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Self-Service Technology Acceptance in The Quick Service Restaurants

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ABSTRACT

The integration of self-service technology within quick-service restaurants posed a range of challenges, rendering it a compelling subject for corporate management. This was especially significant given that this technology had only recently been introduced within quick-service establishments, and there was a lack of standardized ordering software. Factors like performance, perceived usefulness, perceived ease of use, perceived enjoyment, and perceived control over self-service technology had not received sufficient attention due to its novelty. Consequently, this study sought to explore the determinants influencing the acceptance of self-service kiosk technology among customers frequenting quick-service restaurants. Information was gathered by means of self-administered questionnaires, employing purposive sampling techniques. To guarantee that the responses aligned with the research's inclusion criteria, screening questions were utilized. Quick-service restaurants can mitigate the risk of service breakdowns during traditional face-to-face interactions by implementing self-service kiosks, as suggested by the service industry. Encouraging the adoption of self-service kiosks allows these restaurants to deliver seamless and hassle-free dining experiences that align with the preferences of modern customers. Future research could delve deeper into these aspects to acquire a more profound understanding of the role of self-service kiosk technology within quick-service restaurants. Additionally, subsequent studies should investigate various types of dining establishments offering self-service options, including cafes, food courts, and family restaurants. Exploring other business factors such as pricing, themes, food availability, and location as additional indicators of customer preferences would also be valuable.

Keywords: *Self-Service Technology; Quick Service Restaurant; Technology Acceptance*

1.0 INTRODUCTION

The Food and Beverage (F&B) industry holds a significant place in the global economy, with Quick Service Restaurants (QSRs) like McDonald's and Kentucky Fried Chicken (KFC) being prominent players worldwide (Shahril et al., 2021). To stay competitive and relevant in this industry, food service operators have employed aggressive marketing strategies to attract and retain customers, including the integration of technology (Shahril et al., 2021). Customers, often referred to as clients, buyers, or purchasers, play a central role in this ecosystem (Datta, 2016). As the world continues to evolve and digitize, driven by human innovation and the development of new technologies, the efficiency of these technologies in providing early access to services has determined their value to customers (Neuhofer et al., 2014, as cited in Morosan & DeFranco, 2021). Self-Service Technology (SST) is one such innovation, which encompasses technologies like Self-Service Kiosks (SSK) and Mobile Applications (MA) (Torres, 2019; Braxton, 2019; Lee et al., 2022; Mohammad Nabil & Muhammad Anshari, 2022).

SSKs, allowing customers to serve themselves, have gained popularity in QSRs across Malaysia, with McDonald's being a notable example (Shahril et al., 2021). KFC Malaysia also introduced self-service kiosks in the Klang Valley in 2019 (Shahril et al., 2021). Restaurant managers have acknowledged that SSKs provide customers with new value-based experiences and are expected to dominate restaurant trends (Ivkov et al., 2016). These kiosks enable customers to place customizable orders according to their preferences (Torres, 2019). The global self-service kiosk industry is expected to grow significantly between 2023 and 2030. The market is forecast to increase steadily in 2022, and with increasing adoption of tactics by key players, it will rise throughout the projected horizon. According to Market research and insight: Global Self-service kiosk, the market is expected to be worth USD 18780 million in 2022 and a readjusted size of USD 23760 million by 2028, with a CAGR of 4.0% over the study period. On the other hand, MAs require customers to use their own mobile devices for various purposes such as food ordering, finding nearby restaurants, and accessing delivery platforms (Lee et al., 2022; Kapoor & Vij, 2018; Mohammad Nabil & Muhammad Anshari, 2022). In an effort to better understand the predictors of customer acceptance of SST in QSRs, this study adopts the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003, as cited in Almunawar & Anshari, 2022). Three predictors from UTAUT are utilized to construct an SST acceptance model: Performance Expectancy (PE), Effort Expectancy (EE), and Social Influence (SI).

2.0 LITERATURE REVIEW

2.1 Self-Service Technology in Quick Service Restaurant

A lack of awareness regarding the benefits of Self-Service Technology (SST) has been a significant factor in its delayed adoption (Cobanoglu et al., 2015). Many organizations view the implementation of SST as crucial to reducing costs and enhancing the customer experience (Considine & Cormican, 2016). Over the past few decades, SST has seen widespread adoption due to its positive impact on profitability, productivity, labor cost reduction, and increasing customer demand (Kapser, 2019). However, researchers emphasize that several factors need to be considered to ensure the effective application of these technologies (Considine & Cormican, 2016). The acceptance of SST can be assessed through three key predictors: performance expectancy, effort expectancy, and social influence. SST refers to activities or benefits enabled by technology but carried out independently by customers (Fernandes & Pedroso, 2016). In Quick Service Restaurants (QSRs), SST encompasses various technologies such as interactive tablet-based menus, self-service kiosks, and mobile applications (Braxton, 2019). QSRs have embraced numerous technologies to increase revenue while meeting customer demands, with SST adoption being a prominent initiative (Lee et al., 2022). The former CEO of McDonald's, the world's largest QSR chain and a prominent user of Self-Service Kiosks (SSKs), emphasized the significance of digital technology in achieving strategic business goals focused on "digital," "delivery," and "experience" in the future (Akcam, 2020).

2.1.1 Self-Service Kiosks in Quick Service Restaurant

Self-Service Kiosks (SSKs) are a type of self-service technology characterized by their large touchscreen interfaces. They empower customers to independently initiate, customize, and modify their food orders from a menu, as well as complete payment transactions, all without the need to interact with on-duty staff (Jarina et al., 2019; Samengon, 2022). The adoption of SSKs has been rapid and highly visible, especially

within the Quick Service Restaurant (QSR) industry (Lee et al., 2022). In a QSR setting, SSKs enable customers to place food orders without the necessity of engaging with staff members (Seo, 2020).

It's important to note that Self-Service Technology (SST) encompasses various types, with one key distinction being between private and public SSTs. Private SSTs are typically used within individual households and are not meant for public interaction. In contrast, public SSTs are deployed in high-traffic areas accessible to the general public, where there is potential for interaction. These public SSTs can be perceived differently by users (Collier et al., 2014, as cited in Siwela et al., 2022). Public SSKs, which are accessible to and used by the general public, may have acceptance dynamics that differ somewhat from online self-service options (Seo, 2020).

2.1.2 Mobile Application in Quick Service Restaurant

Mobile Applications (MAs) are software applications designed specifically for small, wireless computing devices, such as smartphones and tablets. They differ from desktop or laptop computer applications and are known for their simplicity, user-friendliness, low cost, and compatibility with a wide range of mobile phones, including entry-level and budget-friendly devices (Islam, 2010, as cited in Ignacia et al., 2018). These MAs are essential tools for interacting with mobile devices and cater to various user needs, including shopping, entertainment, information retrieval, and social engagement (Ignacia et al., 2018). In the context of Quick Service Restaurants (QSRs), MAs should ideally provide critical features like a digital menu, feedback from previous customers, food photographs, and restaurant details (Kapoor & Vij, 2018). Food service operators are increasingly shifting their customer interactions away from traditional face-to-face encounters and toward virtual platforms like MAs (Mohammad Nabil & Muhammad Anshari, 2022). This shift is driven by the operational efficiencies and cost-saving benefits that MAs can offer (Fadhillah et al., 2022).

2.1.3 Benefits of Self-Service Technology in Quick Service Restaurant

Self-Service Technology (SST) brings a range of advantages to both food service operators and customers. Implementing Mobile Applications (MAs) in QSRs, for instance, can enhance their strategic capabilities by providing insights into customer behavior through personalized interactions (Akcam, 2020). SST empowers customers to easily browse menus, place and modify orders, and engage in various interactions with restaurants, all at their convenience (Hanks et al., 2016, as cited in Siwela et al., 2022). Additionally, Self-Service Kiosks (SSKs) contribute to providing efficient and satisfactory service to customers (Shahril et al., 2021). These technological solutions not only streamline operations for food service operators but also enhance the overall dining experience for patrons.

2.2 Customers' Acceptance

According to Mohammad Nabil and Muhammad Anshari (2022), the growth of technology companies has resulted in numerous innovations that enhance various aspects of today's living. In many ways, technological innovations make people's lives easier. Self-service technology (SST) offers many benefits to customers; one of them is the ability for customers to achieve higher efficiency in transactions (Jarina et al., 2019). Nonetheless, customers' willingness to accept SST may be affected by several predictors (Fadhillah et al., 2022), including the extent to which businesses and customers in Malaysia are prepared to adopt SST, and the extent to which customers themselves are comfortable with using SST (Munikrishnan et al., 2022). Some people are hesitant to embrace and implement innovative technology, which can impact their daily lives or careers in certain ways (Mohammad Nabil & Muhammad Anshari, 2022). Therefore, it is crucial to understand that customers' acceptance of new technologies makes their use and development possible.

2.3 Overview of SST and UTAUT

Venkatesh and his co-authors designed the Unified Theory of Acceptance and Use of Technology (UTAUT) in 2003 to examine technology acceptance. This framework has been recognized as the most up-to-date model for predicting how people will use technology (Mohammad Nabil & Muhammad Anshari, 2022). Furthermore, it possesses the highest predictive power compared to other models, deciphering nearly 70% of the variance in Business Intelligence (BI) associated with technology usage and almost 50% of the variance in actual technology usage (Routh, 2022). UTAUT combines various acceptance models, making a significant contribution to research on how people accept new technologies (Routh, 2022). This study utilizes three predictors of technology acceptance within the UTAUT framework: performance expectancy,

effort expectancy, and social influence as independent variables, with customers' acceptance as the dependent variable. Additionally, age, gender, income level, and voluntary use serve as moderating variables (Venkatesh et al., 2012, as cited in Siwela et al., 2022) to examine the relationship between customers' acceptance and each variable.

2.3.1 Performance Expectancy (PE)

The term 'performance expectancy' (PE) refers to an individual's belief that they will benefit in terms of job performance by adopting new technology (Venkatesh et al., 2003, as cited in Hao, 2021). PE stands out as one of the most critical predictors in determining whether innovative technology will be utilized and accepted (Hao, 2021). Customers are more likely to embrace technology that enhances their ability to perform specific tasks more effectively, resulting in a high level of PE towards the technology (Mohammad Nabil & Muhammad Anshari, 2022). PE is equivalent to the concept of 'perceived usefulness' (Hao, 2021), which is a component of the Technology Acceptance Model (TAM) influencing technology acceptance (Mohammad Nabil & Muhammad Anshari, 2022). TAM was developed by Davis in 1989 to gauge technology acceptance (Abu-Shobeh, 2022), while the Unified Theory of Acceptance and Use of Technology (UTAUT) was introduced by Venkatesh and his co-authors in 2003 (Mohammad Nabil & Muhammad Anshari, 2022). Customers are more inclined to embrace self-service technology (SST) if they believe it will simplify their daily lives (Xuan et al., 2018) and provide greater benefits compared to traditional methods (Fadhillah et al., 2022). Consequently, it is presumed that SST in Quick Service Restaurants (QSR) has the potential to play a crucial role in driving technology acceptance by delivering valuable benefits and convenience (Seo, 2020).

2.3.2 Effort Expectancy (EE)

The level of convenience that customers can expect when using a piece of technology is referred to as their 'effort expectancy' (EE) (Venkatesh et al., 2003, as cited in Hao, 2021). EE is predicted to be a critical factor in the adoption of SST within the UTAUT model (Mohammad Nabil & Muhammad Anshari, 2022). The easier and more comfortable it is to use technology, the greater its acceptance (Hao, 2021; Mohammad Nabil & Muhammad Anshari, 2022). For example, customers no longer need to endure long queues when ordering and paying for food at the cashier counter in Quick Service Restaurants (QSR) since they have options to do so easily through self-service kiosks (SSK) or mobile applications (MA). EE within the UTAUT model is analogous to 'perceived ease of use' in the TAM model (Hao, 2021), where customers are more likely to adopt new innovations that are user-friendly and require less effort to use when engaging in activities (Jarina et al., 2019). Theories and studies in this field suggest that users' acceptance, perceptions, and attitudes about a technological system's ease of use, as well as their intent to utilize the system, are all influenced by their perception of its ease of use (Fadhillah et al., 2022). Users' impressions of a system's usability significantly impact whether they will accept it (Siti Asma Yaacob et al., 2021). Therefore, EE, or perceived ease of use, is expected to be a critical predictor in SST acceptance in QSR

2.3.3 Social Influences

The findings from Fadhillah et al. (2022) suggest that individual attitudes, financial means, and social influences all play a role in the likelihood of accepting innovative technologies. In contrast, Munikrishnan et al. (2022) define social influence as the impact of recommendations and feedback from friends, family, and co-workers on customers' willingness to adopt technology. Social influence can be described as the degree to which others affect an individual's opinions or behavior (Ivkov et al., 2020, as cited in Zhong et al., 2022). Teo and Pok (2003, as cited in Xuan et al., 2018) discovered that people in the modern technological era are willing to adopt new technologies to enhance their public image and social status. This phenomenon is particularly true today, as people are easily influenced by those around them and often compete to stay updated with the latest news.

2.3.4 The unified theory of acceptance and use of technology (UTAUT)

According to a study by Marikyan and Papagiannidis, S. (2023), the Unified Theory of Acceptance and Use of Technology (UTAUT) is a comprehensive theoretical framework for explaining and predicting people's acceptance and adoption of technology. Using aspects from established frameworks such as the Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), and Social Cognitive Theory, UTAUT identifies the critical factors influencing technology acceptance. The history of the Unified Theory of Acceptance and Use of Technology (UTAUT) may be traced back to 2003, when Venkatesh et al.

collaborated. UTAUT was established in response to the need for a more comprehensive and integrated model to understand technological adoption, drawing on the strengths of earlier key theories. It is worth noting that this study will focus on the acceptance of customers in quick service restaurants to use self-service kiosks to order their meals. Nonetheless, the introduction of UTAUT in this study among quick service restaurants to employ self-service kiosks is equally important, thus investigating it and its relationship to the other variables in the study will be critical to the overall validity of the research.

Khaled (2022) emphasizes that the study will focus on synthesizing current ideas, incorporating empirical evidence, and developing a complete model capable of understanding technology adoption across multiple situations. Performance Expectancy is one of the key components of UTAUT. It highlights users' proclivity to adopt technology that improves work performance, as evidenced by the impact of perceived utility in the Technology Acceptance Model (TAM). Effort Expectancy highlights the importance of usability, complementing previous empirical findings that consumers choose user-friendly technology. Social Influence recognizes the role of peers and social norms on adoption, as well as recognized elements in the diffusion of innovation. Venkatesh's (2023) conscientious incorporation of these aspects strengthens UTAUT's explanatory power, providing a more nuanced view of the complex dynamics behind people's adoption in self-serving kiosk and use of technology.

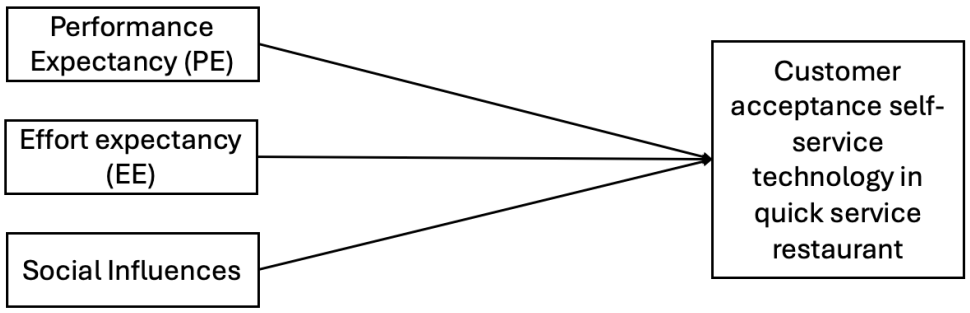

Figure 1: Conceptual framework of the research project

3.0 METHODOLOGY

Information was collected quantitatively using a cross-sectional design and an online survey questionnaire. The research population consisted of customers of quick service outlets in the Klang Valley, Malaysia. To ensure the study's robustness and statistical power, a minimum sample size of over 85 responders was determined based on the complexity of the study model (Hair et al., 2017). Survey items were pre-tested for validity and reliability and adapted from prior studies (Nezakati et al., 2013; Rai & Rawal, 2019; Türk and Erciş, 2017). To mitigate bias, a 5-point Likert scale was employed for independent variables, while a 7-point Likert scale was used for dependent factors.

Data were collected through self-administered questionnaires using purposive sampling. Screening questions were employed to ensure that responses met the research inclusion criteria. Data collection was conducted through an online survey platform, with the Google Forms URL distributed on social networking sites catering to customers who had experience with self-service technologies at quick service restaurants. Respondents were selected through purposive sampling, with a clear understanding that participation was voluntary, confidential, and anonymous.

After data cleaning, 139 valid responses remained. The majority of respondents were female, unmarried, aged between 21 and 30, with an average annual income of less than MYR4,000, and working in the private sector. To address potential common method variance issues and assess bias, a full collinearity test was conducted. Multivariate skewness and kurtosis were used to validate the normality of the data, ensuring data accuracy.

For hypothesis testing, the study employed Partial Least Squares-Structural Equation Modelling (PLS-SEM) with the SmartPLS 4 program. Given the complexity of the conceptual framework and the

exploratory nature of the research, PLS-SEM was deemed suitable (Hanafiah, 2020). The PLS-SEM process involves an iterative approach, with the measurement model solved separately before estimating route coefficients in the structural model assessment (Hair et al., 2021).

4.0 RESULT AND DISCUSSION

Table 4.3: The overall frequency of demographic profile

Characteristics	Frequency	Percentage (%)
Gender		
Male	54	38.4
Female	85	61.6
Age		
21- 30 years old	85	61.2
31- 39 years old	35	25.1
40 years and above	19	13.7
Salary		
Less than RM1000	0	-
RM1000 – RM2999	33	23.7
RM3000 – RM3999	92	66.2
RM4000 and above	14	10.1
Marital Status		
Single	98	70.5
Married	41	29.5
Others	0	-
How many times you are visiting quick service restaurant in a month?		
0 times	0	-
1-2 times	0	-
3-6 times	107	77
7 times and above	32	23
Do you familiar with self-service technology kiosk in the quick service restaurant?		
Yes	139	100
No	0	-

Given that the research model (Hair et al., 2019) incorporated formative measures, the analysis was conducted using the Smart partial least squares (PLS) program (Ringle et al., 2015). Additionally, this study assessed multivariate skewness and kurtosis in line with recommendations from the literature (Cain et al., 2017; Hair et al., 2017; Ngah et al., 2020). The results of Mardia's multivariate skewness and Mardia's multivariate kurtosis, with ß = 751.43 and 249.24, respectively, indicate that the data did not conform to multivariate normality standards. Consequently, the use of Smart PLS for the analysis is appropriate under such conditions.

Many studies employing questionnaires for data collection often rely on a single source of data. Single-source data, while common in social science research, may introduce artificial relationships that undermine the credibility of conclusions. This phenomenon, known as common-method bias (CMB), occurs when a single respondent answers questions pertaining to both exogenous and endogenous variables simultaneously (Ngah et al., 2015; Podsakoff et al., 2012). To address this concern, the authors employed procedural and statistical techniques to mitigate CMB, both before and after data collection, following established literature on CMB management. The procedural method ensured that respondents understood the anonymity of their responses, and various anchoring scales were used, with the external variable scale ranging from 1 to 5 and the endogenous variable scale ranging from 1 to 7 (MacKenzie & Podsakoff, 2012). Regarding the statistical analytic approach, the researchers utilized Kock's (2015) full-collinearity tests. It is widely accepted that Variance Inflation Factor (VIF) values exceeding 3.3 indicate a severe CMB

problem. As indicated in Table 2, all VIF values were below 3.3, confirming that the study is free from the issue of CMB.

4.1 Full collinearity test

Table 2 : Full collinearity testing

PEU	PEOU	PE	PC
2.075	1.864	2.397	1.758

Notes: PEU = perceived of usefulness, PEOU = perceived ease of use, PE = Perceived enjoyment, PC= perceived of control

The two steps in the study that follow the recommended two-step methodology by Anderson and Gerbing (1988) are the measurement model and the structural model. The measurement model encompasses two essential aspects of validity: convergent validity and discriminant validity (Hafaz Ngah et al., 2020; Hair, Hult, et al., 2017). Convergent validity pertains to the relationship between constructs and items within the study framework. Prior research (Ngah et al., 2019; Urbach & Ahlemann, 2010) suggests that an individual item achieves convergent validity when it effectively measures the latent variable it is intended to represent. According to Hair et al. (2014), convergent validity is established if the loading, average variance extracted (AVE), and composite reliability (CR) are all equal to or greater than 0.5.

As demonstrated in Table 3, all loading, AVE, and CR values surpass the thresholds specified by Hair et al. (2014). This substantiates that the present study has successfully demonstrated convergent validity.

Table 3 : Convergent Validity and reliability assessment

Construct	Item	Loading	AVE	CR
Perceived of usefulness	Self-service technology kiosk enables to accomplish ordering food more quickly	0.780	0.576	0.844
	Using Self-service technology kiosk enhances my effectiveness to make an order	0.793		
	Using Self-service technology kiosk makes it easier to make an order	0.780		
	The self-service kiosk improves my ordering food ability	0.809		
	The self-service technology kiosk will make ordering food more productivity	0.615		
Perceived ease of use	Self-service technology kiosk introduced in quick service restaurant are used to simplify the buying process	0.840	0.746	0.972
	Using the self-service technology kiosk systematically meeting the need of today's generation-based products and services.	0.868		
	I have experience with technologically based products and services	0.853		
	Self-service technology kiosk provides a convenient payment method for users	0.838		
	Self-service technology kiosk have simple and fast application.	0.917		
Perceived ease of enjoyment	Self-service technology kiosk system makes buying process interesting	0.734	0.579	0.826
	I like interacting with Self-service technology kiosk as a real object	0.757		
	Performing in the buying process by using Self-service technology kiosk is captivating	0.777		
	Overall, I enjoy buying with Self-service technology kiosk	0.746		
	Overall, I find the system used in Self-service technology kiosk ease and exciting	0.790		
Perceived control	Self-service technology kiosk is less intrusive as opposed to interpersonal interaction with the front desk staff.	0.708	0.597	0.836
	I have control over using Self-service technology kiosk	0.786		

	Using Self-service technology kiosk would provide me with feelings of independence	0.737		
	Using Self-service technology kiosk give me control over my ordering	0.809		
	Using Self-service technology kiosk delivers the same result/performance as approaching service employee	0.819		
Customer acceptance	I always try to use self-service technology in quick service restaurant	0.776	0.575	0.768
	I will always plan to use self-service technology often when buying food in quick service restaurant	0.810		
	I am always willing to use self-service technology in quick service restaurant	0.654		
	If I get a chance, I always choose to use self-service technology in quick service restaurant	0.785		

Table 4 : Discriminant Validity assessment (HTMT)

CONS	CA	PC	PEOU	PE	PEU
CA					
PC	**0.659**				
PEOU	**0.254**	**0.468**			
PE	**0.676**	**0.800**	**0.691**		
PEU	**0.333**	**0.453**	**0.769**	**0.666**	

Discriminant validity is evaluated through the Heterotrait-Monotrait (HTMT) ratio of correlation criterion, which assesses whether the constructs in the research framework are distinct from one another. According to Franke and Sarstedt (2019), if the HTMT values are less than or equal to 0.9, discriminant validity is established. As indicated in Table 4, all HTMT values are below the threshold set by Franke and Sarstedt (2019), thus confirming the discriminant validity of the components incorporated into the study.

Table 5. Structural Model direct effects

Hypo	Relationship	Beta	SE	T-value	P-Value	LL	UL	R^2	F^2	RESULT
H1	PEU -> CA	0.051	0.108	0.389	0.697	-0.225	0.281		0.002	Not supported
H2	PEOU-> CA	-0.195	01.25	1.577	0.12	-0.429	0.074		0.029	Not supported
H3	PE -> CA	0.436	0.108	4.043	0.001	0.230	0.653		0.127	Supported
H4	PC -> CA	0.311	0.090	3.474	0.001	0.130	0.479	0.354	0.088	Supported

The study employed a bootstrapping technique with 5,000 resamples, as recommended by Hair et al. (2019). For a hypothesis to be considered supported, it must meet four criteria: the confidence interval must not straddle zero between the lower level (LL) and upper level (UL), the t-value must be greater than or equal to 1.645, the p-value must be less than or equal to 0.05, and the direction of the beta value must align with the direction of the hypothesis. Before assessing the hypotheses, it was crucial to ensure that multicollinearity was not a significant issue in the study. To confirm the absence of multicollinearity, VIF values should be less than or equal to 3.3, following Diamantopoulos and Siguaw (2006). In this study, all VIF values were below 3.3, indicating that multicollinearity was not a significant problem. The authors tested five direct hypotheses to address the study's question, with exogenous variables used in structural equation modelling and endogenous variables describing dependent variables.

Of the four hypotheses tested by the researchers to understand customer acceptance of self-service technology kiosks in quick-service restaurants, two were unsupported, and two were supported. The findings confirmed hypotheses 3 and 4, demonstrating that perceived enjoyment ($\beta = 0.436$, $p < 0.01$) and perceived control ($\beta = 0.311$, $p < 0.01$) have positive effects on customer acceptance. Together, these variables accounted for 35.4% of the variations in customer acceptance of self-service technology kiosks

in quick-service restaurants. According to Cohen (1988), effect sizes greater than 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively. In this context, the findings suggest that each variable has a small impact on intention. In total, the findings explain 28.3% of customer acceptance of self-service technology kiosks in quick-service restaurants.

5.0 CONCLUSION

Implementing self-ordering kiosk technology in quick-service restaurants presented various challenges, making it an intriguing area for company management. This was particularly true since this technology had only recently been introduced in quick-service restaurants, and there was no standardized ordering software. Factors such as perceived usefulness, perceived ease of use, perceived enjoyment, and perceived control of self-ordering kiosk technology had not received sufficient attention due to its novelty. Consequently, this study investigated the factors influencing quick-service restaurant customers' acceptance of this technology. Quick-service restaurants can reduce the risk of service failures in typical face-to-face interactions by employing self-service kiosks, as indicated by the service industry (Baba et al., 2023; Jeon et al., 2020). Encouraging the adoption of self-service kiosks helps restaurants provide smooth and hassle-free meal services that align with the preferences of contemporary customers (Cavusoglu, 2019; Jeon et al., 2020).

The study's findings provide valuable marketing and management insights for restaurants. They suggest that enhancing perceived usefulness, perceived ease of use, perceived enjoyment, and perceived control can boost customers' acceptance of self-service kiosks. Customers may be more inclined to adopt the technology if kiosks are aesthetically appealing and user-friendly, placed in convenient locations, priced reasonably, and promoted effectively. However, without acceptance and familiarity, individuals and organizations may resist change or not fully utilize technology, missing opportunities for efficiency and innovation. This aligns with the perspectives presented by Mathur et al. (2020) and Rai and Rawal (2019), where individuals' reluctance to adopt new technologies may stem from lack of understanding or past negative experiences. Acceptance can vary widely among individuals and be influenced by various factors. Therefore, businesses and organizations must consider customer acceptability when deploying new technologies, as it can impact the success of technology adoption.

However, it's worth noting that the current study has certain limitations. Its focus on self-service kiosks in restaurants may limit its applicability to other technology adoption trends in the restaurant industry. Additionally, the study establishes a relationship between perceived usefulness, perceived usability, perceived enjoyment, perceived control, and customer acceptability. Future research could delve deeper into these aspects to gain a better understanding of self-service kiosk technology's role in quick-service restaurants. Further studies should also explore different types of eateries that offer self-service options, such as cafes, food courts, and family restaurants. Considering other business factors like pricing, themes, food availability, and location as additional predictors of customer preferences would also be valuable. Future research could also investigate how age and gender differences influence the technology adoption framework.

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