



How to cite this article:

Chow, M. M., Yeow, J. A. & See, C. K. (2022). Factors affecting generation Z's intention to use self-service technology (SST). *Journal of Business Management and Accounting*, 12(1) January, 81-96. <https://doi.org/10.32890/jbma2022.12.1.4>

FACTORS AFFECTING GENERATION Z'S INTENTION TO USE SELF-SERVICE TECHNOLOGY (SST)

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Received: 6/7/2021 Revised: 13/9/2021 Accepted: 19/9/2021 Published: 17/1/2022

ABSTRACT

As the world moves towards a technological era, various innovations have been introduced across different industries in order to meet customers' expectations and enhance service quality. Self-service Technology (SST) is one innovation that can be commonly found across industries, and has gained high popularity among users. The main objective of this study is to examine the factors that affect customer intention in using SST, specifically among Generation Z. It examines the relationship between the independent variables of perceived ease of use, perceived usefulness, need of interaction, and technology anxiety and the dependent variable of customer intention in using SST. A questionnaire survey adopted in this study secured the required information from 152 target respondents. Analyses of responses explained 65.5% variances in customer intention of using SST. The research findings established through data analysed with SPSS version 27 application, suggest that perceived ease of use and perceived usefulness have positive significant relationships towards

customer intention of using SST, but no significant relationship was found on need of interaction and technology anxiety in customer intention of using SST. Therefore, in order to encourage and attract potential and future users to utilise the service of SST, the system and function of SST need to be upgraded consistently to ensure it brings benefits and usefulness to users. Besides, a company can also educate users on ways to operate the SST in order to enhance the level of ease of use, and to increase the awareness of the usefulness of SST among users. The limitations and recommendations of future study are discussed at the end of the paper.

Keywords: Self-service Technology (SST), technology anxiety, perceived usefulness, perceived ease of use, need for interaction.

INTRODUCTION

The implementation of Self-Service Technology (SST) has been commonly found across industries in Malaysia as the world is moves towards a technological era. According to Meuter et al. (2000), self-service technology can be defined as “the technological interfaces which allow customers to conduct the service by themselves without direct interaction with services employees.” There are many kinds of SST applications available in various industries; ranging from simple, interactive, voice-based services and point-of-sale interactive devices, to internet-based services (Curran & Meuter, 2005). Most industries such as restaurants, banks, airports and hotels had started implementing SST in their daily business operations to improve efficiency and productivity, at the same time, helping companies to reduce operation costs. In Malaysia, the implementation of SST started in 1981 when Maybank introduced its first Automated Teller Machine (ATM) (Chang, 2015). Since then, self-service kiosks such as cheque deposit machines and cash deposit machines have been widely introduced in the banking industry to ease the load of heavy daily transactions. Thereafter, SST can be found across other industries. For example, Air Asia made it mandatory for local flight customers to self-check-in with the self-service kiosk or via online through the company’s website (Chang, 2015). Japanese restaurants such as Sushi King and Sakae Sushi use Ipad menus as part of their selling points while Premium-X Cinema was the first cinema to

convert its operations to a full self-service cinema through self-service kiosks in year 2013 (Chang, 2015). Another segment that received public acceptance and recognition of SST was the laundry industry. Self-service laundry was introduced to Malaysia 30 years ago but had not been publicly accepted until recently (Chang,2015). Clean Pro, Bubble Lab and Laundry Bar are among major market players in the self-service laundry industry. Since SST will be slowly implemented across industries in the near future, it is critical to understand the determinants of customers' intention in using SST, especially by Generation Z, as they will be the potential main users of SST, in order to increase its utilization to optimum level. Otherwise, it will be a waste for companies to invest such huge amounts of money on SST in business.

In the past, there have been studies focusing on customer intention of using SST (Lin & Hsieh, 2011; Elliot et al.,2012). However, most studies had been mainly focused on the Generation Y, also known as Millennials. Limited research was conducted on Generation Z. There were many terminologies used interchangeable to represent the Generation Z cohort, such as iGeneration, Gen Tech, Gen Wii, Net Gen, Digital Natives, and Plurals (Horovitz, 2012). This generation was brought up with exposure to an unprecedented amount of technology, an age in which various internet technologies were readily available at an early age (Prensky, 2001). They used modern technologies such as smartphone, laptop and other electronic devices on a daily basis and therefore, technology cannot be separated from their lives (Krbova, 2016). Due to this characteristic, SST will be investigated among the Generation Z cohort. As such, the main research objective of this study is to examine the factors that affect customers' intention in using Self-service Technology (SST) among the Malaysian Generation Z. Specifically, this research intends to investigate the relationships of perceived ease of use, perceived usefulness, need for interaction and technology anxiety on customer intention in using SST among the Malaysian Generation Z.

LITERATURE REVIEW

According to Legris et al. (2003), Technology Acceptance Model (TAM) had become the most widely used model to research topics

related to technology and information technology, and it has been recognised in most empirical studies through replication, validation and application. TAM has been widely utilised to measure individual intention and acceptance levels of new technology. According to Davis (1989), perceived ease of use and perceived usefulness are the two main factors that influence an individual's attitude, behavioural intention and subsequently, the actual usage of the technology. Many researchers have modified and further improved TAM by extending the model with additional constructs after realising the gap between its relevancy and rigidity (Chuttur, 2009). For example, past experiences of using the technology, perceived risk and situational factors (Bobbitt & Dabholkar, 2001; Kazancoglu & Yarimoglu, 2018).

The research framework developed for this study is based on TAM and two additional constructs: need for interaction and technology anxiety, which are integrated into the model. These two additional constructs were viewed as obstacles rather than motivators that influence individual intention and acceptance of new technology (Khairat, 2014). Therefore, they were introduced in the study to explore the relationships and their impact on individual intention on using SST. The relationships between the variables are presented in the following sub-sections.

Perceived Ease of Use (PEU)

Perceived Ease of Use (PEU) is defined as the “degree to which a person believes that using a particular system would be free from effort” (Davis, 1989). According to Weijters et al. (2007), PEU refers to the easiness of a system in context of whether it is user-friendly, clear and easy to understand, as well as able to explain the process of using the technology and leading it to a final outcome. PEU is one of the primary motivators to predict the intentions to use the IT or technology (Davis et al, 1989; Venkatesh & Davis, 1996). The relationship between PEU and intention to use the technology has been found to be positively correlated in past studies (Venkatesh & Davis, 1996; Muk & Chung, 2015; Sanchez-Prieto, Olmos-Migueláñez & García-Peñalvo, 2016). In other words, individuals have more intention to use a new technological innovation when they find that it is easy to understand and require less effort to control and use. As such, the following hypothesis is formed:

H₁: Perceive ease of use positively affects Generation Z's intention in using SST.

Perceived Usefulness (PU)

According to Davis (1989), perceived usefulness (PU) is defined as “the degree that a person trusts that using the technology will improve performance and effectiveness”. Besides PEU, PU has also been identified as another important determinant that affect customers’ intention to use newly invented or innovated technologies (Davis, 1989; Mohd Suki, et al. ,2008; Fu, et al., 2006). The finding is consistent with many past studies which also recognised the role of PU as one of the motivators that predict customers’ intention of using technologies, and the relationship was found to be positively correlated (Venkatesh & Davis,1996; Muk & Chung, 2015; Sanchez-Prieto et al., 2016). In addition, Cho (2011), Liu et al. (2012), Esman et al. (2010) have conducted similar research specifically on SST across different industries such as banking, airport and trading and the result reached the same conclusion by revealing that PU positively affects customers’ intention of using SST. In other words, if customers found that using SST can improve performance and enhance effectiveness, the intention of using SST will increase. As such, the following hypothesis is formed:

H₂: Perceived usefulness positively affects Generation Z’s intention in using SST.

Need of Interaction (NI)

Dabholkar (1996) defined need of interaction (NI) as “the importance of human interaction to the customer in service encounters.” According to Hornik (1992), eye contact and personal interaction with customers are still considered as important elements in service industries, as these will enhance customer experiences and satisfaction through the feel of some personal touch. There are differences found in the need of interaction in different individuals based on different personalities. For example, an introvert who is quiet, shy and reserved, prefers doing things without interaction with other people (Koch & Pratarelli, 2004). These people will rather read and follow instructions on how to use the technology instead of communicating with employees. In contrast, individuals who are outspoken and assertive prefer to communicate with employees at the counter (Collier, 2006; Phongkusalchit, 2008). The results on the relationship between NI and customers’ intention in using SST were rather mixed. Hornik (1992) found that there was a negative relationship between the two variables. However, according

to Esman et al. (2010) and Curran and Meuter (2005), the relationship between NI and customers' intention in using SST was found to be insignificant. Since the previous findings on the two variables were mixed, it is worthwhile to re-investigate the relationship between NI and customers' intention in using SST among Generation Z to reconfirm this relationship. As such, the following hypothesis is formed:

H₃: Need of interaction negatively affects Generation Z's intention in using SST.

Technology Anxiety (TA)

From prior past research, there had been evidence saying that people nowadays are facing difficulties in keeping themselves up-to-date with current technologies. Therefore, to understand the customers' perception of technology, many researchers have used technology anxiety (TA) to examine the acceptance of the customers towards technology and their intention of using the technology (Phongkukulchit, 2008; Caramba- Coker, 2009; Chai, 2008). According to Meuter et al. (2003), TA refers to the level of confidence in individuals' ability to handle the technology. It was one of the factors that affected the technology readiness index (TRI), which was invented by Parasuraman (2000). According to Parasuraman (2000), TRI is used to measure the propensity to use new technologies to achieve certain goals. So, once the TRI of certain individuals are ready, they will be likely to use the SST or new technologies (Parasuraman, 2000). There were mixed findings on the relationship between TA and customers' intention of using SST. Chatzoglou et al., (2009), Van Raaij & Schepers (2008) and Calisir (2014) claimed that there is a negative significant relationship found between TA and the customer's intention of using SST. These studies concluded that the individual who had a technology anxiety problem will have a negative attitude towards the technology, which will eventually reduce his intention of using it. On the contrary, Chang (2015) found that there was no significant relationship between the two variables. This is because most people nowadays are well-educated and have basic knowledge of using technology such as SST. Since the findings are rather mixed, it would be interesting to apply this variable to Generation Z as this group of youngsters are technologically savvy. As such, the following hypothesis is formed:

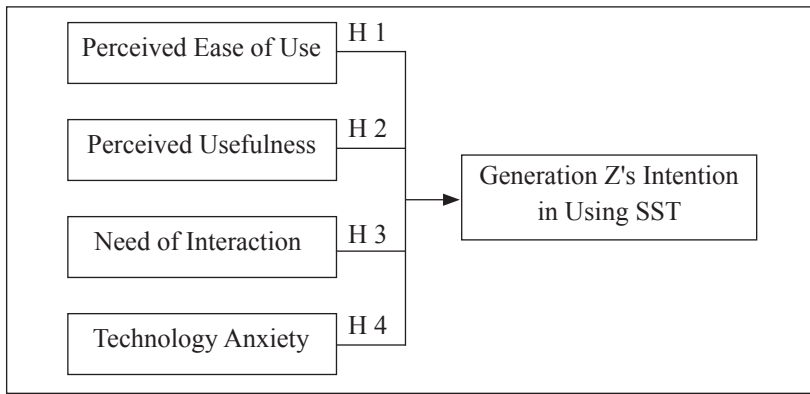
H₄: Technology anxiety negatively affects Generation Z's intention in using SST.

Research Framework

The research framework developed for this study is depicted in Figure 1.

Figure 1

Research Framework for Gen Z's Intention in Using Self-service Technology (SST)



METHODOLOGY

Sample and Data Collection

The target respondents of the study are individuals whose ages fall between 18 to 23 years, and thus are categorised under the Generation Z cohort. This study adopted quantitative approach through online questionnaire survey by using convenience sampling and snowball sampling to reach the target respondents. The questionnaire was distributed through different platforms such as email, Facebook and WhatsApp. Based on the minimum sample size recommended by G-Power software (using F-Test with effect size of 0.15, alpha value of 0.05 and power of 0.95), the study should at least obtain 129 responses. The data collection process started from 1st October 2020 to 31st October 2020 which is about a month. A total of 152 completed responses were returned and the data was then entered into SPSS version 27 for data analysis. Descriptive analysis, reliability analysis and multiple linear regression were utilised in this study.

Research Instrument

All the variables in this study were measured by a variety of validated scales based on Technology Acceptance Model (TAM). A total of 19 items were adapted from past studies to measure the 5 constructs investigated. Perceived ease of use (3 items) and perceived usefulness (4 items) were adapted from Godoe and Johansen (2012); need of interaction (4 items) and technology anxiety (4 items) were adapted from Phongkusalchit (2008) and customers' intention of using SST (4 items) were adapted from the study of Cho (2011). A five-point Likert scale, ranging from Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4) to Strongly Agree (5) were applied in the study to measure the variables. The questionnaire survey is divided into 3 sections with close-ended questions. The first section collects background information of the target respondent. The second section measures respondents' perceptions on ease of use, usefulness, need of interaction and technology anxiety. The last section is designed to measure respondents' intention of using SST.

RESULTS AND DISCUSSION

The respondents' demographic profile is presented in Table 1. From Table 1, there were 58 (38.2%) males and 94 (61.8%) females, who participated in the survey. The majority (80.3%) of respondents were in the age group of 21 to 23 years, and the remaining 19.7% aged between 18 to 20 years. Out of a total of 152 respondents, 73% were Chinese, 16.4% were Malay, 8.6% were Indians and 2% were from other ethnic groups such as Kadazan and Eurasian. For education background, 65.1% of the respondents had completed their undergraduate studies, 20.4% had obtained their diploma certificates, 11.2% were at secondary level, and the remaining 3.3% had completed their postgraduate studies.

Table 1

Demographic Background of Respondents N = 152

| | Frequency | Percentage |
|---------------|-----------|------------|
| Gender | | |
| Male | 58 | 38.2 |
| Female | 94 | 61.8 |

(continued)

| | Frequency | Percentage |
|------------------------|-----------|------------|
| Age | | |
| 18 to 20 | 30 | 19.7 |
| 21 to 23 | 122 | 80.3 |
| Ethnicity | | |
| Malay | 25 | 16.4 |
| Chinese | 111 | 73.0 |
| Indian | 13 | 8.6 |
| Others | 3 | 2.0 |
| Education Level | | |
| Secondary | 17 | 11.2 |
| Diploma | 31 | 20.4 |
| Undergraduate | 99 | 65.1 |
| Postgraduate | 5 | 3.3 |

In order to ensure the consistency of the items used in this study, Cronbach Alpha reliability analysis was conducted. Table 2 presents the alpha values of all the variables. It shows that all the reported Cronbach Alpha value were well above the threshold of 0.7, which imply that all the items used to measure the variables in this study were considered reliable (Pallant, 2011).

Table 2

Summary of Reliability Analysis

| Variables | Cronbach Alpha Value | No. of Items |
|-----------------------------------|----------------------|--------------|
| Perceived Ease of Use (PEU) | 0.91 | 3 |
| Perceived Usefulness (PU) | 0.95 | 4 |
| Need of Interaction (NI) | 0.87 | 4 |
| Technology Anxiety (TA) | 0.92 | 4 |
| Customers' intention of using SST | 0.95 | 4 |

Table 3 presents the results of Multiple Linear Regression Analysis. The proposed research framework for this study is significant as it is able to explain 65.5% ($R^2 = 0.655$) of the variances in customers' intention of using SST among Malaysian Generation Z.

Table 3

Multiple Linear Regression Analysis

| Model Summary | | | |
|-------------------------|---------------------|------|------|
| R ² | 0.655 | | |
| Adjusted R ² | 0.646 | | |
| F-Statistic | 69.76 (Sig = 0.000) | | |
| Model | Beta | t | Sig |
| Perceived ease of use | 0.44 | 4.75 | 0.00 |
| Perceived usefulness | 0.38 | 4.09 | 0.00 |
| Need for interaction | 0.05 | 0.73 | 0.47 |
| Technology anxiety | 0.03 | 0.50 | 0.62 |

Based on the model summary in Table 3, it was found that perceived ease of use has a significant positive relationship towards customers' intention of using SST (Beta = 0.44, p-value <0.05). With this result, Hypothesis 1 is supported. This result is consistent with past studies like Davis (1989), Venkatesh and Davis (1996), Muk and Chung (2015), Sanchez-Prieto et al. (2016) who also found that perceived ease of use positively affects customers' intention of using SST. According to Tanduklangi (2017) and Setiawan et al. (2018), the level of individual intention on using SST increases when the person feels it is relatively simple to operate the technology without over-relying on others for help.

In addition, the relationship between perceived usefulness and customers' intention of using SST was found to be significant positively related (Beta = 0.38, p-value <0.05) in the study. As such, Hypothesis 2 was also supported. Davis (1989), Mohd Suki et al. (2008), Fu et al. (2006), Cho (2011), Liu et al. (2012), Esman, et al. (2010) had also reached similar conclusions on the relationship between perceived usefulness and customers' intention of using SST. According to Gunawardana et al. (2015), if the self-service technology brings convenience to consumers without them having to wait for individual staff to serve them, it is perceived as usefulness of the technology. In addition, if the self-service technology integrates with the customised interface to process customer request accordingly, it is also considered as perceived usefulness (Iqbal et al., 2017). Besides, the findings in this study also support the studies conducted by Lee

et al. (2017) and Daneji et al. (2017) who also found that if the self-service technology is able to enhance efficiency and effectiveness, it will increase individual intention to reuse the SST.

However, there is no significant relationship found between the need of interaction and customers' intention on using SST as the reported p-value is greater than 0.05. Therefore, Hypothesis 3 was not supported. According to Esman et al. (2010), Curran and Mueter (2005) and Chang (2015), the relationship was found to be insignificant as most youngsters are more likely to use SST rather than interacting with employees at the service counters because they do not like to queue-up for a long period of time or wait for the service; it is viewed as time wasted. Youngsters generally are impatient and they do not see a need to interact with employees at service counters.

Last but not least, the research findings also revealed that technology anxiety does not significantly affect customers' intention of using SST among Generation Z (p-value >0.05). As such, Hypothesis 4 was not supported as well. This finding is consistent with Chang (2015) who also found that there was no significant relationship between the variables. According to Chang (2015), Generation Z nowadays are well-educated and have the basic knowledge of using technologies such as SST. They have the experience of using various technology and are fast learners in the usage of all modern technology such as smart phones, laptops, electronic devices and of course, SST. Therefore, Generation Z would not face too many problems in using SST, and the same goes with technology anxiety issues. Phongkusolchit (2008) suggested that study of technology anxiety would be more meaningful if it is to applied in advanced and technical self-service technologies rather than simple technologies used in daily routines and tasks, for example, the ATM machine.

CONCLUSION AND RECOMMENDATION

The overall findings provide useful insights to business which are in transition, moving towards implementing SST in their daily operations. The results of this study revealed that perceived usefulness and perceived ease of use have significant positive relationships with customers' intention of using SST. Therefore, it is important for companies to consistently upgrade their systems

in order to bring more convenience, benefits and usefulness to customers. Customers nowadays are concerned about efficiency, effectiveness and customisation of the service delivery; hence, it is suggested that companies should always look into these areas to enhance and improve SST performance. Furthermore, since speed is viewed as an important perceived usefulness, companies should find ways to shorten and speed-up a system's internal process to respond to customers' requests. In addition, it is suggested that companies should also perform routine maintenance to prevent system downtime and ensure that SST continue to function effectively at all times. Meanwhile, in order to enhance the level of ease of use, instructions and guidelines should be provided to customers to assist them in operating the SST. The self-service process should be made as simple as possible with minimal effort to learn and use the technology. If these recommendations are implemented, customers will be free from burdens whenever they perform the service by using SST.

Like other studies, this study is not without its limitations. Firstly, this study was only able to gather a total of 152 responses which cannot be generalised to the entire population of Generation Z in Malaysia. Therefore, a bigger number of sample size is needed for future study. Secondly, this study only focused on 4 independent variables, which explained 65.5% variances on customers' intention of using SST, the remaining 34.5% remained unexplained. Future researchers may include other variables such as personality, confidentiality, perceived enjoyment and other factors in their studies. In addition, comparative studies can be conducted across different generations such as Generation X, Y and Z, as studies focused on different samples might reach different findings and conclusions.

ACKNOWLEDGMENT

This paper was presented at the Conference on Managing Digital Industry, Technology and Entrepreneurship (CoMDITE) on 7th and 8th April 2021

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