



Self-service kiosk at fast food restaurant: The role of hedonic motivation, performance and effort expectancy

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Abstract

This study examines the behavior intention of self-service kiosks at fast food restaurants based on performance expectancy, effort expectancy, and hedonic motivation. The study was conducted in Indonesia, through an online survey, yielding 110 valid responses from those who had experienced using self-service kiosks from one of five fast food restaurants. The findings revealed that despite having used self-service kiosks at numerous fast food brands, respondents' preference was McDonald's. This study affirms that customers' intention to use self-service kiosks is significantly and positively influenced by hedonic motivation and effort expectancy, but not by performance expectancy. This indicates that customers' intention is not significantly impacted by their perception of self-service kiosks' usefulness. Further, female customers are more likely to be influenced by various factors in their intention towards technology compared to male customers. This research contributes to existing knowledge on technology adoption, providing restaurants with insights into market attitudes toward their technology. Moreover, our study suggests that fast food should focus on creating self-service kiosks not solely as ordering tools, but also as engaging technology that arouses customers' feelings of enjoyment while using it. Also, self-service kiosks should be easy to navigate with no complicated steps to follow, ensuring they can be easily used by everyone, including first-time users.

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Introduction

Fast food restaurants in Indonesia are one of the food establishments experiencing rapid expansion, growing at an average rate of 12.1 percent annually (Hariyanto, 2021). Nowadays, fast food is vast in adopting technology, one of which is self-service technology (SST), which can be divided into three categories: mobile SST, on-site SST, and self-service (Shin & Perdue, 2019). The use of SST in restaurants is not only a current trend but is also predicted to continue in the future (Park et al., 2021), for instance, robotic waiters, self-order QR codes, self-order tablets, self-service kiosks, and conveyor belts. A self-service kiosk (SSK), one of the SST components, allows customers to place orders and make payments independently using the device (Sy et al., 2021).

In the hospitality context, the majority of hotels and airlines offer SSK to accelerate the check-in process (Gupta & Sharma, 2021). Similarly in the restaurant context, SSK can assist in reducing long waiting times at the cashier counters by enabling customers to order, pay, and pick up their meals all in one location (Teviningrum & Urfa, 2021). SSK may improve efficiency, provide detailed food information, and make customers feel more empowered and less pressured compared to ordering from human employees (Yang et al., 2019). Despite those benefits, there will inevitably be challenges when using SSK, such as language issues and lack of human interactions (Park et al., 2021). Additionally, the extent to which customers use technology, including SSK, is characterized by behavioral intention (Hassan & Farmanesh, 2022). Therefore, understanding customer behavior intentions will help the restaurant to keep the business sustainable (Ryu et al., 2012).

In the Indonesian context, prior studies in self-service technology have been substantially conducted, yet mainly focused on airports, airlines, retail, and banking industry (Kusumah et al., 2021). The current focus on the restaurant industry only started to emerge after 2020. One of the most appealing restaurant self-service technologies is self-service kiosks, which can be found in several fast food brands, such as KFC, Taco Bell, IKEA, McDonald's, and Burger King. McDonald's first introduced SSK in 2018, followed by KFC and Burger King in 2019 at select locations. Similarly, IKEA started using SSK at their sixth location in Taman Anggrek Mall Jakarta. Taco Bell introduced SSK in 2021 at their second location at PIK Gallery Jakarta. These SSKs primarily serve as self-ordering tools and payment methods,

allowing customers to place orders for dine-in or takeaway. In what follows, researchers start to delve into this uprising SSK usage, which is considered a new phenomenon. For instance, SSK in McDonald's has been investigated from service quality and customer experience standpoints (Stanley et al., 2023; Teviningrum & Urfa, 2021). One of the current studies of Safitri et al. (2024) delves into SSK in McDonald's using the Technology Acceptance Model (TAM) approach. To flesh out, regardless of past studies that have been conducted on SSK in fast food, there are only a few research studies that focus on behavioral intention on SSK usage from various fast food brands.

Hence, this study attempts to fill the contextual gap following the unified theory of acceptance and use of technology (UTAUT). Investigating the determinant factors of restaurant customer behavior intention can shed light on how this action can be incorporated by restaurants. The findings can assist fast food restaurants, or other dining formats that apply self-service kiosk technology in their operations, to fit their operational and managerial strategies to win the customer behavior intention in the future. Therefore, this research aims to examine the behavior intention of self-service kiosks at fast food restaurants, by incorporating three determinants, which are performance expectancy, effort expectancy, and hedonic motivation. In addition, we also extend to examine how the relationship may differ based on gender.

Literature Review

The notions of how customers accept technology can be derived from the Technology Acceptance Model theory (TAM) and the UTAUT theory (Unified Theory of Acceptance and Use of Technology) (Venkatesh et al., 2003; Venkatesh et al., 2012). In essence, UTAUT and UTAUT2, due to their viable use in various integration, applications, and extension, have become the most frequently used models of technology acceptance and usage in various research (Chang et al., 2019). In what follows, behavioral intention (BI) is considered the key predictor of technology use (Venkatesh et al., 2012) because it is derived from an individual's inclination to utilize a particular technology for various tasks and the extent to which they believe they will persist in using it (Kim & Qu, 2014). In the context of the restaurant industry, including the adoption of self-service kiosks (SSK) in fast food settings, it is contended that behavior intention, which exerts a significant and direct influence on SSK use, stands as the most influential determinant

of individual purchase and post-purchase behavior (Baba et al., 2023). Once customers adopt this behavior (i.e. use SSK), they are likely to offer recommendations to others in the future (Sun, 2024) and may even be willing to pay a higher price for a premium product (Wiastruti et al., 2022a). Behavioral intention can be determined by various factors, such as hedonic motivation, performance expectancy, and effort expectancy.

Hedonic motivation (HM) is “the fun or pleasure derived from using a technology” (Venkatesh et al., 2012, p.161). HM may emerge in the hospitality context, for instance when customers can earn points and share their experiences on social media, including when they try new SSK technology during their dining experience (Baba et al., 2023). In essence, HM may turn into pleasure, which affects how customers embrace and use new technology (Chang et al., 2019). This includes enjoyment, fun, and amusement. A meta-analysis of 79 UTAUT2 empirical studies conducted by Tamilmani et al. (2019) revealed that hedonic motivation (HM) is influential in various contexts. The analysis found that HM can impact performance expectancy and effort expectancy, which are the two primary predictors of individual technology acceptance. These findings align with the research of Alalwan et al. (2016), Koenig-Lewis et al. (2015), and Joe et al. (2022), who explored these relationships in different settings such as telebanking in Jordan, mobile banking in France, and check-in/out kiosks in hotels. As a result, we posit the below hypotheses:

H1: Hedonic motivation significantly influences performance expectancy

H2: Hedonic motivation significantly influences effort expectancy

Furthermore, numerous prior studies have demonstrated that HM significantly increases customer behavioral intention towards technology use in diverse contexts, including SSK in Malaysian fast food restaurants (Baba et al., 2023), telebanking in Jordan (Alalwan et al., 2016), and digital learning systems in Malaysia (Avci, 2022). However, some studies have found that HM does not have a significant effect on customer behavioral intention, as seen in research on SSK in Korean fast-food restaurants (Seo, 2020) and interactive self-service technology (Xu et al., 2022). Given that both performance expectancy and effort expectancy are influenced by HM, it is likely that behavioral intention will be indirectly affected (Joe et al., 2022). This implies that hedonic motivation may lead to varying levels of behavioral intention towards technology, especially when mediated by performance expectancy or effort expectancy. In our current study

focusing on SSK in fast food, we support the former assertion. Therefore, we propose the below hypotheses:

H3: Hedonic motivation significantly influences behavior intention

H6: Hedonic motivation, mediated by performance expectancy, significantly influences behavior intention

H7: Hedonic motivation, mediated by effort expectancy, significantly influences behavior intention

The concepts of performance expectancy and effort expectancy have been instrumental in increasing the acceptance of technology in the hospitality industry (Hao, 2021; Joe et al., 2022). Performance expectancy (PE) is “the degree to which using a technology will provide benefits to consumers in performing certain activities” (Venkatesh et al., 2012, p.159). PE is about users’ evaluating the extent to which utilizing technology will benefit consumers and enhance their performance (Herrero et al., 2017). This indicates that a high level of PE leads to greater intention with the technology. Accordingly, PE has been studied to positively affect BI, particularly on SSK used in various contexts, such as in Malaysia fast food (Baba et al., 2023; Shukry et al., 2023), Korean fast food (Han et al., 2020), global fast food (Moon et al., 2022), including SSK in US hotels among domestic travelers (Kim & Qu, 2014). Hence, we solicit the below hypothesis:

H4: Performance expectancy significantly influences behavior intention

Effort expectancy (EE) is “the degree of ease associated with consumers’ use of technology” (Venkatesh et al., 2012, p.159). EE refers to an individual’s anticipation of how using technology will enhance their work performance (Han et al., 2020). This can be understood in terms of convenience, assessing how simple and straightforward it is to use the technology (Alalwan et al., 2016). Interestingly, studies on EE toward behavior intention in technology have yielded varied results. For example, research on SSK in US hotels among domestic travelers (Kim & Qu, 2014), SSK in Korean fast food (Han et al., 2020), and food delivery applications in Indonesia (Wiastruti et al., 2022b), demonstrated a positive and significant effect between EE and BI. This contrasts with the findings from other studies, which showed no significant effect between EE and BI (Alalwan et al., 2016; Avci, 2022; Seo, 2020). This suggests that when customers perceive technology as easy to use, it can either increase or decrease their intention to use it. Moreover, EE has been shown to directly increase performance expectancy (Han et al., 2020; Kim & Qu, 2014; Kim et al., 2023; Moon et al., 2022). Therefore, we postulate that when examining

the relationship between EE and BI through PE, the result will likely be highly influenced by the direct effect of EE on PE. As a result, we propose the below hypotheses:

H5: Effort expectancy positively influences behavior intention

H8: Effort expectancy, mediated by performance expectancy, positively influences behavior intention

Figure 1 illustrates this study framework, which encompasses four variables (HM, PE, EE, BI) and eight hypotheses. Moreover, each relationship is tested separately among male and female respondents. The decision to further explore gender differences is well-founded. Despite Kim et al. (2023) finding that age does not moderate the model of UTAUT model on self-service kiosks, others have indicated that different genders show different behavior toward self-service kiosks (Lee et al., 2013). For instance, males tend to score significantly higher than women on explicit and implicit attitude measures toward technology (Lee & Yen, 2023; Venkatesh et al., 2012). Based on research on gender roles, males typically demonstrate traits such as confidence, adventurousness, and a propensity for risk-taking, while females often gravitate towards safer, more routine occupations and tend to be more risk-averse (Assaker, 2020). Also, female customers are proven to show more intention than male customers (Joe et al., 2022). With these considerations, delving into gender roles is an intriguing aspect that will be explored in this

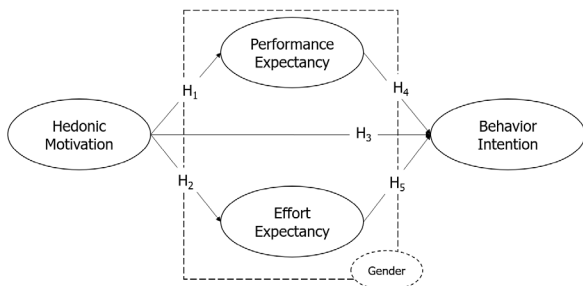


Figure 1 Research framework

study, to investigate whether male and female customers in fast food restaurants show the same path relationship toward self-service kiosks.

Methodology

The study engages in a quantitative approach with an online survey. This research encompasses four variables. Hedonic motivation is the first variable and was assessed using four items from Seo (2020) and Herrero et al. (2017). Performance expectancy and effort expectancy, the second and third variables, were measured by four items each, adapted from Zhao & Bacao (2020) as a modified version from Venkatesh et al. (2003). Behavior intention, the fourth variable, was measured using five items adapted from Han et al. (2020). The questionnaire consisted of three parts: (1) respondent demographics, (2) dining characteristics, and (3) measurement items for the four variables, comprising 17 questions. All measurement items were scored on a five-point Likert scale, with five indicating strong agreement, four indicating agreement, three indicating neutrality, two indicating disagreement, and one indicating strong disagreement.

The intended respondents should meet two criteria; Being Indonesian citizens and having had former encounters dining in fast food restaurants and at the same time utilizing self-service kiosks (SSK) in person. Particular fast food in this study refers to only five brands: Burger King, KFC, IKEA, McDonald's, and Taco Bell (Figure 2 for actual SSK machine), with no further intention to compare SSK in each brand and to generalize it into the Indonesian context. Although Indonesian fast food brands are beyond the aforementioned brand, only these five brands were specifically chosen based on their current state in 2022, in which they had built and supplied SSK in their store, regardless of whether they were only in one store or applied to all existing stores.



Figure 2 SSK in five fast food brands in Indonesia

In addition, the decision to restrict participation to Indonesian citizens is based on two main reasons. Firstly, while some SSK offers bilingual options (Indonesian and English), the majority is more comprehensive when presented in Indonesian. Secondly, our observation of several fast-food restaurants in the greater Jakarta area revealed that the majority of customers are Indonesian. During this observation period, no foreigners were present, likely due to the ongoing COVID-19 restrictions preventing inbound travel in 2022. Moreover, the survey is written in Indonesian and hence limited access to only native language users, which is Indonesian.

Data were collected through an online questionnaire, written in Indonesian language and created using Google Forms. The invitation to take part in the survey was shared across different platforms to ensure a broad and diverse participation, including social media and Instant Messaging personal communication. The survey is voluntary and was circulated over two months from June to July 2022, providing ample time for participants to take part. During the period when this study was conducted in 2022, the COVID-19 pandemic was still ongoing, and the government continued to encourage limited physical contact, including at restaurants and shopping malls. As a result, an online survey was used instead of a face-to-face survey. The open data underlying this study are available at 10.65h084/m9.figshare.31166518. We managed to obtain 110 (out of 127) valid surveys and used them for data analysis with structured equation

modeling (SEM) using AMOS. According to Memon et al. (2020), SEM analysis in the field of hospitality requires a minimum sample size of 100. In addition, SEM analysis for unknown populations, as implied in this present study, should employ between 85 to 170 samples, in conjunction with a 5 to 10 ratio with the 17 measurement items (Hair Jr et al., 2017). Moreover, Hair Jr et al. (2014, p. 172) advise “sample size method of sample-to-variable ratios for an unknown population measured using a ratio of 15:1 to 20:1 for the number of samples and the variables used in the research”. Since this study employs four variables, a minimum of 60 samples (4 multiple 15 ratio) to 80 samples (4 multiple 20 ratio) is considered sufficient. Hence, the 110 samples for this study adheres to the above threshold.

Results

Table 1 outlines respondents’ dining behavior, showing that they typically go to fast food restaurants on weekdays, during lunchtime, with family or friends, and spend less than IDR 100,000 (USD 6.5) per person. To illustrate, the meal package at KFC and McDonald’s in Indonesia costs approximately IDR 60,000 (USD 3.5). This includes rice, two fried chicken pieces, and a drink, or a burger, fries, and a drink. The majority of respondents in this study are Indonesian citizens, female (73.6%), under the age of 28 in 2022 (72.7%),

Table 1 Dining behavior

Questions	Answer	nn	%
When do you most frequently dine at a fast food restaurant?	Weekdays (Monday to Friday)	70	63.6
	Weekends (Saturday to Sunday)	40	26.4
What time do you most frequently dine at a fast food restaurant?	Dinner (after 18.00)	42	38.2
	Lunch (11.00 to 15.00)	37	33.6
	Evening (15.00 to 18.00)	28	25.5
	Breakfast (before 11.00)	3	2.7
How much is your budget for one meal per person?	Less than IDR 100,000 (< 6,5 USD)	90	81.8
	More than IDR 100,000 (> 6,5 USD)	20	18.2
With whom do you dine?	Family	48	43.7
	Friends	47	42.7
	Partner	15	13.7
Which SSK have you ever tried/ used?	McDonald's	99	52.7
	KFC	40	21.3
	IKEA	20	10.6
	Burger King	18	9.6
	Taco Bell	11	5.8
Which SSK is your favorite?	McDonald's	74	67.3
	KFC	20	18.2
	IKEA	11	10
	Burger King	3	2.7
	Taco Bell	2	1.8

and with domicile in Jakarta (78.2%). Respondents were requested to answer the subsequence measurement items questions according to their favorite SSK. Out of five fast-food brands, 67.3 percent choose McDonald's as their favorite SSK, followed by KFC (18.2%), IKEA (10%), Burger King (2.7 %), and Taco Bell (1.8%).

The measurement model fits generally following a rule where data with 113 degrees of freedom and a positive df value are tested. It was over-identified, and the minimum was achieved. The obtained result shows a Goodness of Fit Index (GFI) of 0.853, an Adjusted Goodness of Fit Index (AGFI) of 0.802, and a Root Mean Square Residual (RMR) of 0.016, which indicates that the model fits well and effectively explains the data. Additionally, referring to Table 2, all items' loading factor values are more than 0.6, with a Cronbach Alpha's value more than 0.8, indicating the items are reliable and able to explain their latent variable. In addition, the CR values for HM, PP, EE, and BI are 0.880, 0.840, 0.889, and 0.911 respectively, implying greater than 0.7 as the minimum threshold, with the AVE value of 0.650, 0.582, 0.667, and 0.673, all more than 0.5. This demonstrates that all 17 measurement items meet the criteria and have reliable indicators for assessing the underlying variables of HM, PP, EP, and BI. Therefore, they are eligible for further analysis with the structural model.

Referring to Table 3, in terms of hedonic motivation, respondents believe that SSK is fun, delightful, nice, and extremely entertaining. In terms of performance expectations, respondents highly agree that SSK is beneficial, simple to use, and improves the ordering process's efficiency. Respondents agree that learning to use SSK is simple in terms of effort, and they appreciate the user-friendly instructions provided by SSK, which allow them to become proficient in specific areas step by step. In terms of behavioral intention, respondents express agreement in continuing to use SSK as a substitute for a conventional order-taker counter in the future. This aligns with their inclination to recommend SSK to friends and colleagues and spread positive word of mouth.

Statistical results for testing the hypotheses are provided in Table 3. To confirm the hypotheses, the probability value must not be greater than 0.05 with a *t*-value more than the *t*-table (1.659), including a positive path coefficient value (β). There are five hypotheses related to direct effect. As per the results, the *t*-value for HM→PE is 3.240, with a *p*-value of .001 and a positive β . Therefore, H1 is affirmed, indicating that hedonic motivation positively and significantly influences performance expectancy. For HM→EE, the *t*-value is 4.254, with a *p*-value of .000 and a positive β , thus H2 is supported, indicating that hedonic motivation positively and significantly influences effort expectancy.

Table 2 Measurement items

Measurement Items	$\bar{X}\bar{X}$	LF	CA	CR	AVE
Hedonic Motivation (HM)			0.876	0.880	0.650
HM1 Utilize SSK is fun	4.54	.866			
HM2 Utilize SSK is enjoyable	4.45	.843			
HM3 Utilize SSK is pleasant	4.41	.693			
HM4 Utilize SSK is very entertaining	4.45	.811			
Performance Expectancy (PE)			0.842	0.848	0.582
PE1 SSK is useful	4.71	.753			
PE2 SSK is convenient to use	4.51	.735			
PE3 Utilize SSK improves the ordering process	4.55	.754			
PE4 Utilize SSK improves the efficiency	4.64	.808			
Effort Expectancy (EE)			0.888	0.889	0.667
EE1 Learning how to use SSK is easy	4.45	.823			
EE2 It is easy to follow all the steps of SSK	4.42	.797			
EE3 It is easy to become skillful at using SSK	4.45	.851			
EE4 Interaction with SSK is clear and comprehensible	4.46	.795			
Behavior Intention (BI)			0.911	0.911	0.673
BI1 I will spread positive word of mouth	4.39	.789			
BI2 I will recommend the use of SSK to friends and colleagues	4.49	.745			
BI3 I would prefer to use SSK	4.37	.834			
BI4 I will continue using SSK	4.33	.860			
BI5 I will use SSK despite the existence of cashiers	4.33	.866			

Note: Mean ($\bar{X}$), Loading Factor (LF), Cronbach's Alpha (CA), Composite Reliability (CR), Average Variance Extracted (AVE)

As for HM→BI, the t -value is 1.825, with a p -value of .008 and a positive β , thus H3 is supported, indicating that hedonic motivation positively and significantly influences behavior intention. Meanwhile, the PE→BI relationship has a t -value of 2.074 and a p -value of .068, which is greater than the threshold of 0.05, with positive β , thus H4 is not supported due to not complying with the rule of thumb, indicating that performance expectancy is positive but does not significantly influence behavior intention. Further, the EE→BI relationship has a t -value of 2.663 and a p -value of .038, with a positive β , thus supporting H5.

In terms of indirect effect, there are three hypotheses. The results showed that the t -value for HM→PE→BI is 1.590, a positive β , and a p -value of .056, exceeding the threshold of 0.05. Thus, H6 is not supported, indicating that performance expectancy is not a significant mediator

between hedonic motivation and behavior intention. On the other hand, the t -value for HM→EE→BI is 1.992, a positive β , and a p -value of .023. Thus, H7 is supported, indicating that effort expectancy acts as a significant mediator between hedonic motivation and behavior intention. Additionally, the t -value for the relationship EE→PE→BI is 1.679, with a p -value of .047, and a positive β . Thus H8 is supported, indicating that performance expectancy acts as a significant mediator between effort expectancy and behavior intention. This study also tries to extend how the proposed hypotheses might be different among males and females. Referring to Table 4, H1 and H2 are supported, while H5 is not supported, either for males or females. On the contrary, H6 is not supported for both genders. Meanwhile, H3, H4, H7, and H8 are supported for females, but in contrast, not supported for males.

Table 3 Hypotheses results

Relationship	β	SE	t -value	p -value	Result
Direct Effects					
H1: HM → PE	.278	.086	3.240	.001	Supported
H2: HM → EE	.742	.104	4.254	***	Supported
H3: HM → BI	.384	.144	1.825	.008	Supported
H4: PE → BI	.495	.271	2.074	.068	Not Supported
H5: EE → BI	.332	.160	2.663	.038	Supported
Indirect Effects					
H6: HM → PE → BI	.137	-	1.590	.056	Not Supported
H7: HM → EE → BI	.246	-	1.992	.023	Supported
H8: EE → PE → BI	.186	-	1.679	.047	Supported

Note: behavioral intention (BI), hedonic motivation (HM), effort expectancy (EE), performance expectancy (PE)

Table 4 Hypotheses results based on gender

Relationship	Male				Female			
	β	t -value	p -value	Support	β	t -value	p -value	Support
Direct Effects								
H1: HM → PE	.444	2.341	.019	Yes	.202	2.081	.037	Yes
H2: HM → EE	.686	3.288	.001	Yes	.755	6.331	***	Yes
H3: HM → BI	2.384	.676	.499	No	.317	2.000	.033	Yes
H4: PE → BI	-3.425	-.452	.651	No	.606	2.161	.031	Yes
H5: EE → BI	1.149	.598	.550	No	.311	1.721	.085	No
Indirect Effects								
H6: HM → PE → BI	-1.521	-0.444	0.657	No	.122	1.501	.066	No
H7: HM → EE → BI	.788	0.588	0.278	No	.235	1.658	.049	Yes
H8: EE → PE → BI	-.805	-0.423	0.672	No	.259	1.923	.027	Yes

Note: β (path coefficient), *** significant at 0.000 level, behavioral intention (BI), hedonic motivation (HM), effort expectancy (EE), performance expectancy (PE)

Discussion

In light of the results, our study affirms that customers' inclination to use self-service kiosks (SSK) in fast food restaurants is significantly and positively influenced by hedonic motivation and effort expectancy. This is consistent with the research conducted by Alalwan et al. (2016), Baba et al. (2023), Boonsiritomachai and Pitchayadejanant (2019), and Han et al. (2020). It can be inferred that customers' interest in utilizing SSK in fast-food establishments is positively affected by the enjoyment and excitement they experience while using such kiosks. Furthermore, a user-friendly interface and simple steps and features enhance the customer experience, making it convenient for them to use SSK for placing orders and making payments. Also, when customers' effort expectancy of fast food SSK is mediated by performance expectancy, customers show an increase in behavioral intention, as supported by Joe et al. (2022).

On the contrary, the results indicate that performance expectancy is not a significant factor in shaping customers' intention to use SSK in fast food restaurants. Similarly, performance expectancy also does not significantly mediate the relationship between hedonic motivation and behavioral intention. It appears that customers are not primarily motivated by the convenience and efficiency offered by these kiosks. This finding contradicts the results of most previous studies (Avci, 2022; Herrero et al., 2017; Joe et al., 2022; Moon et al., 2022; Seo, 2020). One plausible explanation for this could be the demographic composition of our respondents, with a majority belonging to the younger Generation Z. This generation seems to place less emphasis on process improvement, suggesting that perceived usefulness is not their primary motivator. Additionally, customers at fast food restaurants, as opposed to those at fine dining or casual dining establishments, tend to prioritize the practical aspects of technology over its novelty and enjoyable features (Xu et al., 2022). This is positive for the restaurant business, as it indicates that customers' intention to use SSK is not significantly impacted by their perception of its usefulness. In other words, they still intend to use SSK technology regardless of whether they consider it useful or not.

Our extended research on gender roles confirms that male and female customers show different behaviors when it comes to using SSK technology in fast food settings. Interestingly, male customers do not seem to be influenced by either hedonic motivation or performance

expectancy when using SSK technology. On the other hand, female customers are significantly influenced by both hedonic motivation and performance expectancy. This disparity may be attributed to the gender ratio of the respondents, leading us to focus more on female customers in our analysis. These findings align with previous studies by Lee et al. (2013) and Joe et al. (2022), which suggested that females are more likely to be influenced by various factors in their intention towards technology compared to males. In essence, increasing female behavioral intention towards SSK technology is likely to be more challenging than for male customers.

Conclusion and Recommendation

This study examines the behavior intention of the self-service kiosk customers at fast food restaurants based on performance expectancy, effort expectancy, and hedonic motivation. It is revealed that hedonic motivation has a positive and significant impact on performance expectancy, effort expectancy, and customer behavioral intentions. However, performance expectancy does not significantly affect customer behavioral intention in using SSK, unlike effort expectancy. If hedonic motivation is mediated by performance expectations, it appears to have no significant influence on behavioral intentions. Conversely, when it is mediated by effort expectancy, the result is significant toward behavior intention.

This research adds to the current body of knowledge on the acceptance of technology in the hospitality industry, particularly in quick-service or fast-food businesses. The most significant determinant in behavior intention turns out to be hedonic motivation. It indicates that people will utilize self-service kiosks if they believe it is fun, pleasant, and entertaining. Furthermore, effort expectancy, which determines how simple the self-service kiosk is to operate, impacts customer behavioral intention. The more user-friendly the technology, the higher the satisfaction levels among customers. Customers may be enticed to utilize self-service kiosks due to their convenience of use. Customers initially evaluated the efficiency, enjoyment, and convenience of using SSK, which later motivated them to order their meals through SSK. As a result, the UTAUT hypothesis, which argues that performance expectations, effort expectancy, and hedonic motivation, may influence people's intention to utilize technology, is confirmed in the context of fast-food restaurants.

The following recommendations were made based on the findings to help fast-food businesses improve their operations through the implementation of SSK.

Firstly, SSK should emphasize menu information. Secondly, restaurants should maintain personnel on hand at all times to help customers who have issues with SSK, particularly elderly customers and those who come with infants or toddlers. Many fast food restaurants overlook this aspect of their service process, and during peak times, this can be challenging to find employees available to provide assistance with the kiosk. Thirdly, to encourage SSK usage, fast food restaurants may create engaging and user-friendly guides on how to use the kiosks, for instance, tutorial videos posted on various platforms and social media. This may impact customers at the outset in two ways: (1) ensure easy access for customers to obtain advanced information about SSK that is openly and freely accessible, and (2) enhance customers' awareness and curiosity about SSK as a result of social media exposure. Consequently, this may lessen the time customers require while using SSK while increasing their interest and reducing their hesitation to try SSK. Fourth, fast food restaurants might offer small perks or rewards to consumers who use SSK instead of a traditional cashier, to simply increase the use of SSK. This strategy was employed by Air Asia Airlines when they first launched a self-check-in kiosk at the airport, where they charged an additional fee for passengers who checked in at the counter as opposed to at the kiosks. However, this strategy should be planned carefully, considering market behavior, market readiness for technology acceptance, and infrastructure. In fact, advanced technology might appear intimidating and fearsome to some markets, as such older people and lower-middle-class groups. What may be convenient for restaurants could become a hurdle for customers, resulting in reduced satisfaction and fewer return usage.

The limitations of this study should be considered from the perspective of the study's focus. It is important to note that this study does not specifically investigate SSK for individual restaurant brands. In reality, SSK varies significantly among different brands, leading to distinct customer experiences. Therefore, future research should aim to gather customer perspectives from specific brands to ensure a level playing field. Additionally, our study only focuses on five fast food brands due to the circumstances in 2022, during which only these brands offered SSK. However, as of 2025, an increasing number of restaurants have adopted SSK, not limited to fast food establishments. Therefore, forthcoming research should identify the current market landscape and include all relevant brands in its scope.

Further, the majority of respondents' gender in this study are female and younger people. The next research

should consider obtaining a similar ratio between male and female respondents to get unbiased results, including proportional age groups. Moreover, we do realize the low sample size gathered in this study. This is particularly because we were using an online survey, which was considered a new norm during the time this study was conducted in 2022. Not everyone is willing to engage in a non-face-to-face survey. Also, SSK is quite a new thing in Indonesia market, and thus not everyone fits as sample criteria. Therefore, future studies should consider obtaining more samples. Moreover, this present study does not explore potential differences across demographic groups. Thus, a next study could explore SSK adoption across different customer segments or in other regions of Indonesia, including investigating based on demographic group, to better provide valuable insight into the industry. To add, this study emphasizes the primary data solely from the quantitative questionnaire. Future studies can consider combining the mixed method with additional open interviews to obtain more comprehensive respondents' perspectives and opinions and therefore enrich the findings.

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