

The Impact of QR Codes on Customer Satisfaction For Repurchase Intention on the Basis of Perceived Usefulness, Perceived Ease of Use and Perceived Flow in Food and Beverage Restaurant

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Keywords**Abstract**

: QR code, customer satisfaction, repurchase intention

This study explains the analysis of QR code usage in the food and beverage restaurant sector. The purpose of this research is to identify how perceived usefulness, ease of use, and flow experience influence customer satisfaction and repurchase intention. The research employed a quantitative approach by distributing online questionnaires to 385 respondents, with data analyzed using PLS-SEM. The results indicate that perceived usefulness, ease of use, and flow experience positively affect customer satisfaction. Furthermore, customer satisfaction plays an important mediating role in strengthening repurchase intention in restaurants through the use of QR codes.



INTRODUCTION

The food and beverage (F&B) restaurant industry is a consumer-focused sector in which service quality and efficiency significantly affect customer satisfaction and loyalty (Hess et al., 2014; Hossain et al., 2018; Hsiao et al., 2016; Imran, 2018; Kaya et al., 2019). Technological advancements have facilitated meal ordering without the need for physical queues; however, the proliferation of service channels may introduce new challenges. For instance, when several customers arrive or place orders simultaneously, conventional service procedures may lead to queue accumulation, which burdens service capacity (Suharianto et al., 2020). Consequently, several restaurants have adopted digital tools to meet contemporary clients' demands for efficiency and convenience (Darmianti & Prabawani, 2019; Deterding & Cutting, 2023; Faisal & Anas, 2020; Ghozali, 2016; Halim & Keni, 2023).

A significant innovation is the implementation of Quick Response (QR) codes in the food and beverage sector (Arif & Lubis, 2023; Ashfaq et al., 2019; Aurelia & Nawawi, 2021; Basyar & Sanaji, 2016; Chang & Chen, 2021). Initially deployed extensively as a contactless ordering solution during the COVID-19 pandemic to minimize physical contact and reduce virus transmission risks, QR codes have since evolved into a fundamental component of the dining experience (Kjeldsen et al., 2023). They enable consumers to browse menus, place orders, and make payments effortlessly, thereby enhancing efficiency and engagement (Hossain et al., 2018). QR codes are two-dimensional matrix barcodes capable of storing various data types, instantly accessible via smartphone cameras (Abuhamdeh, 2020; Akmal & Ridwan, 2022; Alamsyah, 2016; Ali, 2016; Apriyani & Suharti, 2017). Their ability to transmit information through a simple scan makes them ideal for connecting diners to digital content without requiring additional software. With global smartphone penetration reaching 78.05% in 2023 (Statista, 2024), countries such as China have integrated QR codes into daily life, including social media interactions, mobile payments, and service transactions, with over 900 million users engaging in QR-based payment systems (Hossain et al., 2018). In Indonesia, the adoption of QR-based payment systems has grown exponentially, with the Quick Response Code Indonesian Standard (QRIS) facilitating transactions worth over 13.1 trillion rupiah in 2023 (Bank Indonesia, 2024), reflecting widespread consumer acceptance of this technology.

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Despite increasing utilization, scholarly investigation into their impact on restaurant services remains limited, particularly regarding the psychological mechanisms through which QR codes influence customer behavior. Recent studies suggest that touchless technologies, such as QR codes, have considerable potential to enhance consumer experience and streamline operations in the food and beverage sector (Mazhar et al., 2024; Wong et al., 2023). However, existing research predominantly examines technical implementation or general e-commerce contexts, with insufficient attention to restaurant-specific dining experiences where QR codes perform multiple functions—menu browsing, ordering, and payment—within a single service encounter. There remains a gap in understanding how QR code usage affects customer satisfaction and repurchase intentions within actual restaurant environments.

Although contactless technologies are gaining popularity, notable research gaps persist regarding their usage in restaurants (Oktafiani et al., 2021; Pangestu & Cahyani, 2024; Pramono et al., 2021; Putra & Hayuningtias, 2023). Studies have largely focused on adoption intentions and technical features, overlooking the mediating role of customer satisfaction in linking technological perceptions to repurchase behavior. Moreover, the Technology Acceptance Model (TAM) has been applied only selectively, often neglecting hedonic aspects such as perceived flow in favor of utilitarian functions. The Southeast Asian context—particularly Indonesia with its distinctive digital ecosystem—also remains underexplored compared to other markets (Ventre & Kolbe, 2020; Wang & Li, 2016; Wilson, 2019; Wong et al., 2023; Zahro & Hadi, 2023).

To address these gaps, this study examines the direct effects of perceived usefulness, perceived ease of use, and perceived flow on customer satisfaction and repurchase intention, while analyzing satisfaction as a mediator between technological perceptions and behavioral outcomes. It contributes theoretically by extending TAM to encompass experiential dimensions and clarifying the psychological pathways to loyalty (Rahmalisa et al., 2020; Rahmawati et al., 2018; Silaen et al., 2021; Strijker et al., 2020; Suharianto et al., 2020). For practitioners, the findings provide actionable insights, underscoring that investments in user-friendly interfaces and seamless, value-added features can boost satisfaction and encourage repeat patronage, with ease of use being a key priority (Suleiman & Abdulkadir, 2022; Suryani et al., 2021; Suryatenggara & Dahlan, 2022; Thomas, 2022; Tufahati et al., 2021).

This research is grounded in the Technology Acceptance Model (TAM). The model posits that perceived usefulness (PU) and perceived ease of use (PEOU) influence users' attitudes, which subsequently affect satisfaction and behavioral intention. In the restaurant context, PU refers to the usefulness of QR codes for tasks such as menu browsing and payment, while PEOU denotes the ease of interacting with the system (Putra & Hayuningtias, 2023). Together with TAM, the Theory of Planned Behavior (TPB) provides a broader perspective on repurchase intention. This theory holds that behavioral intention is shaped by attitudes, subjective norms, and perceived behavioral control. In this study's context, satisfaction reflects attitude, and ease of use represents behavioral control; together, they influence the likelihood of repeat visits (Aurelia & Nawawi, 2021).

The Indonesian setting is especially relevant for several reasons. Indonesia is the world's fourth most populous nation, with a rapidly expanding middle class and rising smartphone ownership—conditions that are conducive to digital service adoption. Furthermore, the Indonesian government actively promotes digital payment infrastructure through initiatives such as QRIS, accelerating QR code integration across various industries, including food services (Silaen et al., 2021). As QR-based transactions proliferate, Indonesian food and beverage businesses are increasingly adopting digital menus and payment systems (Silaen et al., 2021; Pangestu & Cahyani, 2024). However, the majority of existing research focuses on online or mobile commerce rather than physical dining experiences, making this study both contextually relevant and geographically significant. By investigating Indonesian food and beverage establishments and consumers using QR code systems, this research captures authentic perspectives and behaviors within a dynamic digital service environment.

RESEARCH METHOD

This research employed a quantitative method to analyze the identified phenomena. Data were collected through an online questionnaire distributed to restaurant customers in Indonesia who had experienced the use of QR codes. A purposive sampling method (non-probability sampling) was applied

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to ensure representation across customer demographics such as age, education, occupation, and meal frequency. In this study, population data for customers of middle- to upper-class restaurants implementing QR code menus in Indonesia were unavailable; therefore, the sample size was determined using Lemeshow's infinite population formula as follows:

$$n = \frac{Z^2 \times P (1-P)}{d^2}$$

Explanation:

n = Number of samples required

Z = The level of confidence required in the sample is 95%, score is 1,96

P = Maximum estimation is 50%

d = Chance of being wrong (sampling error) is 5%

The number of sample sizes in this study is as follows:

$$n = \frac{1,96 \times 0,5 (1 - 0,5)}{0,05^2} = 384,16$$

Based on these calculations, the minimum number of samples required for the study was 384.16, rounded up to 385 respondents. A survey invitation link was distributed to potential respondents and continuously shared via social media platforms such as WhatsApp. A total of 410 responses were obtained from these channels. After eliminating incomplete responses and filtering out systematic missing data, 385 valid responses were determined to be suitable for analysis.

The constructs used in the research model were measured using a five-point Likert scale ranging from "strongly disagree" to "strongly agree." The survey included closed-ended questions designed to measure customer satisfaction and overall experience. This method was chosen because it enabled the collection of large amounts of standardized data suitable for statistical analysis. Electronic surveys were employed for their efficiency, accessibility, and ability to reach a wide audience.

The collected data were used to examine the relationships between independent and dependent variables, providing insight into the impact of *QR code* menus on the dining experience. Statistical analysis served as the main tool for hypothesis testing. The study utilized the PLS-SEM (Partial Least Squares Structural Equation Modeling) approach, which is recognized as a robust method for assessing complex models and confirming relationships with minimal assumptions (Sulaeman et al., 2022).

RESULT AND DISCUSSION

Table 1 presents a descriptive analysis of the demographic characteristics of respondents who participated in the distributed questionnaire. The questionnaire was specifically designed for customers who have made transactions using QR codes at food and beverage

Table 1. Demography of the respondent

Variables	Number	Percentage
Gender		
Male	199	48,3%
Female	186	51,7%
Age (years)		
18-25	136	35,3%
26-35	154	37,7%
36-45	66	17,1%
45-60	33	8,6%
Above 60	5	1,3%
Education Status		
Highschool	138	35,8%
Diploma (D1/D2/D3/D4)	75	19,5%
Bachelor	116	30,1%
Masters	45	11,7%

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Variables	Number	Percentage
Doctor	11	2,86%
Occupation		
Not Yet/Not Working	58	15,1%
Housewife	26	6,75%
Private Employee	110	28,6%
College Student	64	16,6%
Civil Servant/ Indonesian National Army/ Police	58	15,1%
Self-Employed	69	17,9%
Intensity of Going to Restaurants		
Very rarely (less than once a month)	85	22,1%
Occasionally (1-2 times a month)	84	21,8%
Often (3-4 times a month)	66	17,1%
Very often (1 time a week)	76	19,7%
Every day	74	19,2%

Based on the respondent profile, this study involved 385 participants with a gender distribution consisting of 199 men (48.3%) and 186 women (51.7%). In terms of age, the majority of respondents were aged 26-35 years, as many as 154 people (37.7%), followed by the 18-25 age group with 136 people (35.3%). The 36-45 age group included 66 respondents (17.1%), while the 45-60 age group consisted of 33 people (8.6%), and only 5 respondents (1.3%) were over 60 years old. In terms of education, most respondents had a high school education background of 138 people (35.8%). Respondents with a Bachelor degree (S1) numbered 116 people (30.1%), followed by Diploma with 75 people (19.5%). Respondents with a Master degree (S2) numbered 45 people (11.7%), and those with a Doctorate (S3) education were recorded as many as 11 people (2.86%). The job profile shows that most respondents are private employees, with a total of 110 people (28.6%). Students or pupils cover 64 people (16.6%), while 58 respondents (15.1%) have not or are not working. The same number (15.1%) work as civil servants, Indonesian national army (TNI) or police (POLRI). Self-employed respondents numbered 69 people (17.9%), and housewives numbered 26 people (6.75%). In terms of the intensity of visits to restaurants to eat with family or friends, 85 respondents (22.1%) visit restaurants very rarely (less than once a month). A total of 84 respondents (21.8%) visit restaurants occasionally (1-2 times a month), while 66 people (17.1%) do so Often (3-4 times a month). A total of 76 respondents (19.7%) visited restaurants very often (once a week), and 74 people (19.2%) reported visiting restaurants every day. These data provide an overview of the variation in the frequency of visits to restaurants among the respondents involved in the study.

Table 2. Construct Measurement

Variable	Item	CA	CR	AVE
Customer Satisfaction	I felt generally pleased with the experience of QR0,786	0,837	0,854	0,540
	code.			
	I was very satisfied while using the QR code.			
	Interacting with the QR code was highly enjoyable.			
Perceived Ease of Use	The purchasing process is very enjoyable.	0,837	0,875	0,468
	Recommended the QR code.			
	Find it clear and understandable to go to QR code.			
	Interact flexibly with QR code.			
	Easy to become skillful at using QR code.			
	Interacting with QR code is often pleasant.			

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Variable	Item	CA	CR	AVE
Perceived Flow	Interacting with QR code doesn't require much effort. I do not make a mistake when using the QR code. I do not need to consult the user manual often when using the QR code. Overall, it is easy to use the QR code.			
	I felt totally captivated while using the QR code. I used the QR code with great interest.	0,776	0,847	0,526
Perceived Usefulness	I was involved in using the QR code. Nothing seemed to matter to me while using the QR code. Time seemed to pass very quickly while using the QR code. Very usefulness.			
	Easily connect with menu site.	0,764	0,841	0,515
Repurchase Intention	Find the product helpful. Simple and effective for online purchasing. QR code saves time. I want to use with QR code in near future.			
	Consume products from the restaurant that using the QR code. Intend to continue using QR code rather than discontinue. Intention to continue go to the restaurant that using QR code for menu rather than use hardcopy menu. Intending to continue visiting restaurants that use QR code payment instead of conventional payment methods Expect to repurchase from the restaurant that using the QR code soon. In the future, the restaurant that using QR code is the first place to go for dining.	0,825	0,870	0,488

QR: Quick Response; CA: Cronbach Alpha; CR: Composite Reliability; AVE: Average Variance

Extracted In table 2, the AVE value is also above 0.5, and the cross-loading value shows that the correlation between the construct and the indicator on the measuring variable is greater than the correlation of the construct with other indicators. So, it can be concluded that all Indicators used in this study have met the criteria of discriminant and convergent validity, so they are declared valid. In addition, it is known that all Cronbach's Alpha values are above 0.60 (CA> 0.60) and all Composite Reliability values are also above 0.70 (CR> 0.70). So, it can be concluded that all constructs in this study have good reliability and are declared reliable.

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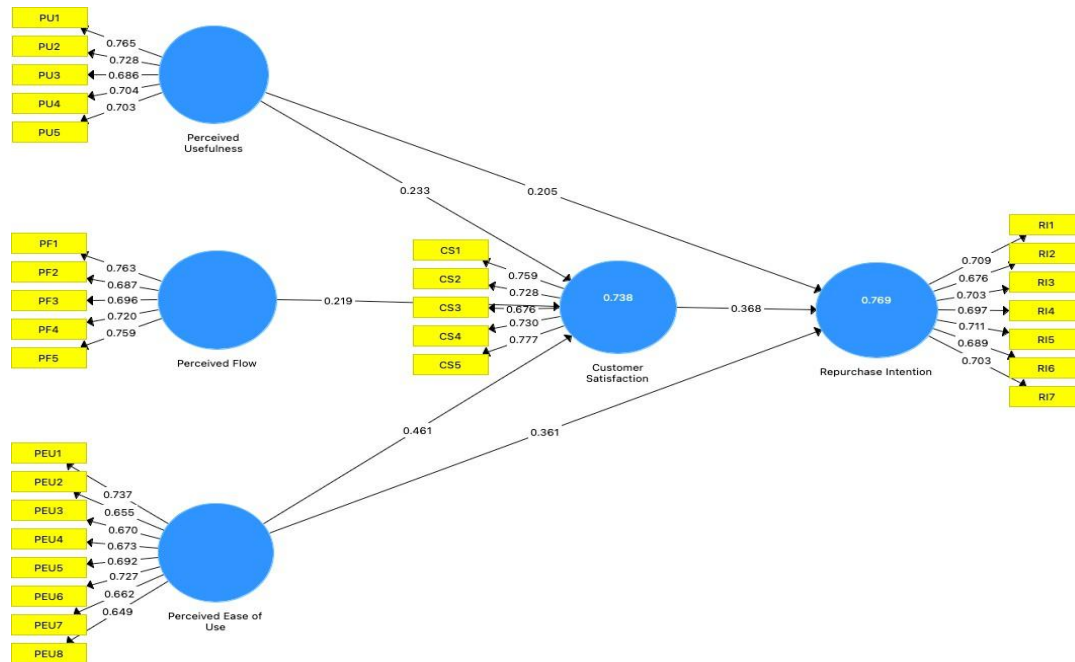


Figure 2. Research Model Output

Based on data processing with SEM-PLS, the outer model values are as follows:

Table 3. Loading Factor

Item	CS	PEU	PF	PU	RI
I felt generally pleased with the experience of QR code.	0,759				
I was very satisfied while using the QR code.	0,728				
Interacting with the QR code was highly enjoyable.	0,676				
The purchasing process is very enjoyable.	0,730				
Recommended the QR code.	0,777				
Find it clear and understandable to go to QR code.	0,737				
Interact flexibly with QR code.	0,655				
Easy to become skillful at using QR code.	0,670				
Interacting with QR code is often pleasant.	0,673				
Interacting with QR code doesn't require much effort.	0,692				
I do not make a mistake when using the QR code.	0,727				
I do not need to consult the user manual often when using the QR code.	0,662				
Overall, it is easy to use the QR code.	0,649				
I felt totally captivated while using the QR code.		0,763			
I used the QR code with great interest.		0,687			
I was involved in using the QR code.		0,696			
Nothing seemed to matter to me while using the QR code.		0,720			
Time seemed to pass very quickly while using the QR code.		0,759			
QR code.				0,765	
Very usefulness.				0,765	

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Item	CS	PEU	PF	PU	RI
Easily connect with menu site.				0,728	
Find the product helpful.				0,686	
Simple and effective for online purchasing.				0,704	
QR code saves time.				0,703	
I want to use with QR code in near future.					0,709
Consume products from the restaurant that using the QR code.					0,676
Intend to continue using QR code rather than					0,703
discontinue.					0,697
Intention to continue go to the restaurant that using					0,711
QR code for menu rather than use hardcopy menu.					0,711
Intending to continue visiting restaurants that use					0,711
QR code payment instead of conventional payment methods.					0,689
Expect to repurchase from the restaurant that using					0,703
the QR code soon.					0,703
In the future, the restaurant that using QR code is					0,703
the first place to go for dining.					0,703

PU: Perceived Usefulness; PF: Perceived Flow; PEU: Perceived Ease of Use; CS: Customer Satisfaction; RI: Repurchase Intention

The outer loading values of all indicators on all variables has reached a value above the critical limit, which is > 0.5 . A high loading factor value indicates a strong relationship between the indicator and the measured latent variable.

Table 4. Discriminant Validity

Variable	CS	PEU	PF	PU	RI
Customer Satisfaction	0,735				
Perceived Ease of Use	0,833	0,684			
Perceived Flow	0,781	0,821	0,726		
Perceived Usefulness	0,785	0,823	0,787	0,718	
Repurchase Intention	0,830	0,836	0,809	0,791	0,699

PU: Perceived Usefulness; PF: Perceived Flow; PEU: Perceived Ease of Use; CS: Customer Satisfaction; RI: Repurchase Intention

Based on the table above, it can be seen that all indicators that form each variable in this study have met the discriminant validity. This is indicated by the cross-loading value which shows that the correlation value between the construct and its indicators is greater than the correlation value between the construct and other indicators.

Table 5. VIF Value

Variable	CS	PEU	PF	PU	RI
Customer Satisfaction				3,622	
Perceived Ease of Use	4,113			4,321	
Perceived Flow	3,479				
Perceived Usefulness	3,518			3,450	
Repurchase Intention					

PU: Perceived Usefulness; PF: Perceived Flow; PEU: Perceived Ease of Use; CS: Customer Satisfaction; RI: Repurchase Intention

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A good regression model does not have multicollinearity. Multicollinearity testing is carried out to test whether there is a correlation between independent variables in the regression model. Multicollinearity means that there is a perfect linear relationship between some or all of the variables that explain the regression model. Multicollinearity testing aims to test and determine whether in a regression model there is a high or perfect correlation between independent variables. This test can be seen by looking at the tolerance value and the variance inflation factor (VIF) value. Testing can be done by looking at the Tolerance and Variance Inflation Factor (VIF) values in the regression model. The decision-making criteria related to multicollinearity testing are as follows (Ghozali, 2016):

1. If the VIF value <10 or the Tolerance value > 0.01, then it is stated that there is no multicollinearity.
2. If the VIF value > 10 or the Tolerance value <0.01, then it is stated that there is multicollinearity.
3. If the correlation coefficient of each independent variable > 0.8 then there is multicollinearity. But if the correlation coefficient of each independent variable is <0.8 then there is no multicollinearity.

Based on the explanation, the results of the data in this study are that there is no multicollinearity.

Table 6. Hypotheses Testing

Hypotheses	Mean	Standard Deviation	T Score	P Value	Conclusion
PU → CS	0,232	0,058	4,005	0,000	Accepted
PF → CS	0,219	0,075	2,907	0,004	Accepted
PEU → CS	0,463	0,078	5,908	0,000	Accepted
PU → RI	0,207	0,060	3,411	0,001	Accepted
PEU → RI	0,360	0,069	5,253	0,000	Accepted
CS → RI	0,369	0,066	5,532	0,000	Accepted
CS → PU → RI	0,171	0,043	3,977	0,000	Accepted
CS → PF → RI	0,081	0,032	2,496	0,013	Accepted
CS → PEU → RI	0,085	0,026	3,355	0,001	Accepted

PU: Perceived Usefulness; PF: Perceived Flow; PEU: Perceived Ease of Use; CS: Customer Satisfaction; RI: Repurchase Intention

The Path Coefficients test will be a reference for conducting hypothesis testing in this study with the criteria that have been explained, namely the hypothesis is accepted if the P value <0.05, while the hypothesis is rejected if the value in the P column > 0.05. The results of testing the hypotheses proposed in this study are as follows:

1. H1: Perceived usefulness has a positive impact on customer satisfaction with a t-statistic value of 4,005, and a P value of 0,000 which means P <0.05 which means the hypothesis is accepted.
2. H2: Perceived flow has a positive impact on customer satisfaction with a t-statistic value of 2,907, and a P value of 0,004 which means P <0.05 which means the hypothesis is accepted.
3. H3: Perceived ease of use has a positive impact on customer satisfaction with a t-statistic value of 5,908, and a P value of 0,000 which means P <0.05 which means the hypothesis is accepted.
4. H4: Perceived usefulness has a positive and significant influence on repurchase intention with a t-statistic value of 3,411, and a P value of 0,001 which means P < 0.05, which means the hypothesis is accepted.
5. H5: Perceived ease of use has a positive and significant effect on repurchase intention with a t-statistic value of 5,253, and a P value of 0,000 which means P < 0.05 which means the hypothesis is accepted.
6. H6: Customer satisfaction has a positive impact on repurchase intentions with a t-statistic value of 5,532 and a P value of 0,000 which means P < 0.05 which means the hypothesis is accepted.
7. H7: Customer satisfaction positively and significantly mediates between perceived usefulness and repurchase intention with a t-statistic value of 3,977 and a P value of 0,000, meaning P <0.05, meaning the hypothesis is accepted.

8. H8: Customer satisfaction positively and significantly mediates between perceived flow and repurchase intention with a t-statistic value of 2,496 and a P value of 0,013, meaning $P < 0.05$, meaning the hypothesis is accepted.
9. H9: Customer satisfaction positively and significantly mediates between perceived ease of use and repurchase intention with a t-statistic value of 3,355 and a P value of 0.001, meaning $P < 0.05$, meaning the hypothesis is accepted.

This study's results reveal how QR code technology influences how happy customers are and how likely they are to buy again. The theoretical frameworks talked about in the literature review (TAM and TPB) and the main notions of perceived utility, ease of use, and flow might help us make sense of these results. In general, the results are pretty comparable to what the Technology Acceptance Model says. Customers are often happy with a service technology when they think it is useful and easy to use. This is shown by the fact that perceived utility and perceived ease of use have positive influence on customer satisfaction. TAM says that technologies that are easy to use and make things better make people feel good about using them. In this case, it means more satisfaction. People are more likely to want to remain using the service if they feel good about it. Our results did show that customers were happier when they considered the QR code system was helpful (for example, by saving time or making things simpler) and straightforward to use. This is consistent with what other studies have shown in other circumstances. Davis initially came up with these principles in TAM. Our study backs up that theory when it comes to restaurant QR codes: consumers will be pleased with a technology that satisfies their demands and is easy to use, which will make them more inclined to use it again. In our concept, customer happiness is a key link between these technology impressions and the decision to buy again. This effect that comes between the two makes the assumption that TAM is connected to the end results of customer loyalty stronger. Satisfaction in TAM is like the "attitude" aspect, which is a good reaction to employing technology. Our research shows that people want to buy again largely because they think the product is useful and easy to use, which makes them happier, not merely because they get immediate advantages. Customers are delighted with the service when they consider the QR code system makes their meal much better (high utility) and is easy to use (high ease of use). They are quite likely to come back to the restaurant since they are so happy. This corresponds with the concept that a good user experience, which is one that makes people very happy, is important for getting people to keep using something and becoming devoted to it. This fits with what previous studies have found: how much individuals like something influences how they think about technology and whether they buy it again. For example, studies in ecommerce and online services have shown that a consumer would be loyal and want to buy again if they are happy with the system, regardless whether it is useful or helpful. When it comes to restaurant services that employ QR codes, our study backs up this pattern: pleased customers are far more likely to come back. This indicates that merely using technology isn't enough; it has to be done in a way that actually makes people happy in order to persuade them to come back.

You may also use the Theory of Planned Behavior to look at the behavioral side of the intention to buy again to understand the results. According to TPB, a person's behavioral intentions (such choosing to go back to a restaurant) are affected by how they feel about an activity and how much influence they think they have over it. People who are happy with the QR system may be more likely to use it. Also, perceived ease of use might be linked to perceived behavioral control. When a system is easy to use, it makes customers feel more in command of the ordering process. The substantial connection we discovered between satisfaction and the willingness to buy again is in accordance with TPB: it demonstrates that individuals are much more inclined to do something again if they are in a good mood before (they were very happy with their earlier visits). Also, the fact that ease of use has a direct influence on repurchase means that consumers feel like they have control over the system when it is very easy to use and accessible. This makes it easier for them to use the technology and makes them want to come back. This fits with the TPB idea that individuals are more inclined to do something if they believe they have greater control over it. In other words, people are more likely to come back if they had a good experience the first time and know how to use the QR code system (high perceived control because it is easy to use). Putting together what we learned from TAM and TPB gives us a better picture. The characteristics of the technology impact how happy users are (attitude), and that happiness, together with a sense of ease or control, leads to the decision to buy again. This whole picture gives our results more importance than just how easy the technology is to use. It thinks that people

choose to use the system again and again depending on how much they loved it and how sure they were that they could utilize it. It explains why we used both TPB and TAM in our study: using both helps us understand why individuals who are delighted with and empowered by QR technology choose to come back instead of merely assuming that convenience would lead to repeat purchases.

We also made a point in our theory that perceived flow is very crucial. The study goes beyond TAM's practical concerns by adding perceived flow, which is the experience of being absorbed and having pleasure while using the system. This adds the fun or enjoyable part of using technology. The results indicated that how people feel about the flow of things has a huge and good effect on how satisfied they are in a restaurant. This suggests that those who used the QR code technology and felt "in the zone," engrossed, or fluidly immersed were pleased with their experience. This conclusion fits with flow theory and previous studies that states that when people are in a state of flow when using a service, they tend to enjoy the process more and be happy with the total experience. For instance, Ali (2016) and others have found that customers are happier and more likely to buy when they feel like they are in a digital service setting, such as a hotel website or app. When it comes to ordering with QR codes, our findings are comparable to what others have found: a pleasant, easy transaction may make a customer happier and more pleased. Flow is an improvement to TAM since it looks at the emotional side of using technology, which is not something that the original TAM formulation does. In real life, things like utility and convenience make sure the system works well for the customer, and the flow factor makes sure the system is pleasant to use. We found out that this joyful immersion not only makes individuals happy, but it can also make them more inclined to buy again, especially when happiness leads to intention. This conclusion is comparable to what Hossain et al. (2018) found: that purchasers are more likely to buy when QR code interactions are seamless and entertaining because they feel in control and satisfied. So, perceived flow is just as crucial as the other parts of TAM. This indicates that for services that employ technology, success isn't just about being quick and easy; it's also about making sure people have a nice time. For restaurants that employ QR codes to get the most out of happier customers and repeat business, they need to put a lot of thought into how users will interact with them. They need to make sure that the process is not just speedy, but also clear and enjoyable. In short, using TAM, TPB, and flow theory to look at the results shows that there is a consistent conceptual logic: a QR code system that customers find useful, easy, and fun will make them happy, and happy customers who trust and like using the system are more likely to become loyal, repeat customers. This combined knowledge supports the theoretical foundations found in the literature and shows them to be true with instances from actual life in the F&B restaurant environment.

CONCLUSION

This study confirmed that the implementation of QR codes in the food and beverage restaurant sector significantly enhanced customer satisfaction and repurchase intention. Perceived usefulness, perceived ease of use, and perceived flow were found to positively influence customer satisfaction, with perceived ease of use being the most dominant factor. Customer satisfaction also acted as a key mediator linking these technological perceptions to repurchase intention, thereby validating the extended Technology Acceptance Model (TAM) within the Indonesian restaurant context. The findings emphasize that effective technology adoption requires not only utilitarian benefits but also engaging experiential qualities that foster a seamless user experience. For future research, longitudinal studies should examine the long-term effects of QR code usage on loyalty and actual repurchase behavior, as well as conduct cross-cultural or restaurant-type comparisons to identify contextual differences. Further exploration into challenges such as digital exclusion, reduced social interaction, and factors like perceived security, personalization, and loyalty integration could deepen understanding of the digital customer journey in restaurant environments.

REFERENCES

- Abuhamdeh, S. (2020). Investigating the "flow" experience: Key conceptual and operational issues. *Frontiers in Psychology*, *11*, 158. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.00158/full>
- Akmala, Z., & Ridlwan, A. A. (2022). Pengaruh Etika Pemasaran Islami dan Kualitas Layanan terhadap Loyalitas Pelanggan Fashion Muslim E-Commerce Shopee dengan Kepuasan

- sebagai Variabel Mediasi. *Jurnal Ekonomika Dan Bisnis Islam*, 5(3), 195–213. <https://journal.unesa.ac.id/index.php/jei/article/view/22953>
- Alamsyah, R. A. (2016). Pengaruh kepuasan dan kepercayaan pelanggan terhadap niat pembelian ulang di toko online. *Manajemen Bisnis*, 6(2). <http://ejournal.umm.ac.id/index.php/jmb/article/view/5542>
- Ali, F. (2016). Hotel website quality, perceived flow, customer satisfaction and purchase intention. *Journal of Hospitality and Tourism Technology*, 7(2), 213–228. <https://www.emerald.com/insight/content/doi/10.1108/JHTT-02-2016-0010/full/html>
- Apriyani, N., & Suharti, S. (2017). Analisis Pengaruh Persepsi Kebermanfaatan, Persepsi Kemudahan dan Kepercayaan Terhadap Minat Beli Ulang Pengguna Smartphone Xiaomi. *Manajemen Dewantara*, 1(1), 21–34. <https://jurnal.ustjogja.ac.id/index.php/manajemendewantara/article/download/45/275>
- Arif, M., & Lubis, I. A. (2023). Increasing Repurchase Intention Based on Perceived Ease of Use and Perceived Usefulness Using Digital Payments Through Trust as an Intervening Variable. *Proceeding Medan International Conference on Economic and Business*, 1, 3183–3203. <https://proceeding.umsu.ac.id/index.php/Miceb/article/view/507>
- Ashfaq, M., Yun, J., Waheed, A., Khan, M. S., & Farrukh, M. (2019). Customers' expectation, satisfaction, and repurchase intention of used products online: Empirical evidence from China. *SAGE Open*, 9(2). <https://journals.sagepub.com/doi/abs/10.1177/2158244019846212>
- Aurelia, F., & Nawawi, M. T. (2021). Pengaruh Customer Satisfaction, Perceived Value, Dan Trust Terhadap Online Repurchase Intention Pada Fashion Di Instagram Di Jakarta. *Jurnal Manajerial Dan Kewirausahaan*, 3(1), 117–126. <https://journal.untar.ac.id/index.php/JMDK/article/download/11296/7048>
- Basyar, K., & Sanaji, S. (2016). Pengaruh persepsi kemudahan dan persepsi manfaat terhadap niat beli ulang secara online dengan kepuasan sebagai variabel intervening. *BISMA (Bisnis Dan Manajemen)*, 8(2), 204–217. <https://journal.unesa.ac.id/index.php/bisma/article/view/2268>
- Chang, Y. W., & Chen, J. (2021). What motivates customers to shop in smart shops? The impacts of smart technology and technology readiness. *Journal of Retailing and Consumer Services*, 58, 102325. <https://www.sciencedirect.com/science/article/pii/S0969698920313333>
- Darmianti, M., & Prabawani, B. (2019). Pengaruh Gaya Hidup Dan Nilai Pelanggan Terhadap Loyalitas Pelanggan Melalui Kepuasan Pelanggan Sebagai Variabel Intervening (Pada Konsumen Klinik Kecantikan Larissa Aesthetic Center Semarang). *Jurnal Ilmu Administrasi Bisnis*, 8(4), 287–299. <https://ejournal3.undip.ac.id/index.php/jiab/article/view/24917>
- Deterding, S., & Cutting, J. (2023). Objective difficulty-skill balance impacts perceived balance but not behaviour: A test of flow and self-determination theory predictions. *Proceedings of the ACM on Human-Computer Interaction*, 7(CHI PLAY), 1179–1205. <https://doi.org/10.1145/3611065>
- Faisal, & Anas, M. A. F. (2020). Pemanfaatan kode QR pada peningkatan pelayanan dan kepuasan pelanggan pada restoran. *INSTEK: Jurnal Penelitian Dan Pengabdian Masyarakat*, 5(1), 111–120. <https://journal3.uin-alauddin.ac.id/index.php/instek/article/view/14504>
- Ghozali, I. (2016). *Aplikasi Analisis Multivariete Dengan Program IBM SPSS 23 (Edisi 8)*. Badan Penerbit Universitas Diponegoro.
- Halim, A., & Keni, K. (2023). Pengaruh trust, perceived ease of use, dan perceived usefulness terhadap repurchase intention dengan menggunakan e-commerce. *Jurnal Manajemen*

- Bisnis Dan Kewirausahaan*, 7(3), 650–662.
<https://journal.untar.ac.id/index.php/jmbk/article/view/23877>
- Hess, T., McNab, A. L., & Basoglu, K. A. (2014). Reliability generalization of perceived ease of use, perceived usefulness, and behavioral intentions. *MIS Quarterly*, 38(1), 1–28.
<https://www.jstor.org/stable/26554866>
- Hossain, M. S., Zhou, X., & Rahman, M. F. (2018). Examining the impact of QR codes on purchase intention and customer satisfaction on the basis of perceived flow. *International Journal of Engineering Business Management*, 10, 184797901881232.
<https://doi.org/10.1177/1847979018812323>
- Hsiao, C.-H., Chang, J.-J., & Tang, K.-Y. (2016). Exploring the influential factors in continuance usage of mobile social Apps: Satisfaction, habit, and customer value perspectives. *Telematics and Informatics*, 33(2), 342–356.
<https://www.sciencedirect.com/science/article/pii/S0736585315001136>
- Imran, M. I. A. (2018). Pengaruh kepuasan pelanggan terhadap minat beli ulang makanan di rumah makan ayam bakar wong solo alauddin kota makassar. *Jurnal Profitability Fakultas Ekonomi Dan Bisnis*, 2(1), 50–64.
<https://core.ac.uk/download/pdf/233601982.pdf>
- Kaya, B., Behraves, E., Abubakar, A. M., Kaya, O. S., & Orús, C. (2019). The moderating role of website familiarity in the relationships between e-service quality, e-satisfaction and e-loyalty. *Journal of Internet Commerce*, 18(4), 369–394.
<https://www.tandfonline.com/doi/abs/10.1080/15332861.2019.1668658>
- Oktafiani, H., Yohana, C., & Saidani, B. (2021). Pengaruh Perceived Ease of Use dan Perceived Usefulness terhadap Customer Satisfaction E-Wallet X. *Jurnal Bisnis, Manajemen, Dan Keuangan-JBMK*, 2(2), 562–576.
<http://pub.unj.ac.id/index.php/jbmk/article/view/327>
- Pangestu, I., & Cahyani, L. (2024). Analisis efektivitas penggunaan QR kode sebagai sarana pembayaran digital terhadap minat beli konsumen di MP Mart. *Al-Kharaj: Jurnal Ekonomi, Keuangan & Bisnis Syariah*, 6(4), 4268–4280.
<https://doi.org/10.47467/alkharaj.v6i4.931>
- Pramono, A., Wibisono, M. N., Puspasari, B. D., & Salamah, E. (2021). Pengembangan wahana game pendidikan berbasis QR-code sebagai upaya peningkatan kualitas wahana di Wana Wisata Bedengan. *CARADDE: Jurnal Pengabdian Kepada Masyarakat*, 4(1), 53–62. <https://doi.org/10.31960/caradde.v4i1.1022>
- Putra, A. A., & Hayuningtias, K. A. (2023). Pengaruh Manfaat Yang Dirasakan, Kemudahan Yang Dirasakan, Dan Kepercayaan yang dirasakan Terhadap Kepuasan Pelanggan. *Management Studies and Entrepreneurship Journal (MSEJ)*, 4(5), 6085–6094.
<https://www.yrpiiku.com/journal/index.php/msej/article/view/2857>
- Rahmalisa, U., Irawan, Y., & Wahyuni, R. (2020). Aplikasi absensi guru pada sekolah berbasis Android dengan keamanan QR code (Studi kasus: SMP Negeri 4 Batang Gansal). *Riau Journal of Computer Science*, 6(2), 135–144. <https://doi.org/10.36085/jtis.v3i3.1136>
- Rahmawati, A. P., Prihastuty, R., & Azis, A. (2018). Pengaruh kepuasan konsumen terhadap repurchase intention. *Intuisi: Jurnal Psikologi Ilmiah*, 10(3), 293–298.
<https://journal.unnes.ac.id/nju/INTUISI/article/view/18870>
- Silaen, M. F., Manurung, S., & Nainggolan, C. D. (2021). Effect analysis of benefit perception, ease perception, security, and risk perception of merchant interest in using Quick Response Indonesia Standard (QRIS). *International Journal of Science, Technology & Management*, 2(5), 1574–1581. <https://doi.org/10.46729/ijstm.v2i5.313>

- Strijker, D., Bosworth, G., & Bouter, G. (2020). Research methods in rural studies: Qualitative, quantitative and mixed methods. *Journal of Rural Studies*, 78, 262–270. <https://doi.org/10.1016/j.jrurstud.2020.06.007>
- Suharianto, Pambudi, L. B. A., Rahagiyanto, A., & Suyoso, G. E. J. (2020). Implementasi QR code untuk efisiensi waktu pemesanan menu makanan dan minuman di restoran maupun kafe. *BIOS: Jurnal Teknologi Informasi Dan Rekayasa Komputer*, 1(1), 35–39. <https://www.bios.sinergis.org/bios/article/view/7>
- Suleiman, S., & Abdulkadir, Y. (2022). Partial least square structural equation modeling (PLS-SEM) of patient satisfaction on service quality in Katsina public hospitals. *Asian Journal of Probability and Statistics*, 17(3), 49–60. <http://publish7promo.com/id/eprint/1389/>
- Suryani, D., Ermansyah, E., & Alsukri, S. (2021). Pengaruh Perceived Ease of Use, Perceived Usefulness dan Trust Terhadap Kepuasan Pelanggan Gojek. *IJBEM: Indonesian Journal of Business Economics and Management*, 1(1), 11–19. <https://journal.irpi.or.id/index.php/ijbem/article/view/171>
- Suryatenggara, G. M., & Dahlan, K. S. S. (2022). The Effect of Perceived Usefulness, Perceived Ease of Use and Perceived Price on Customer Loyalty in Gojek Through Customer Satisfaction (Study on Gojek Apps Users in Jabodetabek). *Journal of Business & Applied Management*, 15(2), 171–185. <https://journal.ubm.ac.id/index.php/business-applied-management/article/view/3866>
- Thomas, F. B. (2022). The role of purposive sampling technique as a tool for informal choices in a social Sciences in research methods. *Just Agriculture*, 2(5), 1–8.
- Tufahati, N., Barkah, C. S. A., Tresna, P. W., & Chan, A. (2021). The Impact of Customer Satisfaction on Repurchase Intention (Surveys on Customer of Bloomythings). *Journal of Business Applied Management*, 14(2), 177–186. <https://journal.ubm.ac.id/index.php/business-applied-management/article/view/3098>
- Ventre, I., & Kolbe, D. (2020). The impact of perceived usefulness of online reviews, trust and perceived risk on online purchase intention in emerging markets: A Mexican perspective. *Journal of International Consumer Marketing*, 32(4), 287–299. <https://www.tandfonline.com/doi/abs/10.1080/08961530.2020.1712293>
- Wang, Z., & Li, H. (2016). *Factors influencing usage of third party mobile payment services in China: An empirical study*. <https://www.diva-portal.org/smash/get/diva2:942476/FULLTEXT01.pdf>
- Wilson, N. (2019). The impact of perceived usefulness and perceived ease-of-use toward repurchase intention in the Indonesian e-commerce industry. *Jurnal Manajemen Indonesia*, 19(3), 241–249. <https://journals.telkomuniversity.ac.id/ijm/article/download/2412/1225>
- Wong, C.-C., Chong, L.-Y., Chong, S.-C., & Law, C.-Y. (2023). QR food ordering system with data analytics. *Journal of Informatics and Web Engineering*, 2(2), 250–272. <https://mmupress.com/index.php/jiwe/article/view/650>
- Zahro, S. Z., & Hadi, M. (2023). Pengaruh Perceived Usefulness Dan Perceived Value Terhadap Online Repurchase Intention Pada Konsumen E-Commerce Shopee Di Kota Malang. *Jurnal Aplikasi Bisnis*, 9(1), 1–7. <http://jurnal.polinema.ac.id/index.php/jab/article/view/550>