

Customer Perception on the Adoption of Self-Service Technologies in Klang Valley

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Abstract

As self-service options have become more widespread, customers' interactions with service workers and technology have changed. Self-service technologies are increasingly valued by customers for their convenience, consistency, and control. Despite their increasing popularity, Malaysian hotels have yet to fully integrate self-service technologies into their daily operations. Self-service technologies (SSTs) help hotels to improve service standards, and the wide range of technological applications available allows hotels to choose the application that best matches the needs of their guests as well as the hotel's needs. Despite of numerous studies have been conducted in the scope of SST; the focus revolves around hotels in Klang Valley remained under-studied. The purpose of this study is therefore to 1) investigate customer perceptions of hotel self-service technology (SSTs). 2) to identify the elements that influence how self-service technologies (SSTs) are perceived and used in hotels. Perceived usefulness has a positive link with intention to utilize SSTs, according to the findings. A self-administered questionnaires that focused on variables of ease of use, privacy, autonomy and effectiveness will be part of purposive sampling approach employed to furnish the relevance towards this study.

Keywords:

Self-service technologies (SSTs); perception; intention

1 Introduction

Self-service technologies (SST) are widely used in many industries today, including the hotel industry. This SST is a technological interface that enables service operators to provide required services in the absence of direct interaction with service employees, resulting in non-face-to-face service encounters (Mueter et al, 2000 and Liu et al, 2020). The advancement of various software and applications has enabled hotels to investigate the adoption of relevant SST, which provides a positive avenue for hotels to improve the service standard that is most relevant for hotel guests and business (Ong L, 2010). The advancement of SST has had a significant impact on hotel business and its marketing policy and action plans, as it serves as a substitute for human-based services (Rust & Espinoza, 2006 and Liu & Hung, 2021), particularly in the labor-intensive hotel industry. In hotels, the most common operational functions that have adopted SST could be seen on guest self-registration for guest room check-in, automated self-checkout upon departure from hotel and dining facilities and its services; any task that is non-complex in brief with current levels of technological advancement (Kincaid & Baloglu, 2005; Stockdale, 2007; Riebeck et al, 2008 and Ivanov & Webster, 2017). In the context of Malaysian hotels, the number of hotels and growth in hotel sectors within the Klang Valley region were extensive, but hotel SST adoption was relatively low.

According to Hirschmann (2021), hotel construction in Kuala Lumpur's capital city accelerated between 2014 and 2019, resulting in a growing supply of 444 hotels by 2019. However, in terms of practicality, SST implementation was lacking in the industry. This situation in Klang Valley hotels may be similar to the findings of a study conducted by Ahmad and Scott (2019) on hotels in Langkawi, which found that SST implementation in the form of self-check in and check out kiosks was not regarded as important due to SST shortcomings in meeting guest service expectations in general. Despite acknowledging the benefits of SST adoption, hotel operators remain skeptical, fearing that resources will be wasted if hotel guests are not receptive to the change in SST adoption; as the technology system has yet to gain complete popularity among hotels in this country (Curran & Meuter, 2005; Meuter et al, 2003 and Jalil & Yeik, 2019). Furthermore, the reliance on SST is viewed as a barrier to human social interaction between service providers and hotel guests, which may have an impact on typical service delivery and recovery (Beatson, Coote, & Drennan, 2006; Bitner, 2001; Curran et al., 2003; Meuter & Bitner, 1998).

One constant debate between SST and one-on-one human interaction has always been the point for the hotel industry; as human touch remains an aspect in the hotel industry that will never be replaced regardless of the level of technological advancement (Dzia-Uddin, Hashim & Isa, 2018). As a result, the primary goal of this study was to investigate customer perceptions of SST adoption in hotels, while the secondary goal was to investigate the factors that influence perceived and intention to use SST.

2 Literature Review

The degree to which a person believes that using a particular technology will improve job performance is referred to as perceived usefulness (Davis, 1989). Some customers or hotel guests may prefer Self-Service technologies (SST) because they are more convenient and less distracting. Kasavana (2008) discovered that customers who previously had less than satisfactory experiences such as long waiting lines, operational delays, and so on now prefer to interact using cutting-edge technologies such as SSTs. According to these studies, hotel guests believe SST will be useful in meeting their hotel service needs. This enables marketers to broaden their service offerings in their business (Kokkinou & Cranage, 2015). According to Cunningham, Young, and Gerlach (2009), the increased acceptance of newer SSTs has prompted more hotels to implement SSTs in order to improve service quality standards and operational efficiencies.

H1 – Perceived Usefulness have significant relationship towards intention to use SST

Hotel operators' use of SST has increased dramatically in recent years. However, it is critical for hotels to carefully consider and weigh the benefits and drawbacks of their operations and hotel guests prior to adoption and implementation (Meuter et al, 2000). Consumers' expectations regarding SST service encounters differ (Lee & Lyu, 2016). The decision to adopt and implement SST in hotels should consider the impact on hotel guests as technology consumers, as well as differences in consumer attitudes and behavioral intentions regarding the use of SST (Dabholkar & Bagozzi, 2002). Social cognitive theory (SCT) concludes that human beings are bounded by three specific interacting determinants, the personal factor, behavior, and environment or situation, in the context of behavioral interaction and intention (Bandura, 1986). Desire for interaction referred to the need to maintain human contact during the service delivery process (Curran & Meuter, 2005), more specifically the personalization of service from service provider to guests in a hotel setting. According to Dabholkar (1992), interpersonal interaction was one factor that influenced consumers' attitudes toward the use of SST in fast-food ordering systems. As a result, the majority of existing research on SCT has focused on behavioral factors, such as the relationship between consumers and the extent to which consumers interact with technology-oriented products and services (Dabholkar, 1996). Individual differences in consumer characteristics, according to Meuter et al (2005), will significantly influence the trial or usage of SST. The benefits of SST in terms of flexibility and time savings may positively influence interaction and intention to use the technologies. Even some situational factors, such as waiting times and time constraints, have been found to have a significant impact on SST use intentions and behavior (Chen, Yu, Yang, & Wei, 2018). However, the hotel industry that prioritizes human touch and interaction as a primary factor in service delivery will experience lower levels of enjoyment due to a lack of human interaction, particularly in resort environments (Oh & Jeong, 2009). According to Ko (2017), desire for interaction had a significant negative effect on intention to use the SST in a study conducted at hotels in Taiwan.

H2 – Desire for interaction have significant relationship towards intention to use SST

Technology is supposed to be convenient and dependable. Davis (1889) stated that the ease of use of a technology is expected to be hassle free for the user. Ease of use is more important than general and organizational user trust in developing trust relationships with technology (Ejdys, 2018). The software or system should be user-friendly and simple to use. This would include hotel staff and guests using the software while providing or receiving services in the hotel. According to Bilgihan et al. (2016), systems that are simple to use and do not put customers under pressure to complete tasks will result in a better cognitive experience. As a result, it is critical for hospitality service providers, particularly the hotel industry, to analyze and consider the importance of implementing SST in their business operations. The ease of use of a system indicates that the company understands, cares about, and respects its customers. (Egger et al. 2001)

H3 –Ease of Use have significant relationship towards Perceived Usefulness

Ease of use on the SST is regarded as main criteria for the functional of SST that supersedes the performance and reliance on service staff (Lu, Chou & Ling, 2009). The adoption of new technologies should be deemed as an enjoyment as expected by consumers (Curran et al, 2003); this intrinsic enjoyment derived from the ease and fun of usage being the extrinsic motivators would in return contributed to intention to use (Chang & Yang, 2008 and Rangarajan et al, 2007). Wang et al. (2013) find that customer's decision to continue SST usage is initially rationally driven, then emotionally driven, and finally becomes habitual. Ease of use may furnish a better performance on service delivery for service provider and greater extrinsic for consumers; however, it does not provide the opportunity for consumer to interact with service provider and desire for interaction may be interrupted (Ko, 2017).

H4 –Ease of Use have significant relationship towards Desire for interaction

The importance of security and privacy concerns on Self-Service Technology has been discussed in many studies. According to Alfred and Dwomoh (2017), the term "security" refers to the perceived level of safety against security and privacy threats, such as fraud, general safety, and loss of personal data. Due to this matter, some potential or existing users might have doubts about using the technology because of privacy concern. Having their details recorded may be one of the major reasoning concerns. Even Godwin (2001) reported that privacy and security concerns were found to be a major barrier in using technology, especially the internet. According to Agranoff (1991), information privacy is defined as the claim of individuals, groups, or institutions to determine when, and to what extent, information about them is communicated to others. Thus, the purpose of this study is to analyse and evaluate self-belief that the user has in using the system in updating their personal details.

H5 – Privacy has significant relationship towards Perceived Usefulness

Data security and privacy of personal information are critical issues as it concerns SST usage among the consumers (Phelps, D'Souza, & Nowak, 2001; Sheehan & Hoy, 2000). In a study conducted by Smith and Rowinski (2007), it revealed that 59% to 68% of hotel guests chose to use self-check-in kiosk at hotel in order to protect their privacy during registration process. As a result, desires for interaction with service staff declined while option for SST is of greater preference due to priority in protection of privacy on personal information among hotel guests (Phelps et al, 2001).

H6 – Privacy has significant relationship towards Desire for interaction

There are reasons to believe that more people are accepting the importance of technology. However, Blut et al. (2016) note that the various predictors of SST use should be examined jointly to gain a comprehensive understanding of user behaviour. In the hotel business, most customers may prefer to search and survey their preferred hotel and services using the available technology devices. According to Verne (2014), autonomy is about being able to make own choices. This will allow them to freely choose and decide their preferred hotel and services. Being able to understand the process and make own decision has shown a significant relation between user and its autonomy. The concept of autonomy (Reinders & White, 2016) in technology has allowed a more interactive implementation. Although some users might need help in using the technology due to various reason. According to Verne (2014) that needing and receiving help does not remove autonomy from a person.

H7 – Autonomy has significant relationship towards Perceived Usefulness

In context of autonomy that relevance to desire for interaction, self-control of consumers onto the transaction on SST is highly noticeable. According to Broniarczyk and Griffin (2014), Self-service technologies (SSTs) such as self-checkouts (SCOs) empower consumers by providing them with increasing choice freedom. In study conducted by Meuter et al. (2003), SST lifted the feeling of independence being an essential intrinsic benefit as consumers regarded service quality was with ability to better control the transaction on SST; a situation that bypassed the service provider. Oyedele and Simpson (2007) supported that ability of self-controlling on SST transaction, the autonomy preference of consumers likely to influence usage positively but negatively on desire to interact. An autonomous consumer is usually self-motivated to conduct and complete an activity without the control of others, to avoid self-undermining and social interaction.

H8 – Autonomy has significant relationship towards Desire for interaction

In hotel business, the SST interface may include several areas such as interactive voice respond, direct online connection and interactive kiosks. This may allow potential customer to listen and review the product or service offered by the hotel. According to (Mueter et al., 2000), SST technology enables customers to order, buy, and exchange

resources with the organization without any direct interaction with the employees. According to Narteh (2015), reliability is the ability to provide the required service accurately and dependably. Thus, the ability of the property to provide consistent service delivery will enhance the effectiveness of the self-service technology implementation. However, having the SST technology implemented in the hotel business, it is crucial to understand how the customer feel about the system. Perceived control and interface evaluation has seen to be the major factors in measuring effectiveness. The term perceived control may be described as a subjective assessment of control over a task in an environment, while interface evaluation refers to the judgments about the SST software based on experience with that technology (Zhu et al. 2007). Although the evaluation from every customer might be differ from another, it is important for the organization to take consideration in improving their customer service.

H9 – Effectiveness has significant relationship towards Perceived Usefulness

In hotel, a service delivery that could achieve the task goal and satisfaction of guests would deem as effective method implementation (Parasuraman et al., 2005). According to Ko (2017), the need of travellers in achieving high satisfactory service while in presence of different service delivery options; the SST may not be perceived as the most effective service delivery method as opposed to service from service staff. In addition, Oyedele & Simpson (2007) pointed out that non-readiness of self-efficacy among most of the guests may pose as potential hindrance for using SST; hence the desire for interaction with service staff or other service options would arise.

H10 – Effectiveness has significant relationship towards Desire for interaction

3 Methodology

3.1 Sampling and data collection

A self-completion questionnaire was used as the survey's instrument, which was a quantitative method. Self-completion surveys had the advantage of being a highly standardized measuring tool because the questions were always phrased the same way for all respondents (Sapsford, 2007). The survey's questions were all focused on customer perceptions in Malaysia, which were classified into two groups. Part one was designed on a nominal scale with a focus on the respondent's demographic profile, which comprised of six related factors that were major determinants of the questions asked, covering the characteristics that would achieve the specified objectives. Part two of the questionnaire in this study is used to measure seven (7) aspects of customer perception towards the adoption of self-service technologies at hotels. The seven dimensions are Ease of Use, Privacy, Autonomy, Effectiveness, Perceived Usefulness, Desire for Interaction, and Intention to use SSTs. An online survey, emails, and social media, as well as a purposive sample technique, were used to collect data. Purposive

sampling is a non-probability sampling approach that is regarded to be most effective when looking into a certain group of experts (Tongco,2007).

Partial Least Squares, a structural equation modelling technique that employs a principal-component-based estimate strategy, was used to examine the data (Vinzi et al., 2010: 48). PLS-SEM can estimate causal links among all latent constructs at the same time while dealing with measurement errors in the structural model (Hair et al, 2017). Furthermore, because it is explanatory in nature, PLS-SEM is the best fit for this investigation. Measurement models were examined individually before structural models were evaluated (Hair et al, 2017). To test the given hypotheses, SmartPLS 3 was used to conduct a partial least squares structural equation modelling (PLS-SEM) investigation. PLS-SEM has several advantages, including the ability to adapt to non-normal data and small sample sizes, which makes it ideal for exploratory research. Anderson and Gerbing (1988) examined a two-step analytical procedure, measurement, and structural models.

4 Findings

Table 1 contains all relevant information about the characteristics of the respondents. There were 208 total respondents, with 120 (57.7 percent) females and 88 (42.3 percent) males. Majority of the respondents having bachelor’s degree with 42.3%, followed by master’s or Doctorate (30.8%), diploma (23.1%) and ATPL (3.8%). Most responders were between the ages of 31 and 40. A high percentage of respondents (57.7%) were single, whereas around 38.5 percent were married. Furthermore, 104 (50%) respondents had used SST once to three times in hotels, and 46.2 percent of respondents had used SST at a grocery shop or retail location.

Table 1: Demographics characteristic

Characteristics	Frequency	Percentage (%)
Gender		
Female	120	57.7
Male	88	42.3
Education level		
ATPL	8	3.8
Bachelor’s degree	88	42.3
Diploma	48	23.1
Masters or Doctorate	64	30.8
Age		
21 - 30	24	11.5
31–40	144	69.2
41–50	32	15.4
Above 50	8	3.8
Social Status		
In relationship	8	3.8
Married	80	38.5
Single	120	57.7

Experience with SST at hotels		
1–3 times	104	50.0
10 or more times	16	7.7
4–6 times	32	15.4
7–9 times	8	3.8
Never	48	23.1
Use of SST at grocery store/retail		
Every time I go there	8	3.8
Never	8	3.8
Occasionally	96	46.2
Often	24	11.5
Seldom	72	34.6

Following data gathering, statistical analysis was utilized to evaluate the proposed model's hypothesized link. This study's findings have important practical and managerial implications for determining how customers feel about utilizing SSTs.

4.1 Measurement Model Analysis

To demonstrate the measurement model's reliability and validity, internal consistency reliability was determined by measuring composite reliability, outer loading, convergent validity, and discriminant validity (Hair et al., 2011; Sekaran, 2006). Internal consistency constructs typically have highly correlated indicators. Table 2 revealed that all constructs have exceptional inter-item consistency, with Cronbach's alpha values ranging from 0.718 to 0.962. In adjunct, composite reliability (CR) also indicated satisfactory and recorded at between 0.848 and 0.975. According to Hair et al. (2017), to demonstrate that a latent variable can explain the variance of its indicators, the AVE should be at least 0.5 and the outer loadings should be greater than 0.70. Based on the table, AVE verified at satisfactory level of more than 0.5, which ranging between 0.741 and 0.951. Outer loadings for all things exceeded the criterion of 0.7, as shown in Table 2, and only a few items that did not match the benchmark were deleted from the construct.

Table 2: The measurement model results.

Constructs	Items	Loading	AVE	Cronbach's Alpha	CR
Intention to use SST (I)	I1	0.976	0.741	0.718	0.848
	I2	0.728			
Desire for interaction (DI)	DI1	0.854	0.799	0.881	0.923
	DI2	0.892			
	DI3	0.934			
Usefulness (U)	U1	0.942	0.828	0.896	0.935
	U2	0.903			
	U3	0.883			
Ease of use (EU)	EU2	0.972	0.951	0.948	0.975
	EU3	0.978			
Privacy (P)	P1	0.895	0.898	0.962	0.972
	P2	0.975			
	P3	0.970			

	P4	0.949			
Autonomy (A)	A1	0.901	0.771	0.905	0.903
	A2	0.774			
	A3	0.960			
	A4	0.866			
Effectiveness (E)	E1	0.978	0.893	0.960	0.971
	E2	0.933			
	E3	0.964			
	E4	0.904			

To assess discriminant validity, the Fornell and Larcker (1981) criterion and the cross-loading criterion were used. The square root of each construct's AVE should be greater than the construct's highest correlation with every other construct in the model, according to the Fornell and Larcker criterion. The results of the Fornell and Larcker criterion assessment were shown in Table 3 with the square root of the AVE of the reflective constructs on the diagonal and the correlations between the constructs in the lower left triangle.

Table 3: Discriminant validity – Fornell-Larcker criterion

	A	DI	EU	E	I	U	P
Autonomy (A)	0.878						
Desire for Interaction (DI)	0.056	0.894					
Ease of Use (EU)	0.527	-0.139	0.975				
Effectiveness (E)	0.672	0.131	0.427	0.945			
Intention (I)	0.184	-0.097	0.355	-0.036	0.861		
Perceived Usefulness (U)	0.322	-0.018	0.705	0.481	0.356	0.910	
Privacy (P)	0.601	0.348	0.664	0.669	0.065	0.725	0.948

Note: Autonomy (A), Desire for Interaction (DI), Ease of Use (EU), Effectiveness (E), Intention (I), Perceived Usefulness (U), Privacy (P)

4.2 Structural Model Analysis

PLS generates the path coefficients for the modelled relationships between the constructs. The bootstrap approach was used to determine the significance of these coefficients, which provided the t-values for each path estimate. The predictive power R^2 and predictive relevance were used to evaluate the model's ability to predict the outcome variables (Hair Jr et al., 2014). According to Chin (1998), 0.67, 0.33 and 0.19 are classified as substantial, moderate, and weak level of R-Square, respectively. The model explains 13.5% of the variance in the intention to use SSTs, 67.4% in perceived usefulness, and 38.9% in desire for interaction. Figure 2 and Table 3 presents the results of the PLS analysis on the structural model along with the path estimates and t-values.

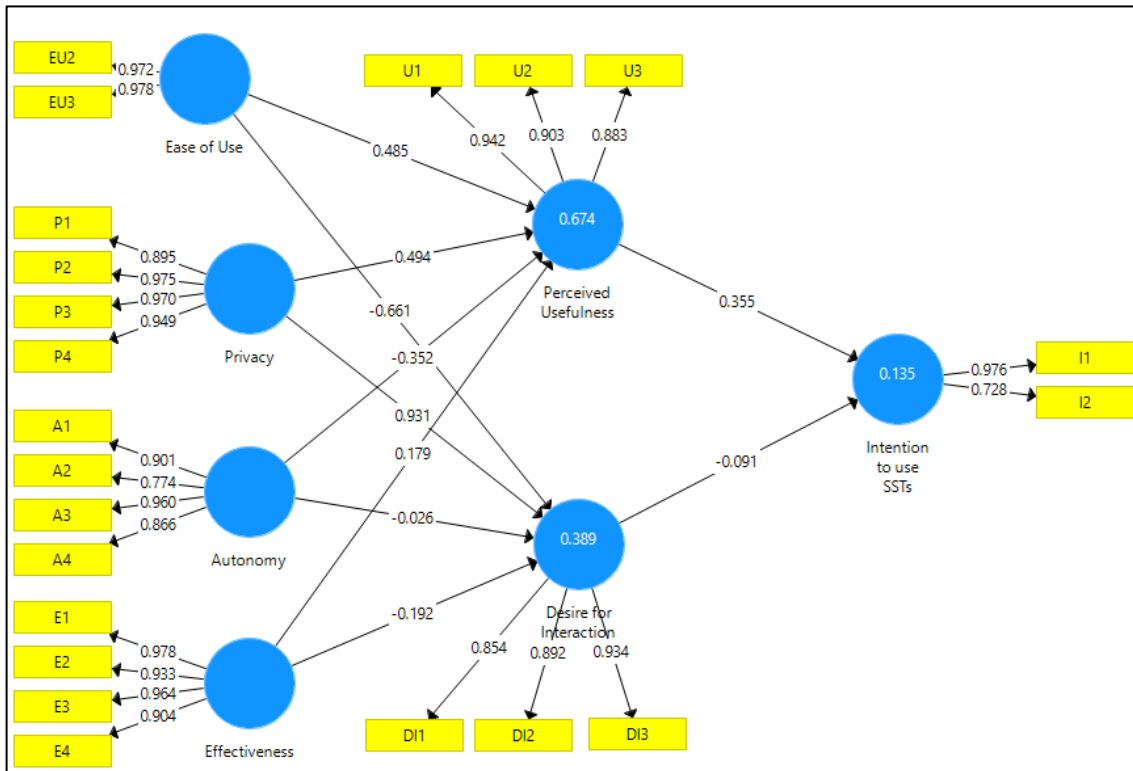


Figure 1: PLS Algorithm Path Model

Except for H2 and H8, the eight research hypotheses are supported in Table 4. The T-statistics value, which should be greater than 1.96, is the threshold for accepting or rejecting any hypothesis. The relationship between perceived usefulness and intention to use SSTs is significant as expected in H1. Based on the H1 in this study obtained the results of the T-statistic of 5.435, the Path coefficient(β) value of 0.355, and the P values value of 0.000. The T-statistic value is more than the T-table value 1.96 and the P values value shows less than 0.05, this result shows that Perceived Usefulness has significant effect on intention to use SSTs. Hypothesis 1 is empirically supported by this outcome. The rising adoption of newer SSTs, according to Cunningham et al. (2009), has

encouraged more hotels to implement SSTs for improving service quality standards and operating efficiencies.

The results for Hypotheses 3, 5 and 9 show that the path coefficients of Ease of Use, Privacy and Effectiveness are 0.485, 0.494 and 0.179, respectively. Perceived Usefulness is positively and significantly affected by Ease of Use, Privacy and Effectiveness. Among them, Privacy has the greatest impact on Perceived Usefulness, followed by value Ease of Use, and finally, Effectiveness. Privacy and security issues, according to Godwin (2001), are a key obstacle to using technology, particularly the internet. Information privacy, according to Agranoff (1991), is the right of people, groups, or institutions to control when and how information about them is shared with others.

Meanwhile, Autonomy is negative and significantly affected on Perceived Usefulness with Path coefficient(β) value of -0.352 and the P values value of 0.000. Hypothesis 7 is empirically supported by this result. In the hotel industry, most clients may opt to use accessible technology gadgets to search for and evaluate their desired hotel and services. Autonomy, according to Verne (2014), is the ability to make one's own decisions. This will allow them to choose and choose their favourite hotel and services at their leisure. The ability to comprehend the process and make independent decisions has revealed a strong link between the user and their autonomy.

Moreover, it is found that the relationship between Desire for Interaction and Intention to use SSTs ($\beta=-0.091$; t -value=1.089; $p=.276$) is not significant, providing no support for H2. Surprisingly, this finding is in dispute with Meuter et al. (2005). Individual differences in consumer characteristics will significantly influence the trial or use of SST. The benefits of SST in terms of flexibility and time savings may help to increase interaction and desire to use the technologies. However, a hotel sector that prioritises human touch and connection as a key component of service delivery will have lower levels of satisfaction due to a lack of human engagement, particularly in resort settings (Oh & Jeong, 2009).

Additionally, Autonomy has no effect on Desire for Interaction, lending no support for H8. According to Oyedele and Simpson (2007), the ability of self-control on SST transactions is likely to influence usage positively but negatively on desire to interact. Contradict to a study by Meuter et al. (2003), SST increased consumers' feelings of independence as an essential intrinsic advantage, as consumers associated service quality with the ability to better regulate transactions on SST; a circumstance that bypassed the service provider.

H4 which is relationship between Ease of Use and Desire for Interaction ($\beta=-0.661$; t value= 7.372; $p=.000$) is also supported. Ease of use may provide a better service delivery performance for service providers and more pleasure for consumers; yet, it does not provide the possibility for consumers to communicate with service providers, and this desire may be interrupted (Ko, 2017). Likewise, proposed relation between Effectiveness and Desire for Interaction ($\beta=-0.192$; t value= 2.171; $p=.0300$) is also significant, thus H10 is supported. In a hotel, an effective technique implementation would be one that could meet the job goal while also satisfying the guests (Parasuraman,

Zeithaml & Malhortra, 2005). Lastly, findings of SEM analysis support H6 indicating a strong and positive direct relationship ($\beta=0.931$; $t\text{-value}=10.969$; $p=.000$) between Privacy and Desire for Interaction. When it comes to SST usage among consumers, data security and privacy of personal information are critical issues (Phelps, D'Souza, & Nowak, 2001; Sheehan & Hoy, 2000). According to Smith and Rowinski (2007), most hotel visitors prefer to use the hotel's self-check-in kiosk to safeguard their privacy during the registration process. As a result of the importance of protecting hotel guests' personal information, desires for interaction with service employees have decreased, while the option for SST has increased in popularity (Phelps et al., 2001). A summarized overview of these findings is presented in Table 4.

Table 4: Summary of hypotheses testing results for direct effect.

		Path coefficient	T Statistics	P Values	Decision
H1	Perceived Usefulness -> Intention to use SSTs	0.355	5.435	0.000	Supported
H2	Desire for Interaction -> Intention to use SSTs	-0.091	1.089	0.276	Not Supported
H3	Ease of Use -> Perceived Usefulness	0.485	7.099	0.000	Supported
H4	Ease of Use -> Desire for Interaction	-0.661	7.372	0.000	Supported
H5	Privacy -> Perceived Usefulness	0.494	6.286	0.000	Supported
H6	Privacy -> Desire for Interaction	0.931	10.969	0.000	Supported
H7	Autonomy -> Perceived Usefulness	-0.352	5.411	0.000	Supported
H8	Autonomy -> Desire for Interaction	-0.026	0.185	0.854	Not Supported
H9	Effectiveness -> Perceived Usefulness	0.179	3.3	0.001	Supported
H10	Effectiveness -> Desire for Interaction	-0.192	2.171	0.030	Supported

5 Conclusion

This paper employs statistical analysis of survey data to explore the customer perception on the adoption of self-service technologies at hotels and the factors influence perceived and intention to used SST.

The collected data is used to discover and measure seven aspects of customer perception towards SST, focusing on Perceived Usefulness, Desire for Interaction, Ease of Use, Privacy, Autonomy, Effectiveness, and Intention to use SSTs. Ten hypothetical situations were proposed in this study.

The results of the statistical analysis demonstrated that most of the proposed hypotheses were substantiated. However, there are two hypotheses (Desire for

interaction on intention to use SST and Autonomy on Desire for Interaction) were not supported and significant.

The literature review and analysis of the studies were conducted to contribute to research into consumer perception towards the adoption of self-service technologies in the hotel business. The consumer perception as well as to equip service providers with an evaluation and measurement tool will be able to assist the hotelier in improving their facilities and customer self-service experience.

While perceived usefulness is a critical factor in explaining users' intention to use SST, it is important to pay attention to other factors such as privacy and autonomy of users when using self-service technology (SST). Even, Godwin (2001) revealed that privacy and security concerns were found to be a major barrier in using technology. Thus, it is important for the organization, especially in the hotel industry, to understand how customers feel about the system.

Although effectiveness, ease of use and interaction are the main reasons for the adoption of self-service technology (SST), intention to use may also appear to be one of the main concerns for SST. The acceptance and belief by the users in the system to attain their service needs, will encourage organizations like the hotel industry to implement SST in their business operations.

Even though various studies have been done on SSTs, it is important to understand the factors that influence perception and intention to use SST. Understanding these factors will help the organization especially the hotel industry, to gain more insight on customer perception, adoption, and improvement of SST innovations in their hotel business.

This study provides an inventory of research on consumer perception towards SST implementation and the directions for future research. The potential findings can support assisting the hotel industry in improving their facilities and services and introducing new technologies in their business operations. At the same time, understanding the technologies better will help to provide a basis for improving consumer service quality and experience. In future, additional research study could examine the implication of SST that may leads to customer loyalty, absence of human contact and other issues that an organization might encounter in future.

6 About the author

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7 References

- Agranoff, MH 1991, 'Controlling the threat to personal privacy', *Journal of Information Systems Management*, Summer, pp. 48-52.
- Alfred, O., & Dwomoh, H. A. (2017). Investigating Customer Satisfaction Levels with Self Service Technology Within the Banking Sector:(A Case Study of Automated Teller Machines (ATMs). *American Journal of Operations Management and Information Systems*, 2(4), 97-104.
- Ahmad, R., & Scott, N. (2019). Technology innovations towards reducing hospitality human resource costs in Langkawi, Malaysia. *Tourism Review*.
- Bandura, A. (1986), *Social Foundations of Thought and Action: A Social Cognitive Theory*, Prentice-Hall, Englewood Cliffs, NJ.
- Beatson A, Coote L, Drennan J. (2006) Self-service technology, satisfaction and consumer retention. *Proc 35th EMAC Conf*; p. 1-4.
- Bitner M. (2001) Services and technology: opportunities and paradoxes. *Managing Service Quality*;11(6):375-9.
- Bilgihan, A., Kandampully, J. & Zhang, T.C. (2016) 'Towards a unified customer experience in online shopping environments'. *International Journal of Quality and Services Sciences*, Vol. 8 No. 1, pp. 102-119.
- Blut, M., Wang, C., & Schoefer, K. (2016). Factors Influencing the Acceptance of Self-Service Technologies: A Meta-Analysis. *Journal of Service Research*, 19(4), 396-416.
- Broniarczyk, S. M., & Griffin, J. G. (2014). Decision Difficulty in the Age of Consumer Empowerment. *Journal of Consumer Psychology*, 24(4), 608-625.
- Chang H.L., Yang C. (2008). Do airline self-service check-in kiosks meet the needs of passengers? *Tourism Management*, 29(5), 980-993.
- Chen, Y., Yu, J., Yang, S., & Wei, J. (2018). Consumer's intention to use self-service parcel delivery service in online retailing: An empirical study. *Internet Research*, 28(2), 500-519. <https://doi.org/10.1108/IntR-11-2016-0334>
- Chin, W. W. (1998). The partial least squares approach for structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295-336). Lawrence Erlbaum Associates Publishers.

- Cunningham, L. F., Young, C. E., & Gerlach, J. (2009). A comparison of consumer views of traditional services and self-service technologies. *Journal of Services Marketing*, 23(1), 11–23
- Curran J, Meuter M, Surprenant C. (2003) Intentions to use self-service technologies: a confluence of multiple attitudes. *Journal of Service Research*;5(3):209–24.
- Curran J, Meuter M. (2005) Self-service technology adoption: comparing three technologies. *Journal of Services Marketing* ;19(2):103–13.
- Davis, F.D. (1989) 'Perceived usefulness, perceived ease of use, and user acceptance of information technology', *MIS Quarterly*, Vol. 13 No. 3, pp. 319-40.
- Dabholkar, P.A. (1992), "Consumer evaluation in new technology-based self-service options: an investigation of alternative models of service quality", *International Journal of Research in Marketing*, Vol. 13 No. 1, pp. 29-51.
- Dabholkar, P.A. (1996), "Consumer evaluations of new technology-based self-service options: an investigation of alternative models of service quality", *International Journal of Research in Marketing*, Vol. 13, pp. 29-51.
- Dabholkar, P.A. and Bagozzi, R.P. (2002), "An attitudinal model of technology-based self-service: moderating effects of consumer traits and situational factors", *Journal of the Academy of Marketing Science*, Vol. 30 No. 3, pp. 184-201.
- Egger, G., Donovan, R.J., Billie, G-C, Fiona, B., & Swinburn, B. (2001) 'Developing national physical activity guidelines for Australians', *Australian and New Zealand Journal of Health*, Vol. 25 No. 6, pp. 561-563.
- Ejdys, J. (2018). Building technology trust in ICT application at a university. *International Journal of Emerging Markets*, 13(5), 980-997.
- F. Hair Jr, J., Sarstedt, M., Hopkins, L. and G. Kuppelwieser, V. (2014), "Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research", *European Business Review*, Vol. 26 No. 2, pp. 106-121. <https://doi.org/10.1108/EBR-10-2013-0128>
- Godwin, JU 2001, 'Privacy and Security concerns as a major barrier for e-commerce: a survey study', *Information Management & Computer Security*, vol. 9, no. 4, pp. 165-174
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152.
- Hair, J. F., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management & Data Systems*, 117(3), 442–458.
- Hirschmann, R. (2021). <https://www.statista.com/statistics/1004729/number-of-hotels-malaysia/>
- Ivanov, S. H., & Webster, C. (2017). Adoption of robots, artificial intelligence and service automation by travel, tourism and hospitality companies—a cost-benefit analysis. *Artificial Intelligence and Service Automation by Travel, Tourism and Hospitality Companies—A Cost-Benefit Analysis*.
- Jalil, N. A., & Yeik, K. K. (2019, November). Systems, design and technologies anxieties towards use of self-service checkout. In *Proceedings of the 2019 3rd International Conference on Education and E-Learning* (pp. 122-127).
- Kasavana, M. L. (2008). The convergence of self-service technology. *Hospitality Upgrade* (pp. 122–128). Spring
- Kincaid C, Baloglu S. (2005) An exploratory study on the impact of self-service technology on restaurant operations. *Journal of Foodservice Business Research*;8(3):55–65.

- Ko, C. H. (2017). Exploring how hotel guests choose self-service technologies over service staff. *International Journal of Organizational Innovation*, 9(3), 16-27.
- Kokkinou, A., & Cranage, D. A. (2015). Why wait? Impact of waiting lines on self-service technology use. *International Journal of Contemporary Hospitality Management*, 27(6), 1181–1197.
- Lee, H. J., & Lyu, J. (2016). Personal values as determinants of intentions to use self-service technology in retailing. *Computers in Human Behavior*, 60, 322–332
- Liu, C., & Hung, K. (2021). Improved or decreased? Customer experience with self-service technology versus human service in hotels in China. *Journal of Hospitality Marketing & Management*, 1-29.
- Liu, C., Hung, K., Wang, D., & Wang, S. (2020). Determinants of self-service technology adoption and implementation in hotels: The case of China. *Journal of Hospitality Marketing & Management*, 29(6), 636-661.
- Lu J.L., Chou H.Y., Ling P.C., (2009). Investigating passengers' intentions to use technology-based self checkin services. *Transportation Research Part E: Logistics and Transportation Review*, 45(2), 345–56.
- Meuter ML, Bitner MJ.(1998) Self-service technologies: extending service frameworks and identifying issues for research. In: Grewal D, Pechmann C, editors. *AMA Winter Educators' Conference Proceedings*, 9. Chicago, IL: American Marketing Association;. p. 12–9
- Meuter, M.L., Ostrom, A.L., Roundtree, R.I. and Bitner, M.J. (2000), "Self-service technologies: understanding customer satisfaction with technology-based service encounters", *Journal of Marketing*, Vol. 64 No. 3, pp. 50-64.
- Meuter ML, Ostrom AL, Bitner MJ, Roundtree R. (2003) The influence of technology anxiety on consumer use and experiences. *Journal of Business Research*;56:899–906.
- Narteh, B. (2015). Perceived service quality and satisfaction of self-service technology: The case of automated teller machines. *International Journal of Quality & Reliability Management*, 32(4), 361-380.
- Oh, H., & Jeong, M. (2009). A self-service technology adoption model in the resort hotel environment.
- Oyedele, A., & Simpson, P. M. (2007). An empirical investigation of consumer control factors on intention to use selected self-service technologies. *International Journal of Service Industry Management*.
- Ong, L. I. (2010). Can self service technologies work in the hotel industry in Singapore? A conceptual framework for adopting self service technology.
- Parasuraman A, Zeithaml V.A., Malhortra A. (2005). E-S-QUAL: a multiple-item scale for assessing electronic service quality. *Journal of Service Research*, 7(3), 213–33.
- Phelps J.E., D'Souza G, Nowak G.J., (2001). Antecedents and consequences of consumer privacy concerns: an empirical investigation. *Journal of Interactive Marketing*, 15(4), 2-17.
- Rangarajan B, 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.
- Riebeck M, Stark A, Modsching M, Kawalek J. (2008) Studying the user acceptance of a mobile information system for tourists in the field. *Information Technology & Tourism*;10: 189–99.
- Rust RT, Espinoza F. (2006) How technology advances influence business research and marketing strategy. *Journal of Business Research*;59:1072–8.
- Ramayah T, Cheah J, Chuah F, Ting H, Memon M A. *Partial least squares structural equation modeling using SmartPLS 3.0-an updated and practical guide to statistical analysis*. Kuala Lumpur, Malaysia: Pearson. 2018.

- Reinders, H., & White, C. (2016). 20 years of autonomy and technology: How far have we come and where to next?. *Language Learning & Technology*, 20(2), 143-154.
- Sheehan K.B., Hoy M.G., (2000). Dimensions of privacy concern among online consumers. *Journal of Public Policy & Marketing*, 19(1), 62–73.
- Smith J, Rowinski M. (2007). IBM unveils initiative to help companies improve service to consumers. IBM Self-Service Survey Results.
- Stockdale R. (2007) Managing customer relationships in the self-service environment of e-tourism. *Journal of Vacation Marketing*;13(3):205–19.
- Verne, G. (2014). Two faces of autonomy. Learning from non-users of an e-service. *Systems, Signs and Actions*, 8(1), 6-24.
- Wang, C., Harris, J., & Patterson, P. (2013). The Roles of Habit, Self-Efficacy, and Satisfaction in Driving Continued Use of Self-Service Technologies: A Longitudinal Study. *Journal of Service Research*, 16(3), 400–414.
- 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