

Customer Satisfaction in Using Digital QR Code Menu Ordering in Restaurant

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Zurena @ Rena Shahril*

UiTM Puncak Alam, Faculty of Hotel and Tourism Management
zurena511@uitm.edu.my

Nur Syazwanie Arissa binti Remey Den

UiTM Puncak Alam, Faculty of Hotel and Tourism Management
2020476466@student.uitm.edu.my

Nur Ainal Syuhada binti Shamshul Bahari

UiTM Puncak Alam, Faculty of Hotel and Tourism Management
2020836828@student.uitm.edu.my

Noorfarah Ilyana binti Mohd Asnawi

UiTM Puncak Alam, Faculty of Hotel and Tourism Management
2020462376@student.uitm.edu.my

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Abstract

This study aims to examine the factors determining customer satisfaction to use digital QR code on menus in the restaurants as an alternative ordering. The rapid growth of digital technology in the last two decades has become a factor that encouraged individuals and groups to utilize digital technology from devices or technological tools as effectively and efficiently as possible to facilitate the activities and business processes being carried out. This research used the non-probability sampling technique with a random sampling of 377 restaurants' customers. In addition, this study used data analysis techniques using SPSS version 28, which produced descriptive statistics, reliability analysis, as well as Pearson correlations. The results indicated that all factors, perceived ease of use ($r = 1$) and perceived usefulness ($r = 0.589$), were positively related to customer satisfaction to use digital QR code on menus in the restaurants. By emphasizing and increasing customer awareness with digital QR Code technology, there is a need for socialization efforts and education for restaurant operators and customers to know and realize that digital QR code technology can be used for better menu ordering in terms of convenience, usability, and ease of use as an alternative to order food and beverages. Practically, the results of this

study also play a role in encouraging the modernization of menu ordering to be taken into consideration by restaurant operators as a plan for developing alternative menu ordering using digital QR Code Technology.

Keywords:

Customer Satisfaction, Restaurant, Perceived Ease of Use, Perceived Usefulness

1 Introduction

The hospitality industry is the world's largest and most important sector, with high competitiveness (Varevka, 2019). It encompasses businesses selling food and drink, as well as services like restaurants, hotels, theme parks, and foodservice (Turanligil & Farooq, 2019). Foodservice is a dominant segment of the industry, representing a large part of the economy and growing rapidly. There are two types of foodservice establishments: commercial and non-commercial. Commercial foodservice focuses on creating food and beverages and selling them to customers, while non-commercial foodservice supports and adds "hosts" like institutions (Beth Egan, 2023).

The restaurant sector is increasingly based on creation and experience, enhancing the value of simple dishes and retaining customers. Managers need to make decisions that guarantee the services of restaurants and food, and customer experience is closely linked to the use of modern technology. The millennial era has seen the accelerated use of technology, including social media and QR codes, which convey and receive information quickly (Gonzalez et., al, 2022).

The research study focuses on the QR Code app in restaurants, created by Demo Wave in Japan in 1994. QR Code, meaning "Quick Response," is a technology that allows for automatic, easy, and accurate data transportation. It was created to make it easier for the world to scan QR codes without any charges or obligations to Denso.

Perceived ease of use refers to the mental effort required to accept new technology and is closely related to motivation found in the inner person. It is closely related to the process of improving outcomes. Perceived usefulness is a subjective perception of the user's ability to increase efficiency in tasks using a particular technology. It focuses on motivation, especially externally, which can provide significant or no benefit from the use of a system (Amin, M., Rezaei, S., & Abolghasemi, M. et., al, 2014).

Customer satisfaction is a personal result of any marketing activity that provides benefits, linking the purchase process and consumption with a phenomenon after the purchase. Meeting customer needs is an important component in marketing, as it impacts future behavior. The use of new technologies, particularly digital menus, has allowed hoteliers to form a dialogue between restaurants and customers, maintaining strong relationships and increasing customer satisfaction and loyalty (Lou et al., 2017).

This study aims to contribute to both theoretical and practical aspects of the foodservice industry, specifically in the use of QR codes. From an academic perspective, QR codes can enhance knowledge and performance, improve user learning, and

increase convenience in processes like payments and bookings. Additionally, they can provide Malaysia with an opportunity to switch from manual methods to QR codes. However, despite differences in ethnicity, culture, and economy, researchers may need to focus on widespread and acceptable use of QR codes.

2 Literature Review

The QR Code (Banu et al., 2018; Surekha et al., 2015) method has grown in popularity due to its increased readability and storage capacity compared to traditional barcodes. A QR code (Quick Response) is a matrix barcode that can be read by either dedicated QR barcode readers or high-resolution cameras on smartphones. The QR code consists of black modules ordered in a square pattern on a white background. QR codes contain text, alphanumeric characters, URLs, or other data. QR code generation requires a large amount of data encoded, a small printer size, support for Chinese/Japanese letters, dirt and damage resistance, readability from every direction in 360 degrees, and a structure add a feature.

2.1 Perceived Ease of Use

Perceived ease of use (PEOU) is a key construct for evaluating user acceptance of technology, particularly in the context of QR codes. PEOU indicates that a product, technology, or application should provide a solution, meet demand, or provide something of value. The increasing use of QR codes in consumer culture has led to a need for quick service and user-friendly technology. Perceived Ease of Use According to Siagan et al. (2022a), perceived ease of use is based on the Intention of use, information sharing, and customer loyalty. The research results in Indonesia explain that perceived ease of use will increase the use of digital users in Indonesia (Husainah et al., 2023; Indrasari et al., 2022). Perceived ease of use can facilitate and make adopting technology innovations more possible (Ratten, 2014; Zuniarti et al., 2021). Users will experience the benefits of information technology in several foreign cultures with the tutor's perceived excellence (Alhumaid & AAssali, 2023). The use and interaction between users and intelligent home systems can indicate ease of use (Hubert et al., 2019; Kim & Chiu, 2019). Previous research by Polatoglu and Ekin (2001) finds that the lower the convenience or, the more complex the ease of use received by users when using the technology, the lower the level of users to use the technology.

***H1:** There is a significant relationship between the perceived ease of use (understandable, flexible, easy to use, intelligence) towards customer satisfaction in using QR code menu ordering in restaurants.*

2.2 Perceived Usefulness

Perceived usefulness is an objective potential that the technology will help customers accomplish their objectives more effectively. Perceived usefulness, according to the Technology Acceptance Model (TAM), can be measured by how the system helps employees increase efficiency and performance in job tasks. In an online context,

perceived usefulness includes effectiveness, productivity, job performance, and time consumption. Theoretically, perceived usefulness is the level of confidence in performing an activity beneficial for the service users (Zhang et al., 2014; Zuniarti et al., 2021). Information technology's advantage is the benefit obtained by perceived usefulness from information technology (Venkatesh & Davis, 2000). According to Kowalczyk (2018), perceived usefulness is how the users believe that using the innovative speaker system will increase their productivity and performance. This additional model confirms that perceived usefulness has a significant effect on the perceived Intention to use, according to Kumar et al. (2020), Li et al. (2019), Mansur et al. (2021), and Sophea et al. (2022). However, other research by Al-Bashayreh et al. (2022), Ismail (2016), and Buabeng-Andoh, (2021) finds that perceived usefulness has an insignificant effect on the perceived Intention to use.

H2: There is a significant relationship between the perceived usefulness (effectiveness, productivity, job performance, time consuming) towards customer satisfaction in using QR code menu ordering in restaurants.

2.3 Customer Satisfaction

Customer satisfaction is a personal result of any marketing activity that provides benefits, linking the purchase process and consumption with a phenomenon after the purchase. Meeting customer needs is an important component in marketing, as it impacts future behavior. The use of new technologies, particularly digital menus, has allowed hoteliers to form a dialogue between restaurants and customers, maintaining strong relationships and increasing customer satisfaction and loyalty.

The relationship between perceived ease of use (PEOU) and customer satisfaction in using digital QR code menu ordering in restaurants is crucial for understanding user acceptance of new technologies. PEOU is influenced by a user's perceived favorability for a technology, making it more likely to be used. Experience plays a significant role in determining ease of use, and more experienced users may negate PEOU's impact. PU can change over time, but TAM variables are a good predictor of user acceptance regardless of culture or geography.

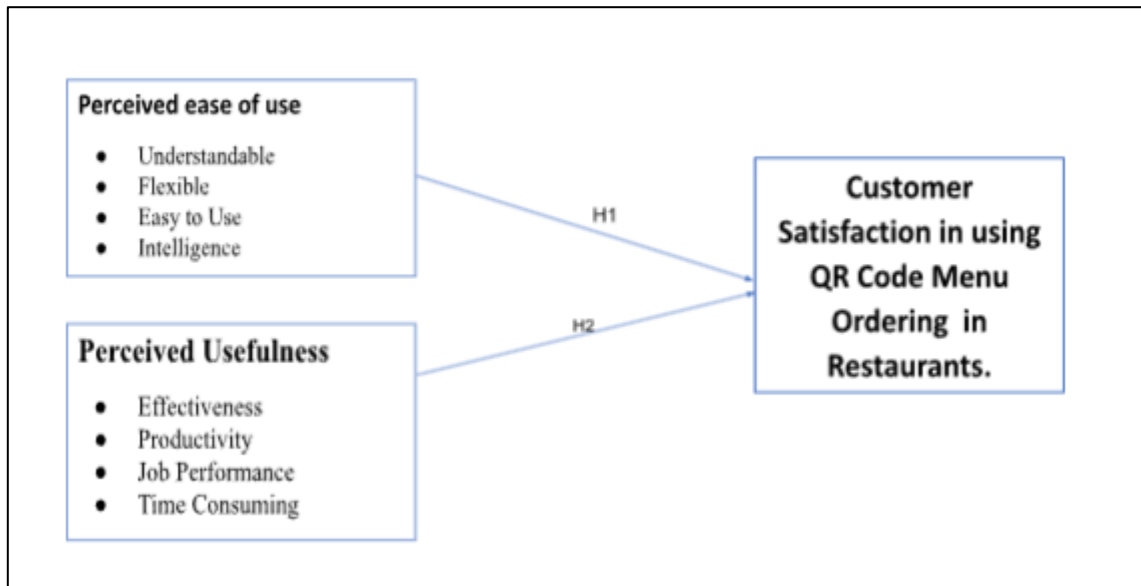


Figure 1: A Study of Framework

3 Methodology

This research was quantitative because it was conducted to test the hypotheses concerning perceived ease of use, usefulness, and customer satisfaction to use QR code menu ordering in restaurants. The entire variables studied came from the customer acceptance of the technology of digital QR Code menu ordering in the restaurants. The research was dominated by or carried out via online questionnaires due to the pandemic factor to maintain the health of respondents and researchers. This research obtained 377 respondents as the sample and a non-probability sampling technique. The researchers referred to the instrument indicators in determining the instrument item material. Data analysis methods or data analysis techniques were used to answer the problem formulations or to test the hypotheses formulated in the research, whereas, in this study, the authors used data analysis techniques using SPSS version 28. The stages of data analysis to be carried out after obtaining the data from the questionnaire are Likert scale weight scores, convergent validity test, discriminant validity test and composite reliability test, significance value and R-square, Effect size (Fsquare), Prediction relevance (Q square). The rule of thumb in this study was t statistics >1.96 with a p-value significance level of 0.05 (5%) based on the criteria.

4 Results

Demographic Profile

The survey found that 68.7% of respondents were female, while 31.3% were male. The majority of respondents were between the ages of 19 and 25, with 49 respondents below 18. The majority of respondents were Malay, with 300 respondents representing 79.6% of the total. Chinese and Indian respondents represented 8.2% and 11.9% of the

respondents, respectively. Self-employed respondents made up 13.8% and 10.6%, while students made up 58.1% of the group.

4.1.1 Analysis and Statistic

Table 1: Reliability Result of the Study Variable

Dimension	Number of items	Cronbach's Alpha
Perceived ease of use	6	0.742
Perceived usefulness	5	0.514
Customer Satisfaction on Using Digital QR Code Menu Ordering in Restaurant	5	0.526

Based on Table 1, all the indicators of outer loading value are above 0.70, and the constructs show an Average Variance Extracted (AVE) value that is > 0.50 , with the smallest value being 0.648 for the knowledge of technology variable and the most significant value being 0.840 for the variable of behavioral intention to use. Therefore, all the variables in this study are reliable because all variables have a composite reliability value of > 0.7 , where the reliability value is above 0.7.

Table 2: Descriptive Statistics on Variables

Descriptive Statistics			
	N	Mean	Std. Deviation
MEAN_PEOU	377	3.4138	.45822
MEAN_PU	377	3.4334	.38516
MEAN_OVERALL	377	3.4227	.38035
MEAN_SATISFACTION	377	3.4027	.39585
Valid N (listwise)	377		

The Cronbach's alpha for factors influencing customer satisfaction in using digital QR code menu ordering in restaurants in west Malaysia is moderately accepted due to low values. The highest mean is 3.4334, followed by perceived ease of use at 3.4138 and customer satisfaction at 3.4027. Perceived usefulness has the greatest impact on customer satisfaction. The largest standard deviation is perceived ease of use at 0.45822, followed by customer satisfaction at 0.39585 and perceived usefulness at 0.38516.

Table 3: Results of Correlation Coefficient

		Correlations			
		MEAN_PEOU	MEAN_PU	MEAN_OVER ALL	MEAN_SATIS FACTION
MEAN_PEOU	Pearson Correlation	1	.589**	.928**	.508**
	Sig. (2-tailed)		.000	.000	.000
	N	377	377	377	377
MEAN_PU	Pearson Correlation	.589**	1	.847**	.659**
	Sig. (2-tailed)	.000		.000	.000
	N	377	377	377	377
MEAN_OVERALL	Pearson Correlation	.928**	.847**	1	.637**
	Sig. (2-tailed)	.000	.000		.000
	N	377	377	377	377
MEAN_SATISFACTION	Pearson Correlation	.508**	.659**	.637**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	377	377	377	377

** . Correlation is significant at the 0.01 level (2-tailed).

The study found a significant two-tailed connection between perceived ease of use and perceived usefulness and customer satisfaction in using digital QR Code menu ordering in restaurants. The results showed a positive relationship between customer satisfaction and perceived ease of use, with a value of 1 and a value of 0.589. Indirectly, perceived ease of use and usefulness had a positive and significant relationship with customer satisfaction in using digital QR Code menu ordering in restaurants.

5 Discussion

The majority of respondents agreed that the QR code system is easy to use, clear, and easy to interact with. They also agreed that they could quickly master the system and use it effectively. The use of QR codes improved employee performance, improved productivity, and simplified the ordering process. The majority of respondents believed that restaurants should employ QR codes.

Customer satisfaction was found to be significant, with 48% of respondents agreeing that QR codes are easy to understand and understand. They also agreed that customers do not have to wait in line to place their orders, have quick access to menu information, reduce the complexity of online payments, and can view payment history. The Pearson Correlation method was used to analyze the results, revealing a significant positive relationship between perceived ease of use and customer satisfaction using digital QR code menu ordering in restaurants.

This study examines the relationship between perceived ease of use (understandable, flexible, easy to use, intelligence) and customer satisfaction in using QR code menu ordering in restaurants. The results show a positive relationship between perceived ease of use and customer satisfaction using digital QR code menu ordering in restaurants. Perceived usefulness (effectiveness, productivity, job performance, time consuming) also plays a significant role in customer satisfaction. The QR code system's

perceived ease of use makes ordering easier, saving time and enabling customers to place orders at their own pace. The most effective predictor for customer satisfaction in using QR code menu ordering in restaurants is perceived usefulness, which is influenced by technical development and specialized knowledge. The Technology Acceptance Model (TAM) suggests that employee acceptance of a system's increased efficiency and performance can be gauged through customer satisfaction. Utility plays a crucial role in justifying the choice to adopt the new service (QR code).

6 Limitation and Future Research

This study has several limitations, which can be addressed by future researchers. The first limitation is that the study only focuses on specific restaurants using QR code systems for menu ordering, such as Nando's, Chicken Rice Shop, and Kenny Rogers Roasters. This may not cover all types of restaurants in West Malaysia, and future researchers could focus on a wider range of types, such as family or fast-food restaurants.

The second limitation is the lack of respondents who fill out Google Forms through WhatsApp and Telegram. The data collection period was from March to May, but only 300 respondents were obtained, resulting in a data generation time of 377. To increase consumer satisfaction, future researchers could use more efficient methods to collect data.

Lastly, the study used only two variables to measure consumer satisfaction with digital QR code menu ordering in restaurants. The findings are limited to specific terms and are unable to be comprehensively investigated. The researcher suggests implementing a digital QR code menu ordering system in restaurants to discover new factors related to customer satisfaction, rather than focusing on perceived utility and ease of use. Customer satisfaction with digital QR codes in menu ordering must be significantly influenced by variable choice.

Perceived ease of use is the most significant factor, with respondents believing the QR code system is easy to use, clear, and understandable. The system is easy for interaction, and some respondents can quickly master it. Some respondents find the controls to the system easy to understand and use effectively.

Perceived usefulness suggests that QR codes can be developed more quickly, improve productivity at work, simplify the ordering process, and be used by everyone of any age. Customers believe QR codes enable quick access to menu information, reduce online payment complexity, and can view payment history. Overall, the results suggest that QR codes can improve customer satisfaction in restaurants in West Malaysia.

7 Conclusion

The study finds that perceived usefulness has a strong positive relationship with customer satisfaction, while perceived ease of use has the least positive relationship towards using digital QR codes menu ordering in restaurants. Increasing customer awareness with QR code technology, there is a need for socialization efforts and education for restaurant operators and customers to know and realize that QR code technology can be used for better menu ordering in terms of convenience, usability, and ease of use as an alternative to purchasing commuter line tickets. Practically, the results of this study also play a role in encouraging the modernization of public transportation purchases to be taken into consideration by restaurant operators as a plan for developing alternative menu ordering based on digital QR Code Technology.

8 About the Author

Zurena @ Rena Shahril PhD, is a Senior Lecturer in the Department of Foodservice Management, Faculty of Hotel and Tourism Management, Universiti Teknologi MARA, Puncak Alam Campus, Selangor, Malaysia. She has an outstanding 19 years of teaching experience in UiTM including a year in the hotel industry. Her expertise is in the area of Foodservice Technology and Hospitality Management.

Nur Syazwanie Arissa binti Remey Den now has the option to publish a biography along with the paper. This raises the writer's profile and is well received by online readers.

Nur Ainal Syuhada binti Shamshul Bahari now has the option to publish a biography together with the paper. This increases the profile of the authors and is well received by online readers.

Noorfarah Ilyana binti Mohd Asnawi now has the option to publish a biography together with the paper. This increases the profile of the authors and is well received by online readers.

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