively associated with satisfaction with SST.

H3: Ease of use is positively associated with satisfaction with SST.

H4: *Usefulness is positively associated with satisfaction with SST.*

If H1 to H4 were established, it was theorized that satisfaction with SST would mediate the relationship between perceived control, ease of use, usefulness, and WOM intention. The definition of mediating effect employed was drawn from the research of Judd and Kenny (2010), MacKinnon and Luecken (2008), and Zhao, Lynch and Chen (2010). It was thus also hypothesized that:

H5: Satisfaction with SST significantly mediates the relationship between perceived control and WOM intention.

H6: Satisfaction with SST significantly mediates the relationship between ease of use and WOM intention.

H7: Satisfaction with SST significantly mediates the relationship between usefulness and WOM intention.

To further delineate the anticipated relationships between variables, the conceptual model is illustrated in Figure 1.

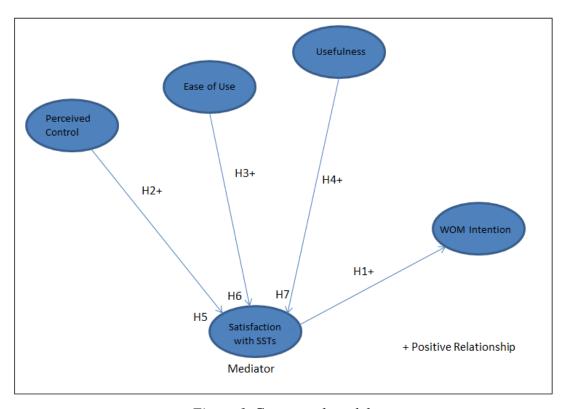


Figure 1. Conceptual model.

Method

Sample and Procedure

A descriptive cross-sectional research design was implemented in the current study as its primary aim was to discover which factors affect consumer SST use in retail contexts (Burns & Bush, 2006). A questionnaire was administered via Qualtrics using an online panel. Australian shoppers over 18 years old who had used supermarket self-checkout systems in the previous 12 months were invited to fill out the questionnaire. Prior to the study, the questionnaire was evaluated by 10 Australian shoppers, three SST scholars from Australian universities, and one Australian supermarket manager. A total of 361 participants (N = 361) completed the questionnaire with no missing values.

Measures

All constructs in the current study were measured using seven-point Likert scales (1 = "strongly disagree," 7 = "strongly agree").

Perceived control. Conceptualizing perceived control as a uni-dimensional construct, Dabholkar (1996), Yen and Gwinner (2003), and Zhu (2002) defined it as an individual's desire to exhibit mastery over his or her environment. In the current study, perceived control was measured using three items.

Ease of use. In an SST context, ease of use can be defined as the degree of complication and confusion that users experienced during technology use (Dabholkar & Bagozzi, 2002; Zhao et al., 2008). The construct of ease of use in the current study was adapted from Dabholkar and Bagozzi (2002) and Zhao, Mattila and Tao (2008). Three items were used to measure ease of use.

Usefulness. The usefulness of SST in a retail context can be defined as the efficiency and speed of shopping performed via the technology in question (e.g., self-scanning checkout) (Weijterset et al., 2007). The measure of perceived usefulness, as conceived by Weijters, Rangarajan, Falk and Schillewaert (2007), was implemented in the present study. Three measurement items were used to measure usefulness.

Satisfaction with SST. To assess overall satisfaction with SST in a retail context, three items were adopted from Zhao et al., (2008)'s study of satisfaction with library self-checkout systems.

WOM intention. Ha and Im (2012)'s three-item measurement of WOM intention was adopted in this study to measure the likelihood of customers recommending stores equipped with SST to others.

Results

The constructs of perceived control, ease of use, usefulness; satisfaction with SST; and WOM intention, each containing three items, were first purified using confirmatory factor analysis (CFA). Perceived ease of use had factor loadings of .80-.95, usefulness had factor loadings of .76-.94, perceived control had factor loadings of .78-.88, satisfaction with SST had factor loadings of .92-.94, and WOM intention had factor loadings of .91-.98. The composite reliability of constructs ranged from .85 to .96 (Appendix A), which exceeded the acceptable level of .70 (Fornell & Larcker, 1981). Thus, the reliabilities were in the acceptable range and all measures had sufficient consistency.

The average variances extracted (AVEs) of the constructs (ranged from .64-.97 in Appendix A) were above the cut-off point of 0.5 (Fornell & Larcker, 1981). Thus, the convergent validity of the constructs was acceptable. An acceptable model with a chi-square value $\chi 2$ (80) = 292.49 (p < .00); $\chi 2/df = 3.66$, RMSEA = .086, GFI = .91, AGFI = .86, NFI = .95, and CFI = .96 (Schreiber, 2008) was determined for further analysis.

Hypotheses 1 to 4 were tested using linear regression analysis. Variance inflation factor (VIF) analysis was conducted to ensure the assumption of multicollinearity. VIF values (perceived control = 1.56, ease of use = 1.67, usefulness = 1.90, satisfaction with SST = 2.36) were below the cut off value of 10 (Aiken et al., 1991); therefore, the assumption of multicollinearity was confirmed. Perceived control, ease of use, usefulness, and satisfaction with SST were entered into a linear regression equation (Model 1) and accounted for a significant amount of variance in WOM intention: $R^2 = .59$, F(4,356) = 128.21 (p < .001) (Table 1).

Model 1 indicated that satisfaction with SST was positively associated with WOM intention (β =.49, p < .001); H1 was therefore supported. Perceived control, ease of use, and usefulness were entered into another linear equation (Model 2) and accounted for a significant amount of variance in satisfaction with SST: R 2 = .76, F (3,357) = 161.78 (p < .001) (Table 1). Model 2 indicated that perceived control (β =.19, p < .001), ease of use (β =.37, p < .001), and usefulness (β =.44, p < .001) were positively associated with satisfaction with SST; thus, H2, H3, and H4 were also supported.

Further analysis of the mediating effect using PROCESS suggested that satisfaction with SST significantly mediated the relationship between perceived control and WOM intention (β = .09, CIs 95% .03-.15), ease of use and WOM intention (β = .18, CIs 95% .11-.26), and usefulness and WOM intention (β = .22, CIs 95% .13-.30). Usefulness demonstrated the highest impact on WOM intention through satisfaction with SST, as shown in Table 2. Therefore, H5, H6, and H7 were supported.

Table 1 Linear Regression Models for Word-of-Mouth Intention and Satisfaction with Self-Service Technology

	Model 1			Model 2		
	DV : WOM Intention			DV : Satisfaction with SSTs		
IV	Coefficients	t-value		Coefficients	t-value	
Perceived Control	.32**	6.66	H2:	.19**	4.15	
Ease of Use	.00	0.03	Н3:	.37**	9.94	
Usefulness	.16**	2.95	H4:	.44**	9.13	
Satisfaction with SSTs H1:	.49**	9.03				
R square	.59**			.76**		
F value	128.20			161.78		

^{**}p <.001, DV- dependent variable, IV-independent variable

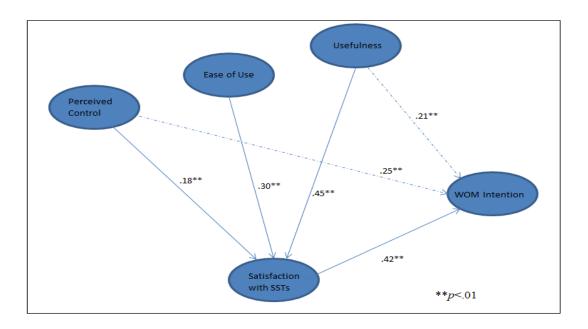
Table 2 The Mediating Effect of Satisfaction with Self-Service Technology on the Relationships between Perceived Control, Ease of use, Usefulness, and Word-of-Mouth Intention

			WOM In	ntention	
	Satisfa	ction with SS	STs		
			CI 95%		
Н	a.b	S.E.	Lower	Upper	
H5	.09	.03	.03	.15	Supported
H6	.18	.04	.11	.26	Supported
H7	.22	.04	.13	.30	Supported
	H5 H6	H a.b H5 .09 H6 .18	H a.b S.E. H5 .09 .03 H6 .18 .04	Satisfaction with SSTs CI 95% H a.b S.E. Lower H5 .09 .03 .03 H6 .18 .04 .11	CI 95% H a.b S.E. Lower Upper H5 .09 .03 .03 .15 H6 .18 .04 .11 .26

CI 95% - 95% Confidence Interval, a.b- Indirect Effect, H- Hypotheses

In accordance with the conceptual model, all constructs were analyzed via structural equation modelling (SEM), resulting in a model fit of $\chi 2$ (78) = 197.29 (p < .00); $\chi 2/df = 2.53$, RMSEA = .065, GFI = .93, AGFI = .89, NFI = .95, and CFI = .97. Further improvement of the model fit using modification indices (MI) suggested that usefulness (β =.21, p < .001) and perceived control (β =.25, p < .001) directly affected WOM intention, resulting in an acceptable model fit of $\chi 2$ (76) = 150.00 (p < .00); $\chi 2/df = 1.97$, RMSEA = .052, GFI = .95, AGFI = .92, and NFI = .97 (Schreiber, 2008). Total effects (direct effect+ indirect effect) of usefulness, perceived control and ease of use on WOM intention were .40, .33 and .13. Figure 2 illustrates the final model.

Figure 2. The final model.



Discussion and Implications

The current study implemented TPB and TAM as frameworks to analyze the relationships between perceived control, ease of use, and usefulness; customer satisfaction with SST; and customer WOM intention. As hypothesized, customers who exhibited higher satisfaction with SST had higher intention to recommend stores to others. This finding is in accordance with the results of research conducted by De Matos and Rossi (2008), Ha and Im (2012), Ladhari (2007), and Wangenheim and Bayón (2007).

Additionally, customers who perceived SST as more controllable, easier to use, and more useful were more likely to feel satisfied with SST, which is consistent with hypotheses formulated based on evidence provided by Bhattacherjee (2001), Chen and Chen (2009), Dabholkar and Bogozzi (2002), Fernandes and Pedroso (2017), Wang (2012), and Yen and Gwinner (2003). As predicted, perceived control, ease of use, and usefulness affected customers' intention to recommend stores to others. This relationship was mediated by satisfaction with SST, which is consistent with predictions regarding the mediation process as defined by Judd and Kenny (2010), MacKinnon and Luecken (2008), and Zhao, Lynch and Chen (2010). As a result, the current study confirms that SST deployment influences customer WOM through satisfaction with SST, which contributes new knowledge to the breadth of SST literature and suggests managerial implications.

In previous studies, TPB and TAM have been predominantly used to predict satisfaction with, attitudes toward, adoption and use of technology. The current study confirms that TPB and TAM can also predict customer WOM intention. However, an additional theoretical component must be added to fully explain the phenomenon or phenomena under observation; in the present study, disconfirmation theory was employed. The results indicated that perceived control, ease of use, and usefulness influence WOM. This suggests SST deployment has an impact on consumer behavior that extends beyond satisfaction with, attitudes toward, and the adoption and use of the technologies in question.

The current study thus provides insights for store managers or other actors making decisions regarding SST deployment, offering suggestions to maximize the benefits of SST in retail environments. To enhance positive customer WOM, store managers can prioritize the usefulness of self-checkout systems as usefulness was found to be the most important factor in generating customer WOM. An important priority in the design of self-checkouts is the speed of transactions: redundant instructions and complicated procedures should be avoided. In addition to design, stores can limit self-service transactions to customers purchasing fewer items to facilitate speedy transactions and to shorten lines.

To further foster customer WOM, perceived control and ease of use must also be considered. Managers should prioritize user friendliness, focusing on the option and customization functions included in

self-checkout system design. If design alterations are not feasible, managers can consider alternative ways to enhance customer satisfaction with SST. Reducing failure incidents and providing customers with autonomy in their decision to use or not use SST are two such ways to enhance customer WOM (Jamal, 2004; Liu, 2012).

Limitations and Future Research

While the present study undeniably offers valuable insights for retail managers navigating the implementation of Self-Service Technology (SST), it is crucial to recognize its inherent limitations. The primary constraint lies in its exclusive focus on Australian supermarket customers, which naturally restricts the generalizability of its findings to a broader international or multi-sector context. Nonetheless, the research methodology employed in this project displays flexibility, allowing its application in various settings, including small to medium-sized retailers and diverse geographical locations, facilitating exploration into nuanced variations in consumer behaviour when engaging with SSTs (Arnould & Thompson, 2005; De Mooij, 2010). The study's research design, using a cross-sectional approach, offers valuable snapshots of consumer behaviour but comes with limitations in terms of internal validity (Howitt & Cramer, 2010). Therefore, there is a compelling case for conducting longitudinal and experimental studies in future research endeavours to better understand causal relationships between variables and enhance depth of insight (Goodwin, 2009; Howitt & Cramer, 2010). Additionally, the study didn't investigate the potential influence of situational factors like queue length and waiting time, nor did it explore moderating effects related to variables such as age and gender. These unexplored dimensions could significantly contribute to a more comprehensive understanding of how situational elements interact with and moderate SST usage. Furthermore, it's essential to note that the data collected primarily represents experiences of customers frequenting large retailers, particularly in the expansive Australian supermarket landscape. As a result, this data may not fully represent the behaviours and preferences of customers in small or medium-sized retailers. To gain a holistic understanding of consumer SST usage, future research should explicitly address dynamics within smaller retailers, recognizing potential differences in SST adoption and use in such contexts.

Conclusion

Self-checkouts not only offer convenience to customers and reduce costs for retailers, but they also enhance customer satisfaction and increase the likelihood of positive word-of-mouth when managed properly by retailers. However, the current research is subject to various limitations.

References

- 1. Abdullah, N. A. H. N. (2012). Technology readiness and users satisfaction towards self-service technology at Malaysian airport. *Information Management and Business Review*, 4(8), 453-460. https://doi.org/10.22610/imbr.v4i8.1000
- 2. Ahrens, J., Coyle, J. R., & Strahilevitz, M. A. (2013). Electronic word of mouth: The effects of incentives on e-referrals by senders and receivers. *European Journal of Marketing*, 47(7), 1034-1051.
- 3. Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple Regression: Testing and Interpreting Interactions*. Sage.
- 4. Ajzen, I. (2002). Perceived behavioral control, Self efficacy, locus of control, and the theory of planned behavior. *Journal of applied social psychology*, 32(4), 665-683. https://doi.org/10.1111/j.1559-1816.2002.tb00236.x
- 5. Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British journal of social psychology*, 40(4), 471-499. https://doi.org/10.1348/014466601164939
- 6. Arndt, J. (1967). Word of mouth advertising and informal communication. *Risk Taking and Information Handling in Consumer Behavior*, 188-239.
- 7. Arnould, E. J., & Thompson, C. J. (2005). Consumer culture theory (CCT): Twenty years of research. *Journal of Consumer Research*, 31(4), 868-882. https://doi.org/10.1086/426626

- 8. Azhar, A., & Lin, C. W. (2017, May). Determining Business Model for Indonesia Mobile Operators to Reach The Growing Emerging Market in Internet Prepaid Card User. In *Proceedings of the 2017 International Conference on E-Business and Internet* (pp. 33-37). ACM.
- 9. Azemi, Y., Ozuem, W., & Howell, K. E. (2020). The effects of online negative word-of-mouth on dissatisfied customers: A frustration-aggression perspective. *Psychology & Marketing*, 37(4), 564-577. https://doi.org/10.1002/mar.21326
- 10. Bhattacherjee, A. (2001). Understanding information systems continuance: an expectation-confirmation model. MIS quarterly, 25(3), 351-370. https://doi.org/10.2307/3250921
- 11. Bitner, M. J. (2001). Self-service technologies: What do customers expect?. *Marketing Management*. Spring, 10-11. https://doi.org/10.4324/9780080938622-12
- 12. Bitner, M. J., Ostrom, A. L., & Meuter, M. L. (2002). Implementing successful self-service technologies. *The Academy of Management Executive*, 16(4), 96-108. https://doi.org/10.5465/ame.2002.8951333
- 13. Brown, T. J., Barry, T. E., Dacin, P. A., & Gunst, R. F. (2005). Spreading the word: Investigating antecedents of consumers' positive word-of-mouth intentions and behaviors in a retailing context. *Journal of the Academy of Marketing Science*, 33(2), 123-138. https://doi.org/10.1177/0092070304268417
- 14. Bruner, I. I. G.C., & Kumar, A.(2005). Applying TAM to consumer usage of handheld Internet devices. *Journal of Business Research*, 58, 553-558.
- 15. Burns, A. C., & Bush, R. F. (2006). Marketing Research (5th). Prentice Hall.
- 16. Canbase. (2009). *Self Service*. Retrieved December 11 2008, from http://www.canbase.com/Self_Service%20.htm.
- 17. Chan, H., & Cui, S. (2011). The contrasting effects of negative word of mouth in the post-consumption stage. *Journal of Consumer Psychology*, 21(3), 324-337. https://doi.org/10.1016/j.jcps.2010.11.005
- 18. Chang, M. K. (1998). Predicting unethical behavior: A comparison of the theory of reasoned action and the theory of planned behavior. *Journal of Business Ethics*. 17(16), 1825-1834. https://doi.org/10.1007/978-94-007-4126-3_21
- 19. Chen, K. J. (2005). Technology-based service and customers satisfaction in developing countries. International Journal of Management. 22(2), 307-318.
- 20. Chen, S.C., & Chen, H. H. (2009). The empirical study of customer satisfaction and continued behavioural intention towards self-service banking: technology readiness as an antecedent. *International Journal of Electronic Finance*. 3, 64-76. https://doi.org/10.1504/ijef.2009.024270
- 21. Childers, T. L., Christopher, L. C., Carr, J. P., & Carson, S. (2001). Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of Retailing*. 77, 511-35. https://doi.org/10.1016/s0022-4359(01)00056-2
- 22. Cho, N., & Park, S. (2001). Development of electronic commerce user-consumer satisfaction index (ECUSI) for Internet shopping. *Industrial Management & Data Systems*. 101(8), 400-406. https://doi.org/10.1108/eum0000000006170
- 23. Collier, J. E., & Sherrell, D. L. (2010). Examining the influence of control and convenience in a self-service setting. Journal of the Academy of Marketing Science, 38 (4), 490–509. https://doi.org/10.1007/s11747-009-0179-4
- 24. 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*, 13, 29-51. https://doi.org/10.1016/0167-8116(95)00027-5
- 25. Dabholkar, P. A., Bobbitt, L. M., & Lee, E. J. (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*, 14(1), 59-95. https://doi.org/10.1108/09564230310465994
- 26. 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*. 30(3), 184-201. https://doi.org/10.1177/00970302030003001

- 27. Davis, F. D. (1986). A technology acceptance model for empirically testing new end-user information systems: theory and results, *Massachusetts Institute of Technology, Sloan School of Management*, Thesis (Ph.D.).
- 28. Dean, D. H. (2008). Shopper age and the use of self-service technologies. *Managing Service Quality*. 18(3), 228-238. https://doi.org/10.1108/09604520810871856
- 29. De Matos, C. A., & Rossi, C. A. V. (2008). Word-of-mouth communications in marketing: a meta-analytic review of the antecedents and moderators. *Journal of the Academy of Marketing Science*, 36(4), 578-596. https://doi.org/10.1007/s11747-008-0121-1
- 30. De Mooij, M. (2010). Consumer behavior and culture: Consequences for global marketing and advertising. Sage.
- 31. East, R., Hammond, K., & Lomax, W. (2008). Measuring the impact of positive and negative word of mouth on brand purchase probability. *International Journal of Research in Marketing*, 25(3), 215-224. https://doi.org/10.1016/j.ijresmar.2008.04.001
- 32. Elliott, M. A., Armitage, C. J., & Baughan, C. J. (2007). Using the theory of planned behaviour to predict observed driving behaviour. *British Journal of Social Psychology*, 46(1), 69-90. https://doi.org/10.1348/014466605x90801
- 33. Eriksson, K., Bagozzi, R. P., & Warshaw, P. R. (2001). Customer acceptance of internet banking in Estonia. *International Journal of Bank Marketing*. 23(20), 200-216. https://doi.org/10.1108/02652320510584412
- 34. Eriksson, K., & Nilsson, D. (2007). Determinants of the continued use of self- service technology: The case of internet banking. *Technovation*. 27, 159-167. https://doi.org/10.1016/j.technovation.2006.11.001
- 35. Fernandes, T., & Pedroso, R. (2017). The effect of self-checkout quality on customer satisfaction and repatronage in a retail context. *Service Business*, 11(1), 69-92. https://doi.org/10.1007/s11628-016-0302-9
- 36. Floyd, K., Freling, R., Alhoqail, S., Cho, H. Y., & Freling, T. (2014). How online product reviews affect retail sales: A meta-analysis. *Journal of Retailing*, 90(2), 217-232. https://doi.org/10.1016/j.jretai.2014.04.004
- 37. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 39-50. https://doi.org/10.2307/3151312
- 38. Gallaugher, J. (2010). *Information Systems: A Manager's Guide to Harnessing Technology*. Flat World Knowledge. https://doi.org/10.24926/8668.1101
- 39. Garnefeld, I., Helm, S., & Eggert, A. (2011). Walk your talk: an experimental investigation of the relationship between word of mouth and communicators' loyalty. *Journal of Service Research*, 14(1), 93-107. https://doi.org/10.1177/1094670510384981
- 40. Gelderman, C. J., Paul, W. T., & Van Diemen, R. (2011). Choosing self-service technologies or interpersonal services—The impact of situational factors and technology-related attitudes. *Journal of Retailing and Consumer Services*, 18(5), 414-421. https://doi.org/10.1016/j.jretconser.2011.06.003
- 41. Goodwin, C. J. (2009). Research in psychology: Methods and design. John Wiley & Sons.
- 42. Griffy-Brown, C., Chun, M. W. S., & Machen, R. (2008). Hilton hotels corporation self-service technology. *Journal of Information Technology Case and Application Research*. 10(2), 37. https://doi.org/10.1080/15228053.2008.10856135
- 43. Guriting, P., & Ndubisi, N. O. (2006). Borne online banking: Evaluating customer perceptions and behavioral intention. *Management Research News*. 29(1/2), 6-15. https://doi.org/10.1108/01409170610645402
- 44. Ha, Y., & Im, H. (2012). Role of web site design quality in satisfaction and word of mouth generation. *Journal of Service Management*, 23(1), 79-96. https://doi.org/10.1108/09564231211208989
- 45. Hansen, T., Jensen, J. M., & Solgaard, H. S. (2004). Predicting online grocery buying intention: a comparison of the theory of reasoned action and the theory of planned behaviour, *International Journal of Information Management*, 24(6), 539-50. https://doi.org/10.1016/j.ijinfomgt.2004.08.004

- 46. Harrison-Walker, L. J. (2001). The measurement of word-of-mouth communication and an investigation of service quality and customer commitment as potential antecedents. *Journal of Service Research*, 4(1), 60-75. https://doi.org/10.1177/109467050141006
- 47. Hernan-dez, J. M. C., & Mazzon, J. A. (2007). Adoption of internet banking: proposition and implementation of an integrated methodology approach. *International Journal of Bank Marketing*. 25(2), 72-88. https://doi.org/10.1108/02652320710728410
- 48. Howitt, D., & Cramer, D. (2010). Thematic analysis. Introduction to qualitative methods in psychology, 2, 163-186.
- 49. Hsieh, C. T. (2005). Implementing self-service technology. Cumminications of the IIMA, 5(1), 77-83.
- 50. Huang, W., & Zhou, Y. (2017). Application of Housing Industrialization in Green Building from the Perspective of SST. In *Proceedings of International Symposium on Green Management and Local Government's Responsibility* (p. 222).
- 51. Jamal, A. (2004). Retail banking and customer behavior: a study of self-concept, satisfaction and technology usage. *The International Review of Retail, Distribution and Consumer Research*. 14(3), 357-379. https://doi.org/10.1080/09593960410001678381
- 52. Jaruwachirathanakul, B., & Fink, D. (2005). Internet banking adoption strategies for a developing country: The case of Thailand. *Internet Research*. *15*(3), 295-311. https://doi.org/10.1108/10662240510602708
- 53. Judd, C. M., & Kenny, D. A. (2010). *Data analysis in social psychology: Recent and recurring issues*. John Wiley & Sons, Inc..
- 54. Kelly, P., Lawlor, J., & Mulvey, M. (2010). A Review of Key Factors Affecting the Adoption of Self-Service Technologies in Tourism.
- 55. Kim, Y. J., Chun, J. U., & Song, J. (2009). Investigating the role of attitude in technology acceptance from an attitude strength perspective. *International Journal of Information Management*, 29(1), 67-77. https://doi.org/10.1016/j.ijinfomgt.2008.01.011
- 56. Kuan, F. Y., Ho, Y. P., & Chang, T. F. (2011, May). A study on the influence of consumers' perceived control and perceived risk to new E-Commerce technology innovation resistance. In E-Business and E-Government (ICEE), 2011 *International Conference* on (pp. 1-4). IEEE.
- 57. Ladhari, R. (2007). The effect of consumption emotions on satisfaction and word-of-mouth communications. *Psychology & Marketing*, 24(12), 1085-1108. https://doi.org/10.1002/mar.20195
- 58. Laforet, S., & Li, X. (2005). Consumers' attitudes towards online and mobile banking in China. *International Journal of Bank Marketing*. 23(5), 362-380. https://doi.org/10.1108/02652320510629250
- 59. Lanseng, E. J., & Andreassen, T. W. (2007). Electronic healthcare: a study of people's readiness and attitude toward performing self-diagnosis. *International Journal of Service Industry Management*, 18(4), 394-417. https://doi.org/10.1108/09564230710778155
- 60. Lee, J., & Allaway, A. (2002). Effects of personal control on adoption of self-service technology innovation. *The Journal of Services Marketing*. 16(6), 553. https://doi.org/10.1108/08876040210443418
- 61. Lee, K., & Joshi, K. (2006, April). Development of an integrated model of customer satisfaction with online shopping. In *Proceedings of the 2006 ACM SIGMIS CPR conference on computer personnel research: Forty four years of computer personnel research: achievements, challenges & the future* (pp. 53-56). ACM. https://doi.org/10.1145/1125170.1125188
- 62. Li, M., & Gregor, S. (2011). Outcomes of effective explanations: Empowering citizens through online advice. *Decision support systems*, 52(1), 119-132. https://doi.org/10.1016/j.dss.2011.06.001
- 63. Libai, B., Muller, E., & Peres, R. (2013). Decomposing the value of word-of-mouth seeding programs: Acceleration versus expansion. *Journal of Marketing Research*, 50(2), 161-176. https://doi.org/10.1509/jmr.11.0305
- 64. Lin, J. S. C., & Chang, H. C. (2011). The role of technology readiness in self-service technology acceptance. *Managing Service Quality*, 21(4), 424-444. https://doi.org/10.1108/09604521111146289

- 65. Lin, J. S. C., & Hsieh, P. L. (2006). The role of technology readiness in customers' perception and adoption of self-service technologies. *International Journal of Service Industry Management*, 17(5), 497-517. https://doi.org/10.1108/09564230610689795
- 66. Liu, S. (2012). The impact of forced use on customer adoption of self-service technologies. *Computers in Human Behavior*, 28(4), 1194-1201. https://doi.org/10.1016/j.chb.2012.02.002
- 67. Liao, Z., & Cheung, M. T. (2002). Internet-based e-banking and consumer attitudes: An empirical study. *Information and Management Archive*. 39(4), 283-295. https://doi.org/10.1016/s0378-7206(01)00097-0
- 68. MacKinnon, D. P., & Luecken, L. J. (2008). How and for whom? Mediation and moderation in health psychology. *Health Psychology*, 27(2S), S99. https://doi.org/10.1037/0278-6133.27.2(suppl.).s99
- 69. Makarem, S. C., Mudambi, S. M., & Podoshen, J. S. (2009). Satisfaction in technology-enabled service encounters. Journal of Services Marketing, 23(3), 134-144. https://doi.org/10.1108/08876040910955143
- 70. Marzocchi, G. L., & Zammit, A. (2006). Self Scanning technologies in retail: Determinants of adoption. *The Service Industries Journal*. 26(6), 651-669. https://doi.org/10.1080/02642060600850790
- 71. Mathieson, K. (1991). Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior. *Information systems research*, 2(3), 173-191. https://doi.org/10.1287/isre.2.3.173
- 72. McEachan, R. R. C., Conner, M., Taylor, N. J., & Lawton, R. J. (2011). Prospective prediction of health-related behaviours with the theory of planned behaviour: A meta-analysis. *Health Psychology Review*, 5(2), 97-144. https://doi.org/10.1080/17437199.2010.521684
- 73. 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*, 61-83. https://doi.org/10.1509/jmkg.69.2.61.60759
- 74. Meuter, M. L., Ostrom, A. L., Roundtree, R. I., & Bitner, M. J. (2000). Self- service technologies: understanding customer satisfaction with technology-based service encounters. *Journal of Marketing*. 64(3), 50-64. https://doi.org/10.1509/jmkg.64.3.50.18024
- 75. Money, R. B. (2004). Word-of-mouth promotion and switching behavior in Japanese and American business-to-business service clients. *Journal of Business Research*, 57(3), 297-305. https://doi.org/10.1016/s0148-2963(01)00325-3
- 76. Oh, H., Jeong, M., & Baloglu, S. (2013). Tourists' adoption of self-service technologies at resort hotels. *Journal of Business Research*, 66(6), 692-699. https://doi.org/10.1016/j.jbusres.2011.09.005
- 77. Oliver, R. L. (1997). Satisfaction: A behavioral perspective on the consumer. New York: McGraw Hill.
- 78. Orel, F. D., & Kara, A. (2014). Supermarket self-checkout service quality, customer satisfaction, and loyalty: Empirical evidence from an emerging market. *Journal of Retailing and Consumer Services*, 21(2), 118-129. https://doi.org/10.1016/j.jretconser.2013.07.002
- 79. Parasuraman, A. (2000). Technology readiness index (TRI): a multiple-item scale to measure readiness to embrace new technologies. *Journal of Service research*. 2(May), 307-20. https://doi.org/10.1177/109467050024001
- 80. Parasuraman, P., Zeithaml, V., & Malhotra, A. (2005). E-SERVQUAL: A multiple-item scale for assessing electronic service quality. Journal of Service Research. 7(3), 213-233. https://doi.org/10.1177/1094670504271156
- 81. Polatoglu, V. N., & Ekin, S. (2001). An empirical investigation of the Turkish consumers' acceptance of internet banking services. *International Journal of Bank Marketing*. 19(4), 156-165. https://doi.org/10.1108/02652320110392527
- 82. 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*. 10(1), 3-21. https://doi.org/10.1177/1094670507302990

- 83. Sandes, F. S., & Urdan, A. T. (2013). Electronic word-of-mouth impacts on consumer behavior: Exploratory and experimental studies. *Journal of International Consumer Marketing*, 25(3), 181-197. https://doi.org/10.1080/08961530.2013.780850
- 84. Schön, D. A. (2017). The reflective practitioner: How professionals think in action. Routledge.
- 85. Schreiber, J. B. (2008). Core reporting practices in structural equation modeling. *Research in Social and Administrative Pharmacy*, 4(2), 83-97. https://doi.org/10.1016/j.sapharm.2007.04.003
- 86. Sheeran, P. (2002). Intention—behavior relations: A conceptual and empirical review. *European review of social psychology*, 12(1), 1-36. https://doi.org/10.1002/0470013478.ch1
- 87. Skoglan, I., & Siguaw, J. A. (2004). *Understanding Switchers and Stayers in the Lodging*. Cornell University.
- 88. Trusov, M., Bucklin, R. E., & Pauwels, K. (2009). Effects of word-of-mouth versus traditional marketing: findings from an internet social networking site. Journal of Marketing, 73(5), 90-102. https://doi.org/10.2139/ssrn.1129351
- 89. Venkatesh, V. (2000). Determinants of perceived ease of use: integrating control, ntrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*, 11(4), 342-365. https://doi.org/10.1287/isre.11.4.342.11872
- 90. Villanueva, J., Yoo, S., & Hanssens, D. M. (2008). The impact of marketing-induced versus word-of-mouth customer acquisition on customer equity growth. *Journal of Marketing Research*, 45(1), 48-59. https://doi.org/10.1509/jmkr.45.1.48
- 91. Walsh, G., & Mitchell, V. W. (2010). The effect of consumer confusion proneness on word of mouth, trust, and customer satisfaction. European *Journal of Marketing*, 44(6), 838-859. https://doi.org/10.1108/03090561011032739
- 92. Wang, M. C. H. (2012). Determinants and consequences of consumer satisfaction with self-service technology in a retail setting. *Managing Service Quality*, 22(2), 128-144. https://doi.org/10.1108/09604521211218945
- 93. Wang, Y. S., Wang, Y. M., Lin, H. H., & Tang, T. I. (2003). Determinants of user acceptance of Internet banking: an empirical study. *International Journal of Service Industry Management*, 14(5), 501-519. https://doi.org/10.1108/09564230310500192
- 94. Wangenheim, F. V., & Bayón, T. (2007). The chain from customer satisfaction via word-of-mouth referrals to new customer acquisition. *Journal of the Academy of Marketing Science*, 35(2), 233-249. https://doi.org/10.1007/s11747-007-0037-1
- 95. 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*. 10(1), 3-21. https://doi.org/10.1177/1094670507302990
- 96. Yang, J., & Klassen, K. J. (2008). How financial markets reflect the benefits of self-service technologies. *Journal of Enterprise Information Management*, 21(5), 448-467. https://doi.org/10.1108/17410390810904238
- 97. Yang, Z., & Peterson, R. T. (2004). Customer perceived value, satisfaction, and loyalty: The role of switching costs. *Psychology & Marketing*. 21(10), 799-822. https://doi.org/10.1002/mar.20030
- 98. Yen, R., & Gwinner, K. P. (2003). Internet retail customer loyalty: the mediating role of relational benefits. *International Journal of Service Industry Management*. 14(5), 483-500. https://doi.org/10.1108/09564230310500183
- 99. You, Y., Vadakkepatt, G. G., & Joshi, A. M. (2015). A meta-analysis of electronic word-of-mouth elasticity. *Journal of Marketing*, 79(2), 19-39. https://doi.org/10.1509/jm.14.0169
- 100. Zeithaml, V., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: A critical review of extant knowledge. *Journal of the Academy of Marketing Science*. 30(4), 362-375. https://doi.org/10.1177/009207002236911
- 101. Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197-206. https://doi.org/10.1086/651257

- 102. Zhao, X., Mattila, A. S., & Tao, L. S. E. (2008). The role of post-training self-efficacy in customers' use of self service technologies. *International Journal of Service Industry Management*, 19(4), 492-505. https://doi.org/10.1108/09564230810891923
- 103. Zhu, Z., Nakata, C., Sivakumar, K., & Grewal, D. (2007). Self-service technology effectiveness: the role of design features and individual traits. *Journal of the Academy of Marketing Science*, 35(4), 492-506. https://doi.org/10.1007/s11747-007-0019-3

Appendix A
The Correlation Matrix (N=361)

	1	2	3	4	5
1. WOM	1.00				
2. Satisfaction with SS	Γs .71**	1.00			
3. Perceived Control	.61**	.54**	1.00		
4. Ease of Use	.48**	.62**	.43**	1.00	
5. Usefulness	.60**	.66**	.53**	.46**	1.00
Mean	12.92	14.61	12.74	14.62	14.95
SD	4.65	4.45	4.15	4.37	4.03
CR	.96	.95	.85	.92	.91
AVE	.90	.97	.64	.77	.64

^{**}p <.01, SD- Standard Deviation, AVE- Average Variances Extracted,

CR- Composite Reliability

Appendix B

Demographic Profile of Respondents (N=361)

	N
51%	184
49%	177
4%	14
21%	76
26%	94
17%	61
21%	76
11%	40
14%	51
25%	90
21%	76
13%	47
10%	36
12%	43
5%	18
14%	51
22%	79
31%	112
	49% 4% 21% 26% 17% 21% 11% 14% 25% 21% 13% 10% 12% 5%

Bachelor Degree	22%	79
Post Graduate Level	9%	32
PhD and above	2%	8
Ethnic Background		
Australian	55%	199
European	28%	101
Asian	3%	11
African	2%	7
New Zealander	1%	4
Russian	1%	4
Torres Strait	1%	4

Appendix C

CFA Results of Items

Items	SFL	t-Value
Perceived Control	512	t value
 I feel more in control when I use the self-checkout option to complete my purchase. Self-checkout systems give me more control when purchasing in 	.78	10.37
stores.	.88	6.64
3. I have more flexibility when I use self-checkout systems.	.75	10.84
Ease of Use		
1. Using self-checkout systems is		
complicated.	.93	7.15
2. Using self-checkout systems is		
confusing.	.95	5.28
3. Using self-checkout systems takes a lot of effort.	.80	12.06
Usefulness		
1. Self-checkout systems allow me to shop faster.	.76	12.09
2. Self-checkout systems shorten queues.	.91	7.65
3. Self-checkout systems reduce the waiting time at cash		
registers.	.94	5.25
Satisfaction with using		
SST		
1. Self-checkout systems meet my		
expectations.	.92	9.80
2. I am really satisfied with self-checkout systems.	.94	9.80
3. In general, I am satisfied with the service I get from self-checkout	0.0	0.16
systems.	.93	9.16
Word of Mouth Intention		
1. I would recommend supermarkets with self-checkout systems to other people.	.98	5.15
2. I would recommend supermarkets with self-checkout systems to someone who is		
seeking advice.	.95	8.98
3. I would encourage my friends to go to supermarkets that have self-checkout systems.	.91	11.24