An Empirical Investigation of the Determinants of Consumer Intention to Adopt Self-Service Technologies in the Malaysian Hospitality Sector

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ABSTRACT

The rapid adoption of self-service technology (SST) in the hospitality industry offers efficiency and convenience, yet many providers struggle to understand the key factors influencing consumer acceptance, particularly in Malaysia's fast-growing tourism market. Without this understanding, SST investments may fail to achieve desired usage levels and customer satisfaction. This study investigates the determinants of consumers' intention to adopt SST in Malaysia's hospitality industry, focusing on perceived ease of use, perceived reliability, technology readiness, and perceived interactivity. A quantitative survey was conducted with 392 respondents, and data were analyzed using descriptive statistics, Pearson correlation, and multiple regression. Findings reveal that technology readiness and interactivity are the strongest predictors of SST adoption, followed by ease of use and reliability. The results suggest that user-friendly, reliable, and interactive systems increase adoption likelihood, improving customer satisfaction and loyalty. The study highlights the importance for hospitality providers to align SST features with customer expectations to optimize service efficiency. Practical implications include prioritizing technology training, enhancing system reliability, and integrating interactive features to increase user engagement. This research contributes to the literature by integrating Technology Acceptance Model constructs with technology readiness in the hospitality context, offering both theoretical insights and practical guidance for industry stakeholders.

Keywords: Self-service technology; Hospitality industry; Technology readiness; Perceived ease of use; Perceived reliability; Perceived interactivity

INTRODUCTION

The hospitality industry is rapidly adopting self-service technologies (SSTs) to improve efficiency, reduce costs, and enhance customer satisfaction by minimizing the need for direct staff interaction (Meuter et al., 2000). In Malaysia, this shift has become particularly important given the sector's strong growth, welcoming 22.5 million international visitors between January and November 2025, a 26% increase from the previous year. Increasing competition among hotels and restaurants has driven operators to implement technologies such as mobile booking apps, check-in kiosks, and self-ordering systems to meet evolving customer expectations.

Understanding the factors that influence consumers' intention to adopt SSTs remains a critical challenge. The Technology Acceptance Model (TAM) highlights the importance of perceived ease of use and perceived usefulness in shaping technology adoption (Davis, 1989). Similarly, the Theory of Planned Behavior (TPB) emphasizes how attitudes, subjective norms, and perceived behavioral control influence behavioral intention (Ajzen, 1991). Complementing these, the Unified Theory of Acceptance and Use of Technology (UTAUT) stresses the role of performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003), providing a more comprehensive framework for explaining consumer behavior toward SSTs.

Drawing on these theories, this study examines factors such as perceived ease of use, perceived reliability, technology readiness, and perceived interactivity as determinants of consumers' intention to adopt SSTs in Malaysia's hospitality industry. By integrating established adoption models with consumer readiness and personality factors, the research offers a deeper understanding of how technology-driven services are shaping customer experiences in the hospitality sector.

LITERATURE REVIEW

Self-service Technology in Hospitality Industry

Self-service technologies (SSTs) in the hospitality industry encompass a wide range of tools, from airline ticketing machines, automatic teller machines, and computer-based booking services (Lee & Allaway, 2002) to more recent innovations such as train ticket vending machines, hotel booking mobile applications (e.g., Trivago, Agoda, Booking.com), navigation apps like WAZE, hotel check-in kiosks, self-service food ordering systems, and information terminals in public spaces. These examples illustrate the perceived ease of use (PEOU) component of the Technology Acceptance Model (TAM), defined as the degree to which a person believes that using a system would be free from effort (Davis, 1989). While previous research has examined factors such as perceived ease of use, reliability, technology readiness, and interactivity in SST adoption, limited attention has been given to consumer personality traits as potential influencers. Furthermore, earlier studies often focused on a single technology (Dabholkar, 1992, 1996) or low-technology applications such as vending machines and early ATMs (Bateson, 1985; Langeard et al., 1981), without considering the broader spectrum of modern SSTs. This study addresses these gaps by exploring the full range of SSTs in the hospitality and tourism sectors, from well-established to emerging innovations, and examining additional factors that may influence consumer adoption.

Perceived Ease of Use

Perceived ease of use, a core TAM construct, refers to the degree to which an individual believes that using a system would be free of effort (Davis, 1989). In hospitality, SSTs that are simple, intuitive, and require minimal learning encourage adoption (Curran et al., 2003). Features such as mobile check-in and automated booking systems reduce waiting times and empower customers to manage services independently (Lin & Hsieh, 2006). According to Lim and Hsieh (2006), most customers favour SSTs that provide simple interfaces, strong direction and help to facilitate their switch from traditional services to SSTs. Other research concludes that perceived ease of use such as complexity of technology and enjoyment of using SST significantly influence customer acceptance to use SST (Sufian, Yong & Zamri, 2025).

Perceived Reliability

Reliability is the ability of a system to perform consistently and meet user expectations (Jeong & Lambert, 2001). In SST adoption, reliability fosters trust and repeat usage. Reliable SSTs create positive first impressions, enhance service quality (Berry et al., 1994), and support service guarantees. A dependable and user-friendly booking platform, for example, can influence purchasing decisions and foster loyalty through repeat business and positive word-of-mouth. In hospitality, where services are intangible, paid for in advance, and consumed upon delivery, consistency is essential (Berry, Parasuraman, & Zeithaml, 1994; Zeithaml, Bitner, & Gremler, 2009). Service guarantees and service blueprints help ensure reliability by setting clear standards, identifying potential failure points, and equipping staff with resources to maintain quality (Hogreve & Gremler, 2009). Consequently, higher perceived reliability in SST not only enhances satisfaction but also significantly increases consumers' intention to adopt such technologies.

Technology Readiness

Technology readiness (TR) refers to an individual's tendency to embrace and use new technologies to achieve goals in personal and professional contexts (Parasuraman, 2000). Customers with high TR are more likely to value and adopt technology-enabled services, positively influencing their attitudes and behaviors toward SST (Abdullah, Radzi, Jamaluddin, & Patah, 2010; Lin, Shih, & Sher, 2007). In hospitality, hotels have leveraged TR by offering innovations such as online reservations, mobile check-in/out, wireless internet, and multi-channel

SST platforms to enhance service convenience (Law & Jogaratnam, 2005; Grewal & Levy, 2009). By aligning services with customers' technological capabilities, providers can deliver experiences that exceed expectations, thereby increasing satisfaction and strengthening the intention to adopt SST.

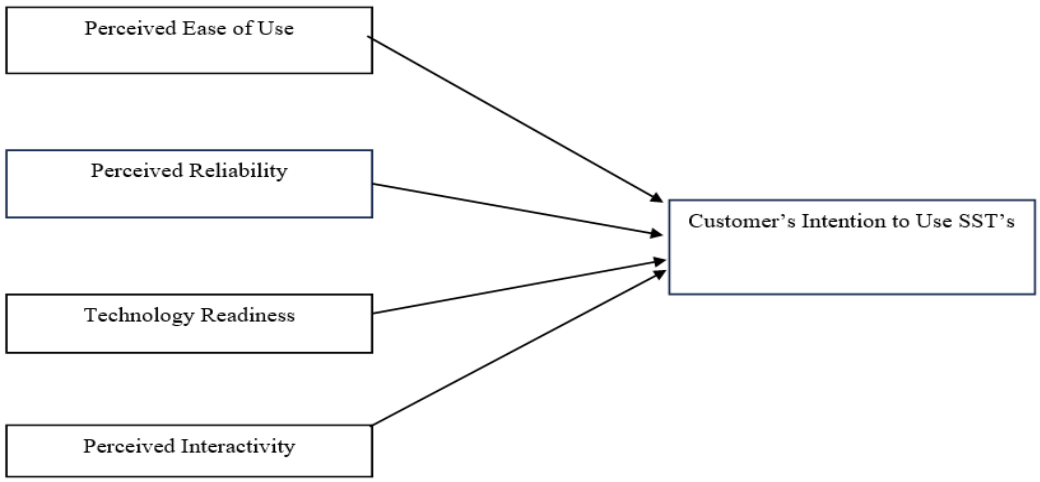
Perceived Interactivity

Perceived interactivity refers to the extent to which users can influence and engage with a system's content (Steuer, 1995), enabling two-way communication that enhances user control, convenience, and engagement (Collier & Kimes, 2003). In SST, interactivity can take the form of personalized recommendations, real-time navigation, or tailored service options, which not only help customers find what they need but also create cross-selling opportunities and foster loyalty (Schafer, 1999; Abdullah, Jayaraman, Kamal, & Md Nor, 2016). In hospitality, interactive mobile applications allow guests to book rooms, access information, and explore nearby services with ease, replacing many tasks once handled by staff (Lema, 2009). Such interactivity improves service quality and user satisfaction, ultimately increasing positive word-of-mouth and the intention to adopt SST (Lin & Hsieh, 2006).

CONCEPTUAL FRAMEWORK

Drawing from the Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and Unified Theory of Acceptance and Use of Technology (UTAUT), this study proposes a conceptual framework that examines the influence of perceived ease of use, perceived reliability, technology readiness, and perceived interactivity on consumers' intention to adopt self-service technologies (SSTs) in Malaysia's hospitality industry. Perceived ease of use, derived from TAM, suggests that technologies that are simple and effortless to operate increase the likelihood of adoption, while perceived reliability emphasizes the importance of trust and consistency in shaping consumer confidence in SSTs. Technology readiness, based on Parasuraman's (2000) construct, highlights individual predispositions toward embracing innovations, reflecting consumers' willingness to engage with technology-enabled services. Meanwhile, perceived interactivity captures the extent of two-way engagement and control that fosters satisfaction and loyalty, further motivating adoption. By integrating technology acceptance constructs with consumer-centric factors, the framework offers a holistic lens to understand SST adoption in the hospitality context, bridging gaps in prior studies that often focused narrowly on single technologies or limited variables.

Figure 1: Conceptual framework of the study



METHOD

A quantitative research design was employed, using a structured questionnaire distributed to 392 Malaysian hospitality customers. A pilot test with 30 participants ensured instrument reliability. Cronbach's alpha values for all constructs exceeded 0.80, indicating high internal consistency. Data analysis involved descriptive statistics, Pearson correlation, and multiple regression to examine relationships between independent variables

(perceived ease of use, perceived reliability, technology readiness, perceived interactivity) and the dependent variable (intention to use SST).

RESULTS AND DISCUSSION

Reliability Analysis

Table 1: Cronbach's Alpha

Variable	Cronbach's Alpha	Number of Items
Perceived Ease of Use	0.871	4
Perceived Reliability	0.801	4
Technology Readiness	0.826	4
Perceived Interactivity	0.846	4
Customer's Intention to Use SST's	0.874	4
Overall	0.841	20

The reliability analysis of the five constructs influencing SST adoption in the hotel sector demonstrates strong internal consistency across all measures. Perceived ease of use recorded the highest Cronbach's Alpha (0.871), indicating that respondents consistently associated the items with the simplicity of SST use—a key determinant in technology adoption. Perceived reliability (0.801) confirmed that the items effectively captured consumers' trust in SSTs to deliver consistent performance, an essential factor in hospitality services. Technology readiness achieved an Alpha of 0.826, reflecting consistent responses on consumers' willingness and preparedness to embrace new technologies. Perceived interactivity scored 0.846, showing strong alignment among items measuring user engagement and control in SST use. These results validate the measurement instruments for each construct, supporting their suitability for assessing factors that shape consumers' intention to adopt SSTs in the hospitality industry.

Multiple Regression Analysis

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.822	0.676	0.673	0.49420

1. Predictors: (Consult), Perceived Ease of Use, Perceived Reliability, Technology Readiness, Perceived Interactivity
2. Dependent Variable: Customer's Intention to Use SSTs

(**Source:** SPSS Output)

The R-value of 0.822 from the regression analysis shows that there is a substantial correlation between the independent and dependent variables. This indicates that a sizable amount of the variance in the dependent variable can be explained by the independent variables in the model. The model explains roughly 67.6% of the variance in the dependent variable, according to the R Square value of 0.676. This is a comparatively high percentage, indicating that a significant portion of the data variability is captured by the model. The model cannot

account for the remaining 32.4% of the variance, which is common for data from the actual world.

Coefficient

Table 3: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	1	Sig.
	B	Std. Error	Beta		
(Constant)	0.269	0.133	sss	2.028	0.043
UAIV	0.199	0.048	0.194	4.124	<0.001
BIV	0.129	0.046	0.130	2.790	0.006
CIV	0.388	0.054	0.379	7.231	<0.001
DIV	0.214	0.052	0.208	4.085	<0.001

Dependent Variable: Customer's Intention to Use SSTs

Perceived Ease of Use (PEUAIV), Perceived Reliability (PRBIV), Technology Readiness (PRCIV), and Perceived Interactivity (PIDIV) are the four independent factors that have a significant impact on customers' intention to use SSTs (DV), according to the results of the regression analysis. For instance, the Unstandardized Coefficients (B) show that, when all other factors are held constant, a one-unit increase in Perceived Ease of Use (PEUAIV) results in a 0.199-unit increase in the intention to use SSTs. With the highest Standardized Coefficient (Beta) of 0.379, Technology Readiness (PRCIV) has the greatest influence on customers' intention to use SSTs among the predictors. Accordingly, PRCIV appears to be the most important predictor, with Perceived Reliability (PRBIV), Perceived Ease of Use (PEUAIV), and Perceived Interactivity (PIDIV) following.

The t-values and Sig. values further support the statistical significance of these predictors. Every predictor contributes significantly to the model, as their p-values are significantly below 0.05. These factors considerably impact customers' intention to use SSTs, as evidenced by the comparatively high t-values, which show that the coefficients are significantly different from zero. These findings highlight how crucial Perceived Interactivity (PIDIV) and Technology Readiness (PRCIV) are in influencing how customers use self-service technologies.

Implication

This study provides significant theoretical contributions by extending the Technology Acceptance Model (TAM) with the inclusion of technology readiness and perceived interactivity in the context of Malaysia's hospitality industry. While TAM has traditionally emphasized perceived ease of use and usefulness, the findings reveal that consumers' psychological readiness and demand for engaging, interactive features are stronger determinants of SST adoption. This highlights the importance of incorporating individual traits into technology acceptance models, particularly in developing markets where cultural and technological contexts differ from those in Western economies.

From a practical perspective, the results suggest that hospitality providers must focus on designing self-service technologies that are user-friendly, reliable, and interactive. Prioritizing interactive features such as personalized recommendations, gamified elements, or real-time support can significantly enhance user engagement and adoption. Furthermore, as technology readiness emerged as the strongest predictor, providers should invest in initiatives that improve consumer confidence, such as tutorials, training, or staff-assisted guidance for first-time users. Such measures will not only reduce hesitation but also ensure smooth integration of SST into customer experiences.

At the managerial level, the findings emphasize the need for strategic resource allocation and customer segmentation. Managers should channel investments towards enhancing interactivity and readiness-building programs rather than solely focusing on technical infrastructure. By tailoring services to different customer groups offering fully automated systems for tech-savvy travelers and hybrid options for less confident users hospitality providers can foster inclusivity and satisfaction. Ultimately, aligning SST features with consumer expectations strengthens brand reputation, drives customer loyalty, and positions providers competitively in Malaysia's rapidly growing tourism market.

CONCLUSION

In conclusion, this study provides valuable insights into the factors affecting customers' intention to adopt self-service technologies (SSTs) in the hospitality sector. Drawing on the Technology Acceptance Model (TAM), the analysis reveals that perceived ease of use, perceived reliability, technology readiness, and perceived interactivity all significantly contribute to customers' propensity to utilize SSTs. The results indicate that technology readiness is the most influential predictor among these variables, underscoring the importance of equipping customers with the necessary preparedness and comfort to engage with technological innovations (Parasuraman, 2000). When customers feel ready to use technology, they are more likely to embrace SSTs, thereby enhancing their overall service experience. Overall, the study confirms the potential of self-service technologies to transform the hospitality experience, provided that providers understand and address the key determinants of customer intention. Future research may explore additional factors influencing technology adoption, including demographic variables and consumer circumstances, to further enrich our understanding of this dynamic interplay.

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