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Human and Technology Interaction: Consumer Perception Toward the Touch Screen Ordering Kiosk in Fast Food Restaurant

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Abstract: The adoption of kiosks is getting common, but some uncertainty has not been discovered. The purpose of this research is to determine factors that influence the consumers' perception of the features of touch screen ordering kiosks and identify the most critical element among the consumers' perception of features of touch screen ordering kiosks. The factors that influence consumer perception encompass perceived usefulness, perceived ease of use, perceived enjoyment, and perceived risk. It is used to measure the consumers' perception factor toward the design of the interface, security system, and responsiveness. This study investigates the consumer's inclination via online questionnaires with a total of 330 online survey questionnaires. However, only 323 respondents are accepted because it only requires the consumer who has used the touch screen ordering kiosk at McDonald's Muar. The result of the study provides empirical evidence on key issues relevant to customers of McDonald's Muar. The finding indicates that perceived usefulness, perceived ease of use, perceived enjoyment, and perceived risk were at a moderate level and there has a significant influence on the consumer perception toward the feature of touch screen ordering kiosks. In conclusion, even though this research is only focused on McDonald Muar, its finding did provide a better understanding of the factors that concerned consumers regarding the touch screen ordering kiosk and can be used as a reference and indication for improvement of the features of McDonald's touch screen ordering kiosk.

Keywords: Self-service kiosk, Perceived usefulness, Perceived ease of use, Perceived enjoyment, Perceived risk

1. Introduction

A touch screen is an electronic visual display that can detect the location of touch either using a finger or stylus within the display area (Krithikaa, 2016). Technologies of the touch screen are applied

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to smartphones, Automated Teller Machine (ATM) machines, and self-checkout lanes at grocery stores (Caprani & Gurri, 2012). Most fast-food restaurants have been implementing touch screen technology such as self-ordering kiosks (SSK) in their restaurant (Cross, 2017). According to (Mat, Zulqernain, & Mohd Zaid, 2016), it shows a high percentage of people are eating fast food as their main meal in Malaysia. Subsequently, there is a need to understand consumer perception toward the implementation of the touch screen ordering kiosk in fast food restaurants.

The touch screen ordering kiosk is a fully automated machine that shows e-menus which are considered to be more eco-friendly. A touch screen ordering kiosk is a physical device that offers people self-service access to products and services. It is a device that can react to input commands independently. The self-service kiosk is a device that displays an electronic menu, simplifying the ordering system, and providing direct payment service for its customers (Torres, 2016). The adoption of self-service technology (SST) is a new experience for its users. Its ease of use, increase customization, and reduction of the waiting time are added advantages (Vakulenko et al, 2019). Most restaurants use SST to enhance their customers' experience. In big cities, the touch screen ordering kiosk is installed on the floor or at the tables of fast-food restaurants (Kim *et al.*, 2013).

Besides, it can avoid the problems of miscommunication between the customers and waiters (Shriwas *et al.*, 2014). It is useful to help those customers who are not conversant in speaking English. When a customer has made an order, the information will be sent directly to the kitchen (Hao *et al.*, 2017) which can reduce the mistakes of ordering dishes (Torres, 2016). The dishes ordered and their total sum are also listed in detail on the screen of SSK. Customers can choose to pay cash via counter or scan code (Kim *et al.*, 2013). It shows that all the functions were integrated into SSK, and it can fully replace human service.

The implementation of touch screen ordering kiosks has tremendously revolutionized the food service industry in Malaysia. This study discussed the consumer perception toward the feature of touch screen ordering kiosks, which still lacks focus on the feature of the kiosk. It is focused on the consumer's perception such as how consumers feel while using the touch screen ordering kiosk (Chang *et al.*, 2015). The understanding of consumer's perception is focused on the aspect of consumer's concerns which will affect their perception of the features of the kiosk. It is difficult to measure consumers' perception, it only can indicate in the form of how they perceived the value provided by the touch screen ordering kiosk (Zulkifly, 2017).

First, and foremost, the implementation of touch screen ordering kiosks requires high initial investment expenses which are not included in indirect expenses such as maintenance fees (Cross, 2017). Furthermore, it is extremely crucial to maintain the system so it can continue to serve the customers, if not there will be disruption in the ordering process (Chan *et al.*, 2017). Even though it can reduce labor costs in the long term, the implementation of touch screen ordering kiosks requires high initial investment expenses. So far there is no published research comparing the indirect expenses of the implementation of kiosks with the labor costs. Therefore, there are pros and cons when implementing touch screen ordering, in an organization.

Moreover, the implementation of the touch screen ordering kiosk can reduce the waiting time, however, if the customer does not know the way to use either it is their first time using the kiosk it would create a long queue inside the restaurant (Krishen *et al.*, 2010). The installation of touch screen ordering kiosks is designed for millennials, but it creates a huge gap in adoption with the older generation (Hahn, 2016). The general problem is that touch screen ordering kiosk is being implemented in fast-food restaurants, but the consumer perception factors have not been adequately tested. This is because some of the customers feel that the touch screen ordering interface is too complicated and makes them confused (Caprani *et al.*, 2012). Therefore, they prefer conventional services comparing the touch screen ordering kiosk (O'Shea, 2018).

The pandemic of Covid-19 has had an impact on the implementation of the kiosk. The kiosk reduces human contact with a social distance by the adaptation of a touch screen ordering kiosk. The screening order touch screen ordering kiosk is a hard surface that is easy to keep clean with sanitization which can reduce exposure to the disease Covid-19 (Joshi, 2020). Thus, it is easier to maintain social distance by using the touch screen ordering kiosk, as well as reduce physical interaction with others to protect customer privileges (Shin & Kang, 2020).

Normally, human errors or mistakes are common with conventional ordering systems due to miscommunication or language barriers (Chan *et al.*, 2017). Especially during peak hours, the waiting time will increase and make the customer can easily feel irritated with the log queue. The implementation of touch screen ordering kiosks can eliminate human error and increase the speed of service (Chang *et al.*, 2015). Furthermore, most customers will be more tolerant of user mistakes (Sandnes *et al.*, 2010). Hence, it can eliminate the step of communicating with the server to order the food, which can save time and make the customer more comfortable (Baba *et al.*, 2020).

From the discussion above, it can be deduced that touch screen ordering kiosk has yet been focused on consumer perception, nor has it empirically examined to a great extent. This research is intended to explore the consumer's perception of the feature of touch screen ordering kiosks so improvement can be considered to improve efficiency. By understanding the customer perception factors base on Technology Acceptance Model (TAM), it can help in contributing to new knowledge that is related to consumer perceived value of kiosks, but it is also useful in the implementation of touch screen ordering kiosks which can fit customers and enhance the service provided. Thus, in addressing the gap, this study deals with the Technology Acceptance Model (TAM) which also examines the consumer's perception of the features of touch screen ordering kiosks.

Therefore, this research integrates the technology acceptance model (TAM) (Weerasinghe & Hindagolla, 2018) to examine how consumers evaluate the feature of touch screen ordering kiosks (Roy et al, 2018) and discover the aspects that are most concerned by consumers. This study measures consumers' perceptions that are influenced by the theory of TAM. The purpose is to analyze the significant impact of consumer perception factors on the feature of touch screen ordering kiosks. Thus, this study aims; (i) to determine the consumers' perception factors, based on the Technology Acceptance Model (TAM), that influence the feature of the touch screen ordering kiosk, and (ii) to identify the most dominant factors among the factors in TAM that influence the feature of the touch screen ordering kiosk

The scope of this study is to use a quantitative research method to identify factors that influence the consumers' perception of the feature of touch screen ordering kiosks and the most critical element influences consumer perception factor. This research involves 330 respondents who are customers at McDonald's in Wetex Parade, Muar, Johor. The questionnaire was distributed via an online survey.

This study focuses on the consumers' perception of the features of the touch screen ordering kiosk based on the theory of the Technology Acceptance Model (TAM) in a fast-food restaurant. Perceived usefulness (PU), perceived ease of use (PEOU), perceived enjoyment (PE), and perceived risk (PR) are used to identify consumers' perceptions about the features of touch screen ordering kiosks. The consumers will focus on the three main features of the machine; the design of the interface, the security of the system, and responsiveness. The significance of the study will reveal the consumers' perceptions of the features of touch screen ordering kiosks, whether they are due to perceived usefulness (PU), perceived ease of use (PEOU), perceived enjoyment (PE), and perceived risk (PR).

2. Literature Review

2.1 Touch Screen Ordering Kiosk

A touch screen ordering kiosk can be recognized as an artificial intelligence device that can work by itself. It is a device that integrates intelligence technology with cashless transactions in the self-service ordering kiosk. McDonald's had rolled out a service ordering kiosk which can be defined as a touch screen ordering kiosk. The transformation of the restaurant incorporated various new technologies and innovations with customer service concepts. Service ordering kiosks allow customers to place their orders and customize their meals according to their preferences. Service ordering kiosks also provide cashless transactions (Balaji, 2017). It is getting common to provide cashless transactions because it can simplify and integrate payment steps all into one. This implementation also involves better table service to enhance the customer experience at McDonald's. Table service means the servers directly send the meals to the customers. Therefore, customers can enjoy chatting with their friends or have their time in a comfortable environment combined with an exclusive USB mobile charging station. It is shown that McDonald's cares about customer feelings and perceptions regarding their service available.

(a) Function of Touch Screen Ordering Kiosk

There are numerous general functions such as display menu, select order, transactions, and print receipt (Hao *et al.*, 2017):

Display Menu**:** It can display an e-menu with HD pictures of each dish. E-menu also enables one to know the ingredients being used. Besides that, customers also have the privilege to choose the ingredients for themselves (Choi & Lee, 2019).

Select Order: Touch screen ordering kiosk is a technology that allows customers to select and specify their choice directly from the machine (Mat *et al.*, 2016). The kiosk will display their table numbers after they have ordered their food (Shriwas *et al.*, 2014).

Transaction: The kiosk enables consumers to complete transactions without any interaction with service personnel (Baba, 2020). Customers can complete the transaction using the Maybank QR code or pay with an e-wallet by scanning the code (Dinev *et al.*, 2006). It has strong security to reduce transaction risks (Kuciapski, 2017) and protect customers by not divulging their personal information.

(b) Advantages of Implementation of Touch Screen Ordering Kiosk

The adoption of touch screen ordering can remove social friction (Harvard Business Review Home, 2020), reduces queues (Shriwas *et al.*, 2014), improve accuracy, and enhances customer satisfaction. Primarily, a self-service kiosk can remove face-to-face transactions and can help customer remove their fear of negative judgment. Secondly, the implementation of self-service kiosks can reduce long queues during peak lunch hours. By using a self-service kiosk, consumers can reduce the time taken to make an order by minimizing the steps required to make an order. Thirdly, a self-service kiosk can increase the accuracy of the order because the customer selects the order himself.

By using the adoption, it can overcome the challenges and fill the communication gap between the customers and waiters (Torres, 2016). Besides, it helps those customers who are unable to speak English to avoid embarrassing conversations with the servers (Marnewick & Labuschagne, 2005). This study shows that the implementation of the touch screen ordering kiosk brings a myriad of benefits to McDonald's company.

(c) Challenges of Implementation of Touch Screen Ordering Kiosk

There are numerous obstacles to implementing the touch screen ordering kiosk. McDonald's must choose the right manufacturer to ensure the service after sales are available. The kiosk machine must be flexible in design, have the latest model, and have easy installation and servicing. Kiosk design should be simple and easy to access. Besides that, maintenance is one of the main considerations before the purchase is made. McDonald's must retrain its workers to use the kiosk (Cross, 2017). It also must educate its staff to overcome the problem of a kiosk. Its employees must be more familiar with the touch

screen ordering kiosk so that when customers have problems, they can show the correct way to use it. Acceptance of customers is one of the biggest challenges for its implementation.

2.2 Consumer Perception toward the Feature of Touch Screen Ordering Kiosk by Using TAM

Service offers before and after will change the same customer's perceptions after the purchase (Mmutle & Shonhe, 2017). Research shows that customer expectations are one factor that will change consumers' perceptions (Rodríguez *et al.*, 2018). The technology of self-service kiosks has been recognized as a tool that can reduce problems by offering a new and unique experience (Kim *et al.*, 2016). The feature of touch screen ordering kiosks is the aspect that leads to a different perception. The primary features of a machine are the design of the interface, security system, and responsiveness.

(a) Consumer Perception Toward the Feature of Touch Screen Ordering Kiosk Influenced by Perceived Usefulness

Perceived usefulness (PU) can be defined as the degree to which a person believes that using a certain technology will enhance his or her performance (Pantano & Di Pietro, 2012). It is one of the fundamental ancient factors of technology usage and adoption (Isaac *et al.*, 2016). Many previous studies showed that perceived usefulness has a positive relationship with customer perception and intention of using SOK (Yoon & Choi, 2020; Taufik & Hanafiah, 2019). Perceived usefulness is the extent to which consumers believe the technology of touch screen ordering kiosks will enhance service performance (Cho, 2011). There are several studies such as Taufik and Hanafiah (2019), Rastegar (2018), and Jeon *et al.* (2020) indicated that perceived usefulness has a significant influence on consumer perception toward the use of a touch screen ordering kiosk. Previous studies identified perceived usefulness as one of the major drivers of perception toward touch screen ordering kiosks. It is difficult to measure perceived usefulness in touch screen ordering kiosks because respondents must participate in using the touch screen ordering kiosk (Jamil, 2019). Therefore, based on the above statements, the first hypothesis is developed as follows.

H1: Perceived usefulness significantly influences consumer perception towards the features of the touch screen ordering kiosk.

(b) Consumer Perception Toward the Feature of Touch Screen Ordering Kiosk Influenced by Perceived Ease of Use

Perceived ease of use (PEOU) is referred to the degree to which a person believes that using a particular system would be free of effort (Isaac *et al.*, 2016). It is also used to drive the consumers' attitude towards using touch screen ordering (Hussain *et al.*, 2016). These are antecedents to user acceptance of technology common use to measure the acceptance and perception of consumers. Past studies indicated that there has been a positive influence on behavioral intention toward touch screen ordering kiosks at fast-food restaurants (Seo, 2020). Past studies revealed that self-service kiosk ease of use might affect customer usage behavior based on the perspectives of the technology acceptance model (TAM) (Taufik & Hanafiah, 2019). Considering this, the second hypothesis is developed as follows:

H2: Perceived ease of use significantly influences consumer perception towards the features of the touch screen ordering kiosk.

(c) Consumer Perception Toward the Feature of Touch Screen Ordering Kiosk Influenced by Perceived Enjoyment

Perceived Enjoyment (PE) is defined as the fun or pleasure derived from using technology (Joe *et al.*, 2020). PE implies the degree to which a person's use of a touch screen ordering kiosk is seen to be

enjoyable (Hussain *et al.*, 2016). Past studies by Han *et al.* (2020) indicate the construct of fun was defined as the degree to which the user experiences enjoyment while using the touch screen ordering kiosk. Tsai and Gheeta (2019) indicate perceived usefulness, perceived ease of use, and perceived enjoyment as major factors driven by the result of an intention to use a touch screen ordering kiosk. Past studies have shown that users' happiness while using the touch screen ordering kiosk has a huge impact on the intention of continues using the touch screen ordering kiosk (Hussain *et al.*, 2016). There is an argument between behavioral science and psychology on the importance of explanatory variables in technology (Joe *et al.*, 2020). Previous studies examined the affective role of perceived enjoyment, the impacts of social influence, and perceived risk as antecedents of intention to use the kiosk (Koenig-Lewis *et al.*, 2015). Based on this, the third hypothesis is developed as follows

H3: Perceived enjoyment significantly influences consumer perception towards the features of the touch screen ordering kiosk.

(d) Consumer Perception Toward the Feature of Touch Screen Ordering Kiosk Influenced by Perceived Risk

Perceived risk (PR) is to be defined as a combination of uncertainty regarding consequences after selection and the seriousness of the consequences (Jeon *et al.*, 2020). There is a potential risk of using touch screen ordering kiosks for consumers. It includes the risk of transaction failure or wrong order meals due to human error or technical error (Blut *et al.*, 2016a). According to (Sultan & Uddin, 2011), uncertainty plays a role in adoption decisions in the form of perceived risk, and construction is expected to be of considerable significance to service touch screen ordering kiosks. There is a potential risk of using touch screen ordering kiosks for consumers. Previous studies show that the core predictors of consumer perception and intention are influenced by perceived risk and trust (Koenig-Lewis *et al.*, 2015). There is a potential financial risk associated with the transaction of the touch screen ordering kiosk. Past studies indicate the claim in the enjoyment of adopting touch screen ordering kiosks can decrease anxiety, in turn, reduce the perceived risk (Koenig-Lewis *et al.*, 2015). Based on this, the fourth hypothesis is developed as follows:

H4: Perceived Risk significantly influences consumer perception towards the features of touch-the-screen ordering kiosk.

2.3 Feature of Touch Screen Ordering Kiosk

(a) Design of Interface

The interface design is extremely important for a kiosk to let a customer directly interact with the SSK interface (Zhang, 2011). The interface is the feature that has direct contact with consumers when they are using the kiosk. An attractive interface can give a good impression to first-time users.

(b) Security System

Security of the system concerning the protection of privacy and perceived risk in the transaction (Pantano & Di Pietro, 2012), Online transaction and privacy information is the prime concerning factor that dictates consumer intention to use self-service kiosk (Bagga & Dc, 2013).

(c) Responsiveness

Responsiveness is the most significant element to measure the overall performance of a device (Moyano-Fuentes *et al.*, 2016). The efficiency of performance leads to different consumer outcomes such as satisfaction and intention of use (Vakulenko *et al.*, 2019). Hence, it proves that the responsiveness of touch screen ordering kiosks is one of the significant elements that consumers are concerned about.

2.4 Conceptual Framework and Hypothesis

The framework in Figure 1 describes the relationship between the dependent variables and the independent variable.

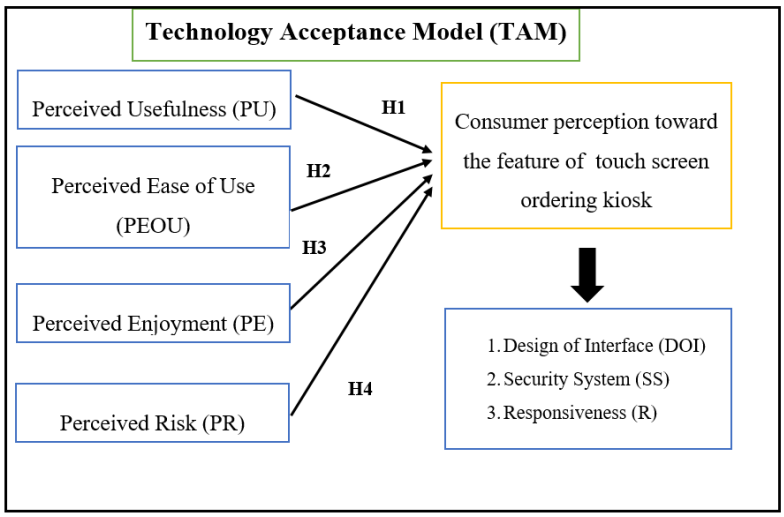

Figure 1: Conceptual framework

Research hypothesis for this study is as follows:

H1: Perceived usefulness significantly influences consumer perception towards the feature of touch screen ordering kiosk
H2: Perceived ease of use significantly influences consumer perception towards the feature of touch screen ordering kiosk
H3: Perceived enjoyment significantly influences consumer perception towards the feature of touch screen ordering kiosk
H4: Perceived Risk significantly influences consumer perception towards the feature of touch screen ordering kiosks.

3. Research Methodology

3.1 Research Design

Quantitative methods emphasize objective measurements and the statistical analysis of data collected via a questionnaire or by manipulating pre-existing statistical data using computational techniques. It gathers all the numerical data and generalizes it across groups of people or to explain a particular phenomenon. In this research, the quantitative method involves collecting data from the respondents. Primary data is collected from a large population using online Google Forms or direct paper surveys. This study used a quantitative method to collect data from the target population. It can categorize and analyze statistical figures including frequency, mean, standard deviation, and percentages to clarify the results of the study. Quantitative research is significant to have a better understanding of its use in the field (Boeren, 2018). The software of the statistical package for the social sciences (SPSS statistical software) could be used to analyze the data collected.

3.2 Research Process

The following are six steps used to conduct this research (Figure 2):

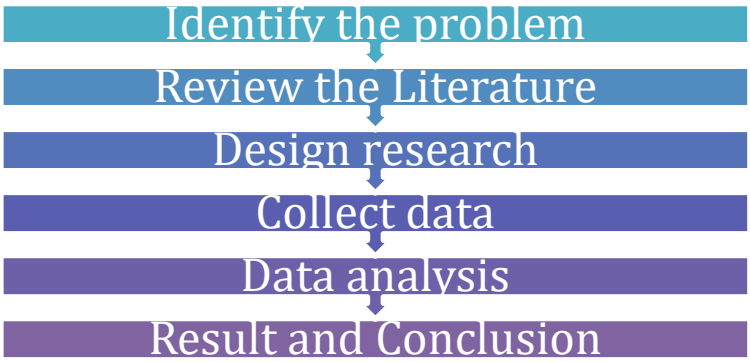

Figure 2: Flowchart of the research process

3.3 Population and Sampling Technique

The target population in this study is the consumer of McDonald's located at Wetex Parade in Muar town. It specifically focuses on those who have been using the touch screen ordering kiosk and are customers of McDonald's in Wetex Parade, Muar. This location is selected because it is the main shopping center in Muar town with the endless flow of people going in and out of the complex. Therefore, purposive sampling was selected because samples were chosen from a population. After all, respondents must fit the profile of Muar residents or Muar visitors. Moreover, purposive sampling is straightforward and easy to conduct. The study sample is selected from all the customers of McDonald's, Wetex Parade. The total population of McDonald's customers per week is 2300 people. The purposive sampling method has been employed in this study.

3.4 Contract Measurement

The instrument for data collection is an online questionnaire. The questionnaire will be divided into section A, section B, and section C. Section A focuses on the demography of consumers, and Section B consists of four-part of which B (I) perceived usefulness (PU), B (ii) perceived ease of use (PEOU), B (iii) perceived enjoyment (PE) and B (iv) perceived risk. The questionnaire focuses on factors that influence consumers' perception of touch screen ordering kiosks. Section C is divided into 3 parts of which C (i) Design of Interface, C (ii) Security of payment system, and C (iii) Responsiveness. The respondents will give responses by rating the statement by using strongly agree, agree, neutral, disagree, and strongly disagree. An online google questionnaire is the most suitable instrument because it takes less time compared to other methods, especially during the period of Movement Control Order (MCO).

3.5 Data Analysis

The data were analyzed using SPSS software. SPSS is a short form of a statistical package for the social sciences. It is a set of software programs that analyze and manage a large amount of data with comprehensive statistical analysis. The result can be converted into a table and graphical chart that shows the analyzed data in a simple form. Descriptive statistics investigate the basic features of respondents in the form of mean, percentage, and standard deviation. Correlation analysis is used to infer statistics to identify the relationship between variables.

4. Results and Discussion

4.1 Demographic Analysis

In this research, the demographic information of the respondents has been identified in section A of the questionnaire. There was a total of eight questions asked under section A which included gender,

age or generation, race, highest education level, employment status, frequency of visits to McDonald's, preference ordering system, and have ever used a touch screen ordering kiosk before. There was a total number of 330 respondents participating in the survey.

(a) Consumer Using Touch Screen Ordering Kiosk

Table 1 shows that 323 (97.9%) respondents used McDonald's touch screen ordering kiosks before comparing to the other 7 (2.1) respondents. This question is the utter significance that will decide whether the continuous question can be the answer or not. Therefore, those respondents who never used the touch screen ordering kiosk before will not be able to continue answering for the next section.

Table 1: Consumer using touch screen ordering kiosk

		Frequency	Percent (%)	Valid Percent	Cumulative Percent
Valid	Yes	323	97.9	97.9	97.9
	No	7	2.1	2.1	100.0
	Total	330	100.0	100.0	

4.2 Reliability Analysis

Reliability is to test how consistent a measure instrument measures for the concept of measuring. The reliability test for the pilot test was 27 items and Cronbach's Alpha is 0.957, which is considered excellent.

Table 2: Cronbach's alpha consistency table

Cronbach' Alpha	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Table 3: Result of reliability test

Variables	Cronbach's Alpha	Number of items
Perceived Usefulness (PU)	0.779	4
Perceived Ease of Use (PEOU)	0.928	3
Perceived Enjoyment (PE)	0.748	3
Perceived Risk (PR)	0.770	2
Design of Interface (DOI)	0.709	5
Security System (SS)	0.932	5
Responsiveness (R)	0.749	5
Overall result	0.957	27

4.3 Test of Significance

Test of significance is the method to identify the significance level of the null hypothesis and whether the null hypothesis is accepted or rejected. If P-value < 0.05, the test will be significant. If P-value > 0.05. The test is not significant which stated that the distribution data is normal.

4.4 Normality Test

A normality test is used to determine whether the data collected for research is normally distributed or non-normally distributed. Shapiro-Walk test is the more appropriate method for a small sample size

(< 50 samples), while the Kolmogorov-Smirnov test is used for n ≥ 50. In this research, the valid sample size is 323 respondents. Therefore, Kolmogorov-Smirnov is used to test the normality.

Table 4: Normality test (Kolmogorov-Smimov)

	Kolmogorov-Smirnov			Result	Shapiro-Wilk		
	Statistic	df	Sig.		Statistic	df	Sig.
Perceived Usefulness (PU)	0.154	323	.000	Not Normal	.906	323	.000
Perceived Ease of use (PEOU)	0.198	323	.000	Not Normal	.857	323	.000
Perceived Enjoyment (PE)	0.207	323	.000	Not Normal	.825	323	.000
Perceived Risk (PR)	0.265	323	.000	Not Normal	.805	323	.000
Design of interface (DOI)	0.163	323	000	Not Normal	.899	323	.000
Security System (SS)	0.170	323	000	Not Normal	.889	323	.000
Responsiveness (R)	0.166	323	000	Not Normal	.880	323	.000

4.5 Regression Analysis

Regression analysis is used for explaining the relationship between one or more independent variables and a single dependent (Faraway, n.d.). Regression is using an ANOVA to compare the means between four groups of the independent variable to examine whether there is a significant difference in perception toward the design of the interface, security system, and responsiveness.

Table 5: Regression of design of interface (ANOVA)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.592	4	13.398	100.655	.000b
	Residual	42.328	318	.133		
	Total	95.920	322			

a. Dependent Variable: DOI

b. Predictors: (Constant), PR, PEOU, PU, PE

The coefficient's most important value is the Beta value, t value, and significance value. The most important is a significant value which shows that PU, PEOU, PE, and PR have significant value to the design of the interface. The result shows that VIF 1 is 2.679, which is less than 10. The quality result that VIF 1 or less than 10 means the value is acceptable.

Table 6: Regression of Security system (ANOVA)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.511	4	21.878	102.054	.000b
	Residual	68.170	318	.214		
	Total	155.681	322			

a. Dependent Variable: SS

b. Predictors: (Constant), PR, PEOU, PU, PE

The coefficient's most important value is the Beta value, t value, and significance value. The most important is the significant value which shows that PU, PEOU, PE, and P have significant value to the security system. The result shows that VIF is 1.835 to 2.679, which is less than 10. The quality result that VIF 1 or less than 10 means the value is acceptable.

Table 7: Regression of responsiveness (ANOVA)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63.844	4	15.961	103.781	.000b
	Residual	48.907	318	.154		
	Total	112.750	322			

a. Dependent Variable: R
b. Predictors: (Constant), PR, PEOU, PU, PE

The coefficient's most important value is the Beta value, t value, and significance value. The most important is the significant value which shows that PU, PEOU, PE, and PR have significant value to responsiveness. The result shows that VIF is 1.853 to 2.679, which is less than 10. The quality result that VIF 1 or less than 10 means the value is acceptable.

4.6 Summary of Hypothesis Testing

Table 8 shows the summarized result of the hypothesis tests. All the p-values above are less than 0.05, so all hypothesis is accepted. It means all the data collected is significant. In addition, each of the hypotheses has a positive relationship between the variables. The highest standard coefficient was H3 with a 0.982 value for perceived enjoyment which is the most significant factor affecting consumers' perception of the feature of touch screen ordering kiosks. Then followed by the influence of perceived risk, perceived usefulness, and perceived ease of use on a feature of touch screen ordering kiosks with 0.371, 0.202, and 0.076 standardized coefficients best value, respectively.

Table 8: Result of hypothesis test

	Hypothesis	DOI	SS	R	Total average	All features	All features	Accepted / Rejected
H1	Perceived usefulness significantly influences consumer perception towards the feature of touch screen ordering kiosk.	0.315	0.096	0.194	0.202	0.000	2.531	Accepted
H2	Perceived ease of use significantly influences consumer perception towards the feature of touch screen ordering kiosk.	-0.008	0.124	0.111	0.076	0.000	2.537	Accepted
H3	Perceived enjoyment significantly influences consumer perception towards the feature of touch screen ordering kiosk.	0.280	0.610	0.275	0.982	0.000	2.679	Accepted
H4	Perceived Risk significantly influences consumer perception towards the feature of touch screen ordering kiosks.	0.265	0.557	0.291	0.371	0.000	1.853	Accepted

4.7 Discussion

This research discusses the factors that influence consumer perception toward the feature of touch screen ordering kiosks and the most critical factor influencing consumer perception of the feature of touch screen ordering kiosks by using the technology acceptance model (TAM) in McDonald's Muar. The aim of conducting this study is to prove that independent variables (perceived usefulness, perceived ease of use, perceived enjoyment, and perceived risk) have a significant impact on the feature of touch screen ordering kiosks which are dependent variables (design of interface, security system, and responsiveness). In the following section, the first and second objectives are summarized with the research findings. It was used to examine whether the research objective has been achieved or rejected.

(a) Objective 1

The first objective is to find whether the four independent factors which are perceived usefulness, perceived ease of use, perceived enjoyment, and perceived risk are the important criteria that would affect the consumer perception toward the design of the touch screen ordering kiosk. The result indicates the central tendency of the mean level for independent variables by rating to identify the most common variable.

There were 323 respondents involved which shows that 97.88% were accepted among 330 questionnaires that have been distributed online. Table 9 indicates the average mean score achieved by each factor. Each of the factors can be categorized as a high level refers to the level of mean measurement.

Table 9: Average mean score

Factors	Average Mean Score
Perceived Usefulness	4.38
Perceived Ease of Use	4.35
Perceived Enjoyment	4.44
Perceived Risk	4.34

The result of regression indicates the standard correlation and variance inflation factor (VIF) results. The result shows Table 10 VIF 1 or below 10 mean acceptable. Based on the measurement variance inflation factor, all the variances in this research belong to moderately correlated because it is between 1 to 5 VIF.

Table 10: Result of variance inflation factor

Factors	Variance Inflation Factor		
IV/DV	DOI	SS	R
Perceived Usefulness	2.531	2.531	2.531
Perceived Ease of Use	2.537	2.537	2.537
Perceived Enjoyment	2.679	2.679	2.679
Perceived Risk	1.853	1.853	1.853

The standard coefficient from the result shows the interaction term is significant between a factor and the response depending on the other factors in the term. The significance level is referred to as a value that is less than or equal to the significance level which is $p \leq 0.05$, it can conclude that there is a statistically significant association between the dependent variables and independent variables. The significance level is referred to as a value that is less than or equal to the significance level which is $p \leq 0.05$, it can conclude that there is a statistically significant association between the dependent variables and independent variables.

Hypothesis 1 (H1): Perceived Usefulness Significantly Influences Consumer Perception Towards the Feature of Touch Screen Ordering Kiosk

The perceived usefulness has a significant impact on consumer perception of the feature of touch screen ordering kiosks. The result was found that the standard coefficient data, the average of beta value = 0.202 and significance value p = 0.00 which is p is less than or equal to 0.05. Based on the result, the standard coefficient shows the level of influence on the dependent variable will be affected by the independent variables. The p-value is less than 0.05, thus it means H1 is accepted. This finding is in line with the finding from Seo (2020) and Taufik and Hanafiah (2019) that perceived usefulness influences consumer perception towards the feature of touch screen ordering kiosk.

Hypothesis 2 (H2): Perceived Ease of Use Significantly Influences Consumer Perception Towards the Feature of Touch Screen Ordering Kiosk

The result shows that p = 0.000, therefore the outcome is acceptable. It proves that hypothesis 2, which is perceived ease of use has a significant influence on consumer perception toward the feature of touch screen ordering kiosks (design of interface, security system, and responsiveness) is accepted. The outcome for the standard coefficient for average beta value = 0.076, describes the affected degree increase by the predictor variables. Thus, there various previous studies show that perceived ease of use has a significant impact on consumer perception based on the theories of TAM. This finding is in line with the finding from Seo (2020) and Taufik and Hanafiah (2019) that perceived ease of use influences consumer perception towards the feature of touch screen ordering kiosk.

Hypothesis 3 (H3): Perceived Enjoyment Significantly Influences Consumer Perception Towards the Feature of Touch Screen Ordering Kiosk

The result shows that p = 0.000, therefore the result of hypothesis 3 is accepted. It proves that perceived risk has a significant influence on consumer perception toward the features of touch screen ordering kiosks (design of interface, security system, and responsiveness) are accepted. The outcome for the standard coefficient for average beta value = 0.982, describes the affected degree increase by the independent variables. Thus, hypothesis 3 was supported as the most essential factor which is perceived enjoyment has a significant impact on the consumer perception of the feature of touch screen ordering kiosks. This finding is in line with the finding of Hussain et. al. (2016) and Koening-Lewis et. al. (2015) that stated perceived enjoyment influences consumer perception towards the feature of touch screen ordering kiosk.

Hypothesis 4 (H4): Perceived Risk Significantly Influences Consumer Perception Towards the Feature of Touch Screen Ordering Kiosk

The significant result shows that p = 0.000, hence the outcome for hypothesis 4 is acceptable. Perceived risk has a significant influence on consumer perception toward the features of touch screen ordering kiosks (design of interface, security system, and responsiveness) are accepted. The result for the standard coefficient of average beta value = 0.371, represents the degree affected by the independent variables. This finding is in line with the finding from Koening-Lewis et. al. (2015) that stated perceived risk significantly influences consumer perception towards the feature of touch screen ordering kiosk.

Based on the above finding confirmed that perceived usefulness, perceived ease, perceived enjoyment, and perceived risk are the consumer perception factors that influence the feature of touch screen ordering kiosks. This finding fulfills the first objective of the research.

(b) Objective 2

The second objective is to identify the most dominant factors among the factors in TAM that influence the features of the touch screen ordering kiosk.

Based on Table 11 indicate the average mean score of the 4 factors influencing the consumer perception of the design of the features of the touch screen ordering system. The highest mean is perceived enjoyment with a value of 4.44, followed by perceived usefulness in the second place with a value of 4.38, perceived ease of use in the third place with a value of 4.35, and perceived risk in the fourth place with a value of 4.34 respectively. Therefore, perceived enjoyment is the main factor that influences the design of the features of the touch screen ordering kiosk.

Table 11: Summary of analysis of factors influencing consumer perception toward the design of the feature of touch screen ordering kiosk

Factors	Average Mean Score	Ranking
Perceived Usefulness	4.38	2
Perceived Ease of Use	4.35	3
Perceived Enjoyment	4.44	1
Perceived Risk	4.34	4

Based on Table 12 result of the coefficients indicated that perceived enjoyment has the strongest factor compared to the other three independent variables which have a positive influence on the consumer perception toward the touch screen ordering kiosk. Therefore, it shows that perceived enjoyment is the dominant factor that influences consumer perception towards the feature of touch screen ordering kiosks. This finding fulfills the second objective of the research.

Table 12: Summary of analysis on the most dominant factors influencing the consumer perception of the feature of touch screen ordering kiosk

Factors	The average value of the Standard Coefficient (Beta value)	Ranking
Perceived Usefulness	0.202	3
Perceived Ease of Use	0.076	4
Perceived Enjoyment	0.982	1
Perceived Risk	0.371	2

5. Conclusion

In conclusion, the hypotheses and objectives in this research were achieved by the overall finding and results. In addition, it can summarize four independents that are a reasonable influence on consumer perception towards the feature of touch screen ordering kiosks. The second objective was proven by the result of the standard coefficient. The based analysis showed that the critical factor that influences consumer perception towards the feature of the touch of the screen ordering kiosk is perceived enjoyment.

Even though this research is only focused on McDonald Muar, its finding did provide a better understanding of the factors that concerned consumers regarding the touch screen ordering kiosk and can be used as a reference and indication for improvement of the features on McDonald's touch screen ordering kiosk. The findings also can be used as a reference for other fast-food restaurants before they adopt the touch screen ordering kiosks.

Further research can be conducted based on similar research in a different context such as extending the scope of the target respondent to different population areas or different sectors in touch screen ordering kiosks and to be compared with the present result of the research.

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