FACTORS INFLUENCING QRIS ADOPTION IN WARKOPS

Muhammad Zahran Nurendra[*)], Liliana Inggrit Wijaya[*)1], Bobby Ardiansyahmiraja[*)], Jun Kajee[**)]

[*)] Faculty of Business and Economics, University of Surabaya
Jl. Raya Kalirungkut, Surabaya, East Java 60293, Indonesia
[**)] University for Continuing Education
Dr.-Karl-Dorrek-Straße 30, 3500 Krems an der Donau, Austria

Article history:
Received
12 October 2024

Revised
28 October 2024

Accepted
11 November 2024

Available online
22 January 2025

Abstract:

Background: The rapid advancement of technology has significantly transformed how individuals interact, work, shop, and communicate. In Indonesia, digital payment systems have gained prominence, and the Quick Response Indonesian Standard (QRIS) has emerged as an important method for transactions in traditional coffee shops or Warkops (short for Warung Kopi).
Purpose: This study explores the factors that influence the adoption of QRIS as a digital payment method in, focusing on subjective norms, perceived usefulness, perceived ease of use, attitude, perceived security, risk, anxiety, and comfort.
Design/methodology/approach: We utilized a quantitative approach. Using purposive sampling in Warkops, we collected data from 230 respondents through a structured survey. The data was analyzed using Structural Equation Modeling-Partial Least Square (SEM-PLS).
Findings/Results: The analysis reveals that attitude, perceived ease of use, and perceived usefulness significantly impact the intention to use QRIS. In contrast, perceived security, risk, anxiety, and comfort do not significantly affect the intention to adopt QRIS.
Conclusion: Warkop, aiming to enhance customer convenience and transaction efficiency, should consider adopting QRIS, as psychological and social factors play a crucial role in its adoption.
Originality/value: This research contributes to the academic literature by emphasizing the role of subjective and psychological factors in digital payment adoption. It provides a foundation for future studies to investigate QRIS adoption in different contexts.

Keywords: technology adoption, QRIS, Warkop, subjective norms, TPB

How to Cite:
Nurendra M. Z., Wijaya L. I., Ardiansyahmiraja B., & Kajee J. (2025). Factors Influencing QRIS Adoption in Warkops. Jurnal Aplikasi Bisnis Dan Manajemen (JABM), 11(1), 214. https://doi.org/10.17358/jabm.11.1.214

[1] Alamat Korespondensi:
Email: liliana@staff.ubaya.ac.id

INTRODUCTION

In recent years, the use of technology has increased significantly. Along with the advancement of information and communication technology, people have seen drastic changes in the way they interact, work, shop, and communicate (Meske and Junglas, 2021). According to data from the Central Statistics Agency (BPS), in the last 10 years, the proportion of the population accessing the internet has continued to increase. In 2013 it was 14.94% and in 2022 it was 66.48% (Ahdiat, 2023). In addition, technological advancements have also changed the way individuals think and behave (Balci et al. 2022). This phenomenon does not only apply to one geographical area, but has become a global trend that spreads to various countries. The rapid development of digital technology has influenced daily life practices, especially for Generation Z, who cannot be separated or dependent on the internet (Serravalle et al. 2022). As Generation Z lives in the digital era, they must always be responsive and improve their skills so as not to be left behind by technology. With the development of technology, humans can access the internet to find information anywhere and anytime.

One of the developments in digital technology today is digital payment. Digital payment is a payment method that uses gadgets with electronic systems (Al-Saedi et al. 2020). This system makes users feel safer and more comfortable in making payments, because all transactions that occur are recorded on the system. This payment is also considered more practical, because it does not require a long time and can be done anywhere (Singh and Sinha, 2020). This payment system is divided into several types such as E-wallet, Virtual Account, Mobile Banking Transfer, and QR Code Payment (Bank Indonesia, 2019, August 17).

Of the several types of digital payments, QRIS is one of the digital payments compiled by Bank Indonesia (BI) using international standards to conduct an electronic transaction. BI launched QRIS on August 17, 2019, coinciding with Indonesia's 74th birthday, and was only implemented on January 1, 2020 (Bank Indonesia, 2019, August 17). QRIS was developed by the payment system together with Bank Indonesia so that the QR Code transaction process can be easier, faster, and safer. After its launch, QRIS began to attract the attention of MSMEs. Bank Indonesia installed a very affordable transaction fee (MDR) of only 0.75%. Of course, many MSMEs are starting to be interested in using QRIS (Rahman, 2023; paperblog, 2023).

There are many MSMEs in Surabaya, such as traditional coffee shops which is usually known as Warkop (short for 'Warung Kopi,' which literally means coffee shop') (Ardiansyahmiraja, 2024). Warkop provide products ranging from affordable to expensive prices (Sukatmadiredja, 2017). Warkop have become a gathering center for communities to conduct various social activities, so it is not surprising that in Warkop, we find many visitors from various occupations (Maulina, 2018). These Warkop also increase local revenue and solve poverty problems by absorbing labor (Widiatmaka et al. 2023).

With the development of the Warkop industry today, Warkop can be seen in various urban centers because urban residents have a higher consumptive attitude compared to rural residents (Ompusunggu and Djawahir, 2014). Warkop not only functions as a place to drink coffee but also as a place to get various information, create a discussion forum, and also as a meeting place, as well as a place to vent among friends (Hayati, 2015). Mostly, people in Magetan and Surabaya visit Warkops to fulfill their needs and have become a habit of filling their spare time after doing their routines (Kurniawan and Ridlo, 2017, Sukatmadiredja, 2017). On the other hand, Warkop have become a place of escape for some children who lack attention from their parents (Panuju, 2017). Although most Warkops have a traditional work system, not a few consumers of Warkop are the millennial generation (Raharjo and Winarko, 2021). Therefore, Warkop keep up with technological developments by trying to modernize the payment system that used to be cash to cashless, namely with QRIS (Aryza et al. 2023).

This system works to facilitate transactions by scanning QR codes found in various places. The existence of QRIS is very likely to help reduce the use of cash and minimize the risk of human error in entering payment data (Karniawati et al. 2021). In 2022, BI recorded an increase in the value of digital banking transactions including digital payments of IDR53,144 trillion or an increase of 30.19 percent on a Year-on-Year (YoY) basis compared to 2021. From the survey results in 2022, QRIS topped the list at 89% (Mahayana, 2023).

Continuous innovation causes QRIS to become more sophisticated by providing more features for digital payment users. Many previous studies have examined the development of digital technology in the context of mobile banking (Merhi et al. 2021). Flavián et al. (2020) has examined the factors that influence the use of mobile payments on consumer behavior. QRIS is a payment gateway that uses QR technology as its transaction method. QR Code is a two-dimensional matrix symbol consisting of a series of square boxes arranged in a larger square pattern. These square boxes are referred to as modules, and the size of the square pattern determines the version of the QR Code. QR Code has a structure consisting of a large square box, a small square box, and a data storage pattern. QR Code as a means of payment has the disadvantage that it can only be scanned by applications issued by QR Code issuing companies (closed loop). Realizing this weakness, Bank Indonesia as the Indonesian banking regulator issued the QRIS specification and changed the concept of QR payments from a closed loop to an open loop. With the open loop concept, merchants only need one QR code that can be scanned using applications published by member organizations and certified by PTEN (Lonardi and Legowo, 2021). Previous studies have explored the intention to adopt QRIS in different contexts, whether focusing on MSMEs or individuals; most of these studies utilize already established frameworks, such as the Theory of Planned Behavior and Technology Acceptance Models, with the additions of unique variables relevant to their specific context such as perceived risk and product knowledge (Tenggino & Mauritsius, 2021; Nurhapsari & Sholihah, 2022; Pradesyah, Khairunnisa, & Ismail, 2024; Butarbutar et al. 2022).

To approach problem solving in this study, the research identifies a gap in the literature regarding the influence of psychological factors such as comfort, anxiety, and risk on the adoption of mobile payments in Warkops. To address this, the study will utilize statistical analysis, specifically Structural Equation Modeling (SEM), to explore how these psychological factors mediate key variables like subjective norms, perceived usefulness, and ease of use in the adoption of QRIS. This approach aims to provide a deeper understanding of the role these factors play in technology adoption within this specific context.

Although there have been many studies on factors that influence the use of mobile payments, there are still rare studies that examine mobile payments for transactions in Warkops and explain psychological factors in the mediation model. The psychological factors referred to are comfort, anxiety, and risk, which are variables that have a mediating influence on the research model. Therefore, the contribution of this research will fill the gap in the previous literature by showing that human psychological factors also play a role in the advancement of digital payment technology. On the other hand, this research also uses an object that previous studies, namely Warkops, may rarely research. That way, this research wants to see what are the influencing factors of QRIS usage; understanding this would lead to effective and efficient use of QRIS as a payment method since Warkop owners will know how to improve the QRIS transaction experience by focusing on important variables found in this study.

METHODS

This study uses the Theory of planned behavior proposed by Ajzen (1991) which explains human behavior. TPB comes from the theory of reasoned action (TRA) which is based on social psychological theory (Shih, Chen et al. 2022). TPB is used to measure human behavior towards decision-making. As an emerging technology, mobile payments are now commonly used by people to buy cinema tickets, pay for transportation, and other goods. As the TPB matured, it initiated the development of other behavioral models. Some of these newer behavioral models focuses on technological acceptance, the most well-known being the Technology Acceptance Model (TAM). Alsajjan and Dennis (2010) stated that although uses different terminologies, conceptually two different variables of Perceived Behavioral Control (PBC) which originates in TPB and Perceived Ease of Use (PEOU) which came from TAM measure the same phenomenon. These models assess behavioral intentions, which is defined as “an individual’s willingness to engage in a specific action.” In the present study, the specific action refers to using QRIS in future transactions. Previous studies use similar definitions, utilizing behavioural models to address users’ behavioural intentions (Chang et al. 2021; Gao et al. 2018; Türker et al. 2022).

This study uses a quantitative approach, which aims to explore and analyze the relationship between two or more variables. The population focus of this study is Warkop_customers who make payments using QRIS scattered around Surabaya. The population size is estimated to be around 791,120. This estimation comes from assuming that average daily customer spending is IDR10,000, combined with reports on the number of Warkops in Surabaya (22,000 Warkops) and the average monthly revenue of Warkops in Surabaya (IDR10,788,000) . Using Soper's (2024) a-priori sample size calculator, the minimum required sample size for the model structure is 133, based on an anticipated effect size of 0.1, a desired statistical power level of 0.8, nine latent variables, 32 observed variables, and a probability level of 0.05.

The sample taken to meet the criteria of this study was 150 respondents. Data collection was carried out through a survey method consisting of 35 questions which were evaluated using a 5 (five) Likert scale with answer options from "strongly disagree to strongly agree". The statement indicators used in this study were adopted from previous studies (De Luna et al. 2019, Patsiotis et al. 2022). We distributed the survey using purposive sampling in Warkops that have QRIS as a payment option. A purposive sampling approach was used, involving 150 respondents, which meets the minimum sample size recommended for behavioral studies (Hair et al. 2014). The survey consisted of 35 questions assessed using a 5-point Likert scale, with indicators adopted from De Luna et al. (2019) and Patsiotis et al. (2022), ensuring robust data collection. The statistical method used for data analysis is Structural Equation Modeling (SEM) - Partial Least Square (PLS) as a data analysis tool.

The study measures several variables using specific questionnaire items, each with a set number of questions. For Attitude towards QR payment systems, consisting of 4 items, participants responded to statements like "Using QR mobile payment systems is a good idea" and "Using the QR mobile payment system is very useful." The Behavioral Intention to use QR payment systems includes 4 items such as "If the opportunity arises, I will use the QR payment system" and "I am open to using QR mobile payment systems in the near future" (De Luna, Liébana-Cabanillas et al. 2019). Perceived Usefulness of QR payment systems has 4 items, including "The QRIS mobile payment system is a useful payment method" and "Using QRIS mobile payment makes handling payments easier." Perceived Ease of Use consists of 4 items with examples like "It is easy to become skilled in using the QRIS mobile payment system" and "Interactions with the QRIS mobile payment system are clear and easy to understand." Perceived Security is measured with 4 items such as "I want the QRIS payment system to be safe and secure." Subjective Norms include 3 items like "People who are important to me recommend using the QRIS mobile payment system." Perceived Risk is assessed with 4 items, for example, "I feel protected when making transactions using QRIS" (Patsiotis, Krasonikolakis et al. 2022). Technological Anxiety has 4 items including "I feel worried when using QRIS." Lastly, Decision Comfort is measured using 5 items such as "I feel comfortable in choosing QRIS digital payments" and "I experience positive emotions in choosing QRIS."

Subjective norms are determinants of intentions that arise from social pressure, social influence, and the influence of one's views on the beliefs of others as a consideration for doing or not doing certain behaviors (Winarno et al. 2021). This relates to a person's intention to act based on other people's opinions about what they should do (Ho, Wu et al. 2020). Therefore, Subjective Norms can shape a person to be more confident in using a technology system even though it does not make someone adopt the service (López-Nicolás, Molina-Castillo et al. 2008). A person who is influenced by his social environment (subjective norm) to use a technology, will have a higher intention to use technology. From previous researchers Salmones, Crespo et al. (2005), López-Nicolás, Molina-Castillo et al. (2008) shows that it has identified a direct and positive relationship between Subjective Norms and Perceived Ease of Use.

Riquelme and Rios (2010) states that Subjective Norms have a positive effect on the acceptance of m-banking services. According to Ajzen (1985), Subjective Norms are usually influenced by perceived social pressure on a person's decision to adopt, social pressure is usually caused by friends, family, or individuals in the same social group. Thus, these findings imply that social pressure towards using m-banking influences users to adopt the service. Mun, Jackson et al. (2006) states that Thai society is influenced by high power such as leaders, superiors, or coworkers who propose that certain innovations can influence individuals' perception of the usefulness of the innovation. In the

context of digital payments the extent to which the social environment influences a person to adopt digital payments (Schierz, Schilke et al. 2010). Therefore the following hypothesis is proposed.

H1: Subjective Norms have a positive and significant influence on Perceived Ease of Use.

H2: Subjective Norms have a positive and significant influence on Perceived Usefulness.

H3: Subjective Norms have a positive and significant influence on the Intention to Use QRIS.

Perceived usefulness refers to the online environment, perceived usefulness is based on the idea that certain technologies can help a person to achieve certain results (Liébana-Cabanillas, Ramos de Luna et al. 2015). Customers who use mobile banking will consider the benefits that can be obtained from using these services compared to the benefits of using other banking transaction channels. The benefits obtained include ease of access, ease of transactions, and a high level of security (Prastiawan, Aisjah et al. 2021). TAM proposes that perceived usefulness is the main antecedent of attitude towards use and has been verified in various studies (Ramayah and Ignatius 2005, Liébana-Cabanillas, Ramos de Luna et al. 2015).

H4: Perceived Usefulness has a positive and significant influence on Attitude.

H5: Perceived Usefulness has a positive and significant influence on Intention to use QRIS.

Consumer perceptions regarding ease of use are the extent to which mobile banking is considered easy to understand and operate (Ho, Wu et al. 2020). This ease refers to an individual's perception of using a particular system. Therefore, this is considered one of the aspects that influence the decision to adopt new technology (Davis 1989). The effect of perceived ease of use of a product on perceived usefulness has been demonstrated in various studies from different contexts (Liébana-Cabanillas, Muñoz-Leiva et al. 2012, Muñoz-Leiva, Hernández-Méndez et al. 2012). Previous research states that customers who perceive mobile banking as easy to use have a positive influence on mobile banking customer attitudes (Ho, Wu et al. 2020).

H6: Perceived Ease of Use has a positive and significant influence on Perceived Usefulness.

H7: Perceived Ease of Use has a positive and significant influence on Attitude.

Attitude reflects feelings that can be favorable or adverse that are expressed by a person through their behavior (Liébana-Cabanillas, Ramos de Luna et al. 2015). The consumer's decision to adopt a product depends on his attitude towards the product (Polatoglu and Ekin, 2001). Previous research states that Attitude is the main factor that determines the intention to participate in certain behaviors as shown in the theoretical models (TAM, TRA, and TPB) (Liébana-Cabanillas, Ramos de Luna et al. 2015).

H8: Attitude has a positive and significant influence on the Intention to Use QRIS.

Perceived security is a key issue in the context of electronic payment systems (Ashrafi and Ng 2008). If a person feels safe conducting financial transactions with technology, it is important to minimize concerns regarding the use of technology in making mobile payments (Salisbury, Pearson et al. 2001). Therefore, perceived technological security has a positive influence on user's intention to adopt mobile payment.

H9: Perceived Security has a positive influence on the Intention to Use QRIS.

Various types of risk are one of the significant driving factors towards the use of mobile shopping and have been studied by Hubert, Blut et al. (2017), Chopdar, Korfiatis et al. (2018). Perisk has also been found to be a precursor to ease of use and usability. Based on theory, perceived risk describes a negative attitude towards innovation adoption and is often debated from publications based on the Unified Theory of Acceptance and Use of Technology (UTAUT) (Slade, Dwivedi et al. 2015). The fact is that consumers who have a perception of risk will avoid using or are reluctant to adopt new technology. Previous research shows that risk has a negative influence on the use of new technology (Slade, Dwivedi et al. 2015; Tseng and Wang, 2016).

H10: Risk has a negative influence on the Intention to Use QRIS.

Anxiety is a potential predictor of technology acceptance and adoption (Osatuyi, 2015). Technology anxiety is a negative response to adoption decisions and is associated with certain personality types (Sääksjärvi and Samiee, 2011). Therefore, previous research shows that anxiety has a negative influence on usability, usage, and intention to adopt technology (Lee, Kim et al. 2011, Osatuyi 2015, Lin, MacInnis et al. 2020).

H11: Anxiety has a negative influence on the Intention to Use QRIS.

Comfort can be one of the factors for someone willing to use mobile banking. Akhter (2015) said that a person's feeling of comfort with digital tools can cause risk, complexity, and enjoyment. Jacobson, Gruzd et al. (2020) states that adopting AI technology depends on the level of consumer comfort. At the same time, comfort has been found to have a positive effect on consumer decisions (Heath, Chatterjee et al. 2015, Parker, Lehmann et al. 2016).

H12: Comfort has a positive and significant influence on the Intention to Use QRIS.

The research model for this study can be seen in Figure 1. Furthermore, based on the conceptual framework, the proposed hypotheses are as follows. The research model for this study is based on the Theory of Planned Behavior (TPB) proposed by Ajzen (1991), which has been further developed in studies integrating the Technology Acceptance Model (TAM). The current study's hypotheses development draws heavily from key sources, including Liébana-Cabanillas et al. (2015), Ho, Wu et al. (2020), and Slade, Dwivedi et al. (2015), indicating a foundation built on established behavioral intention frameworks. Unlike prior research focused on general mobile banking adoption, this study emphasizes QRIS adoption and includes variables such as Perceived Security, Comfort, and Anxiety to address local consumer behavior in Indonesia.

RESULTS

Table 1 shows the demographics of the 230 respondents used in this study. There were 179 male respondents (77.2%), and 53 female respondents (22.8%). In this study, the average respondent was 21 years old. The last education of the respondents in this study varied: 108 respondents were in high school (46.6%), 12 respondents had a diploma (5.6%), 109 respondents had a bachelor's degree (47%), and 2 respondents were master's degree (0.9%). In terms of occupation, 6 respondents (2.6%) were students, 111 respondents (47.8%) were university students, 19 respondents (8.2%) were part-time workers, 73 respondents (31.5%) were employees, 14 respondents (6%) were self-employed, 6 respondents (2.6%) were civil servants, 1 respondent (0.4%) was a lecturer, 1 respondent (0.4%) was freelance, and 1 respondent (0.4%) was trading.

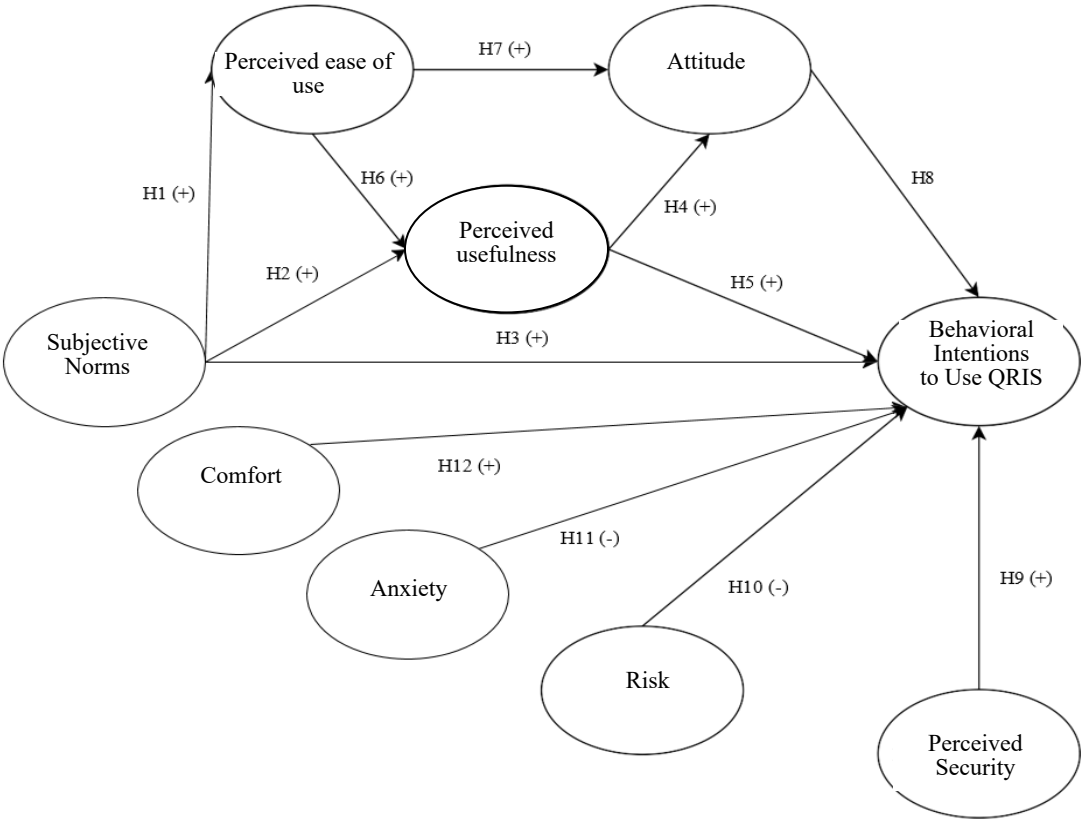

Figure 1. Conceptual framework

Table 2 shows the usage behavior of respondents. Most respondents have been using QRIS in Warkops for more than 12 months (63.4%). The most frequently used platform among respondents is Mobile Banking (61.6%). Payments using QRIS average more than 15 times per month (45.7%). The majority of respondents (88.4%) consider more practical payments as the main reason.

To test construct validity, several measures such as loadings, average variance extracted (AVE), Composite Reliability, and Cronbach's Alpha were examined. As shown in Table 3, all latent variables have AVE >0.5 and composite reliability between 0.6 - 0.95. Some indicators, such as PEOU 2, PU 2, SNS 3, PER 4, ANX 2, and ANX 4, have outer loadings that are lower than the specified standard of 0.5. Therefore, in this study, the variables PEOU 2, PU 2, SNS 3, PER 4, ANX 2, and ANX 4 were deleted.

Table 1. Demographics

No	Variable	Percentage (Sample)
1. Gender	Male	77.2% (179)
	Female	22.8% (53)
2. Age	17–25 years old	77.3% (178)
	26–35 years old	20% (47)
	36–43 years old	0.8% (6)
3. Education level	SMA/SMK	46.6% (108)
	Diploma	5.6% (12)
	S1/Sarjana	47% (109)
	S2/Master	0.9% (2)
4. Profession	High School Student	2.6% (6)
	University Student	47.8% (111)
	Part-time Worker	8.2% (19)
	Employee (Full-time Worker)	31.5% (73)
	Self-employed	6% (14)
	Civil Servant (ASN)	2.6% (6)
	Lecturer	0.4 (1)
	Freelance	0.4 (1)
	Businessman/Vendor	0.4% (1)

Table 3. Convergent Validity

Latent Variable	Observed Variable	Indicator	Outer Loadings	AVE	CR	Cronbach's Alpha
ATT	ATT 1	Using the QRIS payment system is a good idea	0.781	0.511	0.856	0.68
	ATT 2	Using the QRIS payment system is convenient.	0.643			
	ATT 3	The use of the QRIS payment system is very useful.	0.745			
	ATT 4	Using the QRIS payment system is interesting.	0.682			
INT	INT 1	If the opportunity arises, I will use the QRIS payment system.	0.751	0.637	0.875	0.809
	INT 2	I will probably use the QRIS payment system in the near future.	0.796			
	INT 3	I am open to using the QRIS payment system in the near future.	0.816			
	INT 4	I intend to use the QRIS payment system when the opportunity arises.	0.826			
PU	PEU 1	The QRIS payment system is a useful payment method.	0.768	0.65	0.848	0.73
	PEU 3	The QRIS payment system enables quick use of mobile applications (e.g. ticket purchase, mobile coupon use, etc.).	0.855			
	PEU 4	I believe that the QRIS payment system improves my consumer decisions (providing flexibility, speed, etc.)	0.794			
PEOU	PEOU 1	It is easy to become skilled in using the QRIS payment system.	0.74	0.633	0.873	0.805

Table 3. Convergent Validity (continue)

Latent Variable	Observed Variable	Indicator	Outer Loadings	AVE	CR	Cronbach's Alpha
	PEOU 2	Interactions with the QRIS payment system are clear and easy to understand.	0.774			
	PEOU 3	It is easy to follow all the steps of the QRIS payment system.	0.86			
	PEOU 4	It is easy to interact/operate with the QRIS payment system.	0.803			
PS	PS 1	The risk of unauthorized parties intervening/spying/ disrupting the QRIS payment process is low.	0.785	0.619	0.865	0.787
	PS 2	The risk of misuse of consumer information (e.g., business partner name, payment amount) is low when using the QRIS payment system.	0.882			
	PS 3	The risk of misuse of billing information (e.g., credit card number, bank account data) is low when using QRIS payments.	0.839			
	PS 4	I want the QRIS payment system to be safe and secure.	0.614			
SNS	SNS 1	People who are important to me recommend using the QRIS payment system.	0.845	0.762	0.906	0.844
	SNS 2	People who are important to me see the QRIS payment system as useful.	0.897			
	SNS 4	People who are important to me think that using the QRIS payment system is a good idea.	0.877			
PER	PER 1	I feel safe when making transactions using QRIS.	0.878	0.72	0.885	0.805
	PER 2	I feel protected when making transactions using QRIS.	0.855			
	PER 3	I know that QRIS will handle my transactions correctly.	0.811			
ANX	ANX 1	I feel worried when using QRIS.	0.877	0.745	0.854	0.658
	ANX 3	Payments using QRIS are a bit scary for me.	0.849			
COMFO	COMFO 1	I feel comfortable in choosing QRIS digital payments.	0.743	0.602	0.883	0.835
	COMFO 2	I feel happy choosing QRIS.	0.776			
	COMFO 3	I feel positive emotions in choosing QRIS.	0.775			
	COMFO 4	Regardless of whether it is the "best choice" or not, I have no problem choosing QRIS.	0.763			
	COMFO 5	Even though I don't know if QRIS is the best, I feel very comfortable with the choice I made.	0.822			

A bootstrapping procedure with 1000 iterations was performed to test the statistical significance of the path coefficient. Table 4 shows the results of hypothesis testing for the hypotheses proposed in this study and Figure 2 shows the SmartPLS bootstrapping result. Furthermore, the model fit of the present model are shown in Table 5, the SRMR values (0.07 for the Saturated Model and 0.12 for the Estimated Model) indicate an acceptable fit, though higher for the Estimated Model. Discrepancy measures (d_ULS and d_G) and Chi-Square differences reflect model complexity, while NFI values (0.68 and 0.66) show a moderate fit. In PLS-SEM, these fit indices are supplementary, with the focus on predictive power (R^2) and path significance rather than perfect model fit. The accepted hypotheses are ATT to BI, PEOU to ATT, PEOU to PU, PU to ATT, SN to PEOU, and SN to PU. In addition, the hypotheses that are not mentioned are rejected. The test results show that perceived anxiety has no significant effect on behavioral intention, and H1 is rejected (β = -0.095, p = 0.289). Perceived attitude value has a significant positive influence on behavioral intention, and H2 is accepted (β = 0.483, p = 0.000). A person's convenience has no significant effect

on behavioral intentions, and H3 is rejected (β = 0.215, p = 0.169). Perceived ease of use has a significant positive influence on attitude, and H4 is accepted (β = 0.384, p = 0.000). Perceived ease of use has a significant positive effect on perceived usefulness, H5 is accepted (β = 0.509, p = 0.000). Perceived security has no significant effect on behavioral intention, H6 is rejected (β = -0.057, p = 0.400). Perceived usefulness has a significant positive influence on attitude, H7 is accepted (β = 0.417, p = 0.000). Perceived usefulness has no significant effect on behavioral intentions, H8 is rejected (β = 0.070, p = 0.532). Perceived risk has no significant effect on behavioral intention, H9 is rejected (β = 0.010, p = 0.939). Subjective norms have no significant effect on behavioral intentions, H10 is rejected (β = 0.129, p = 0.342). Subjective norms have a significant positive effect on perceived ease of use, (β = 0.618, p = 0.000) and subjective norms have a significant positive effect on perceived usefulness (β = 0.279, p = 0.007). Therefore, both hypotheses of H11 and H12 are accepted.

Attitude is a key factor that influences behavioral intention, as individuals with a more positive attitude are more likely to adopt QRIS services as a digital payment method. This study found that the higher a person's attitude, the higher their intention to use QRIS, consistent with previous research (Shanmugam et al. 2014). Attitude affects behavioral intention because individuals with a more open attitude are generally more sensitive to technological developments, leading them to try using QRIS (Lin et al. 2020). Perceived Ease of Use, which refers to how easy an individual perceives the system to be, also plays a role in influencing both Attitude and Perceived Usefulness. The ease offered by QRIS appeals to tech-savvy users, and the more straightforward the system is, the more positive their attitude towards it becomes (Kurniasari and Abd Hamid, 2020; Rehman et al. 2019). Additionally, Perceived Ease of Use also affects Perceived Usefulness because individuals who find QRIS easy to use are more likely to see its benefits in improving transaction efficiency (Raza et al. 2017; Püschel et al. 2010). The results also show that Perceived Usefulness influences Attitude, as users who perceive the system as useful and efficient in their environment are more willing to adopt it (Wang and Dai, 2020; Akturan and Tezcan, 2012; Ho et al. 2020). Moreover, Subjective Norms, which refer to the social influences that drive individuals to adopt certain behaviors, affect both Perceived Ease of Use and Perceived Usefulness. People are motivated to try QRIS when they observe others in their environment using it easily, thus influencing their perception of its ease and usefulness (Mutahar et al. 2017; Salmones et al. 2005; Winarno et al. 2021). In turn, these social influences lead individuals to experience the convenience of digital payments without needing to carry cash, further reinforcing its perceived usefulness (Liébana-Cabanillas et al. 2018; Daragmeh et al. 2021).

Table 4. Hypothesis Testing Results

	B	P-Values	Decision
ANX → BI	-0.095	0.289	Rejected
AT → BI	0.483	0.000	Accepted
COM → BI	0.215	0.169	Rejected
PEOU → AT	0.384	0.000	Accepted
PEOU → PU	0.509	0.000	Accepted
PS → BI	-0.057	0.400	Rejected
PU → AT	0.417	0.000	Accepted
PU→ BI	0.070	0.532	Rejected
RISK → BI	0.010	0.939	Rejected
SN → BI	0.129	0.342	Rejected
SN → PEOU	0.618	0.000	Accepted
SN → PU	0.279	0.007	Accepted

Note: Perceived ease of use (PEOU); Attitude (AT); Perceived usefulness (PU); Behavioral intention (BI); Comfort (COM); Perceived security (PS); Subjective norms (SN); Anxiety (ANX).

Table 5. Model Fit

	Saturated Model	Estimated Model
SRMR	0.07	0.12
d_ULS	2.77	7.15
d_G	1.18	1.35
Chi-Square	1438.43	1534.22
NFI	0.68	0.66

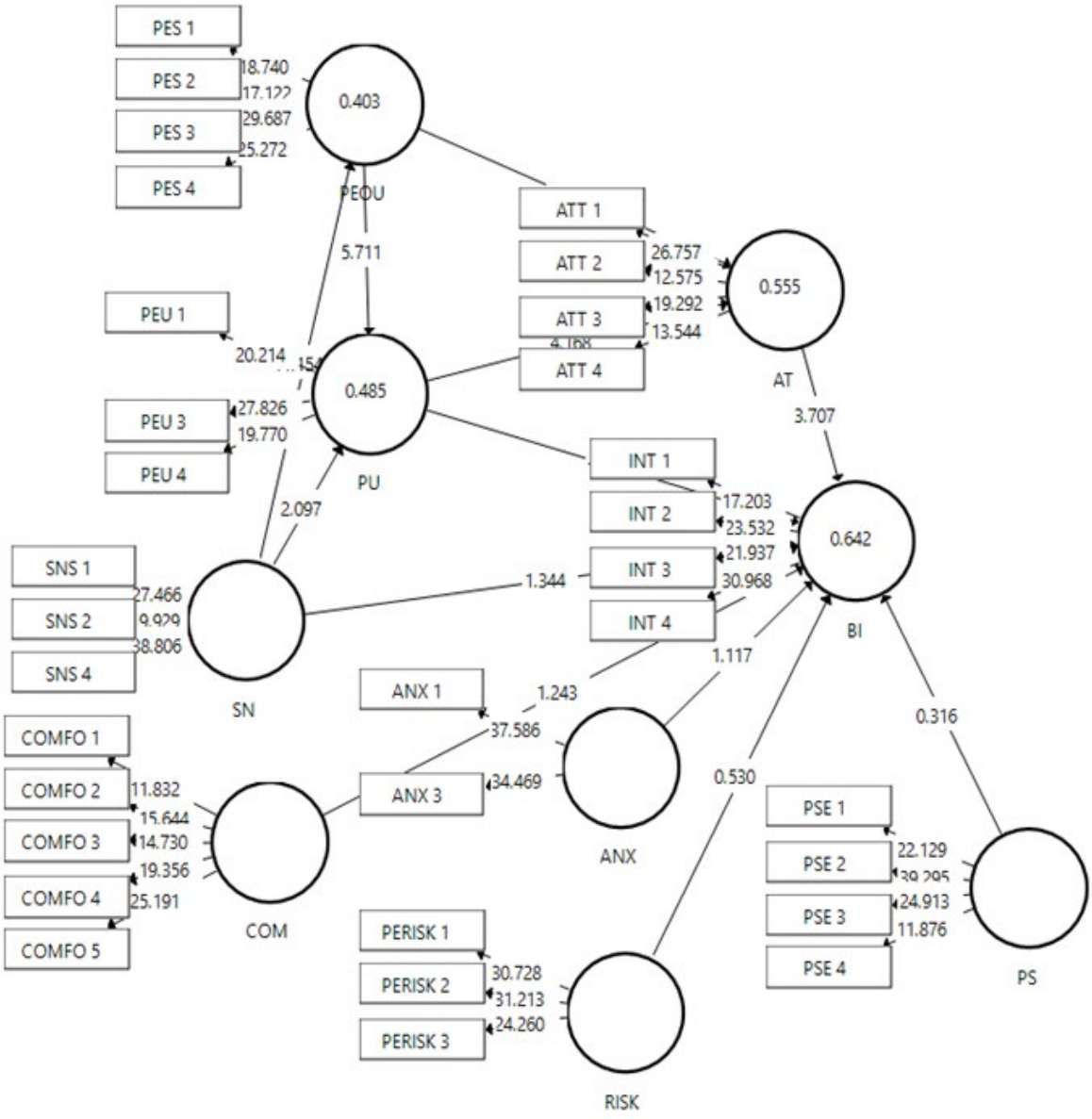

Figure 1. Conceptual framework

Managerial Implications

Based on the findings of this study, several managerial implications arise from the research results. First, education and awareness campaigns related to QRIS need to be strengthened, as the majority of respondents cited ease of use as the main reason for using QRIS. The hypothesis testing results show that perceived ease of use (PEOU) has a significant influence on attitude (AT) and perceived usefulness (PU). Additionally, attitude toward QRIS significantly affects behavioral intention (BI), so campaigns emphasizing the ease of use and benefits of QRIS will increase users' intention to adopt this technology. Second, improving facilitating conditions for using QRIS is crucial. Although comfort (COM) and perceived security (PS) do not have a significant effect on behavioral intention, supportive conditions like easy access and training on QRIS usage remain important. Warkop owners can provide more support in terms of facilities, such as clear QR codes, adequate internet access, and convenient scan positioning. Moreover, training to ensure users experience the benefits and comfort of using QRIS is essential. Lastly, utilizing subjective norms (SN) should also be considered, as the hypothesis testing results indicate that subjective norms significantly influence perceptions of ease of use and usefulness of QRIS. Making Warkop customers feel that there is a supportive environment for using QRIS will greatly assist in customer adoption. For example, implementing a standard operational procedure (SOP) that requires cashiers to offer QRIS payments could encourage this adoption. In terms of prioritization, the strongest predictor of BI is AT, and AT itself is strongly predicted by PEOU and PU. Thus, focusing on accessibility and ease, followed by features and effectiveness of transactions, can be a good option for Warkop owners.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the analysis and discussion, it can be concluded that Attitude influences Behavioral Intention. Perceived Ease of Use influences Attitude and Perceived Usefulness. Perceived Usefulness affects Attitude. Subjective Norm affects Perceived Ease of Use and Perceived Usefulness. This research aligns with previous findings, such as Liébana-Cabanillas et al. (2015) and López-Nicolás et al. (2008), confirming the significant role of subjective norms, ease of use, and usefulness in influencing behavioral intentions. However, the study introduces unique findings on the roles of Comfort, Anxiety, and Perceived Security, contributing new insights specific to the QRIS adoption in Warkops. The findings broaden academic perspectives and provide practical recommendations for Warkops to implement QRIS for digital payments. Despite focusing on a relatively homogeneous demographic, this study offers a reference point for future research. Further studies are encouraged to validate these findings across diverse regions to strengthen the generalizability of the results.

Recommendations

Future research is recommended to explore other more specific factors related to the use of QRIS, particularly its technological aspects, such as system reliability, ease of integration with other platforms, as well as the availability of network and technological infrastructure in Warkops. Additionally, more in-depth studies on financial aspects are needed, such as the impact of transaction costs on Warkops profitability, and how QRIS-based incentives or promotions can influence customer behavior and Warkops revenues. More comprehensive research will provide a clearer understanding of how QRIS can be optimized as a payment tool in the Warkop sector and related industries.

FUNDING STATEMENT: This research did not receive any specific grant from public, commercial, or not-for-profit funding agencies.

CONFLICTS OF INTEREST: The author declares no conflict of interest.

REFERENCES

Ahdiat, A. (2023). Penetrasi internet di Indonesia tumbuh pesat dalam 10 tahun terakhir. Retrieved October 4, 2023, from https://databoks.katadata.co.id/datapublish/2023/03/09/penetrasi-internet-di-indonesia-tumbuh-pesat-dalam-10-tahun-terakhir

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), Action control: From cognition to behavior (pp. 11-39). Springer.

Akhter, S. H. (2015). Impact of internet usage comfort and internet technical comfort on online shopping and online banking. Journal of International Consumer Marketing, 27(3), 207-219.

Akturan, U., & Tezcan, N. (2012). Mobile banking adoption of the youth market: Perceptions and intentions. Marketing Intelligence & Planning, 30(4), 444-459.

Al-Saedi, K., Miskon, S., Sadiq, S. M., & Ali, M. A. (2020). Developing a general extended UTAUT model for M-payment adoption. Technology in Society, 62, 101293.

Alsajjan, B., & Dennis, C. (2010). Internet banking acceptance model: Cross-market examination. Journal of Business Research, 63(9-10), 957-963.

Ardiansyahmiraja, B., Kajee, J., & Ayuwati, I. D. (2024). Estimating the number of traditional coffee shops (Warung Kopi) in Surabaya. Proceedings of the International Symposium on Management, 21.

Aryza, S., Nasution, F., Lubis, M., & Siregar, R. (2023). Peningkatan efisiensi dan proteksi penerapan transaksi payment gateway berbasis QRIS pada UMKM di Kota Medan. Prosiding Seminar Nasional Teknik UISU (SEMNASTEK).

Ashrafi, M. Z., & Ng, S. K. (2008). Enabling privacy-preserving e-payment processing. In J. Xu, H. Lu, T. W. Ling, & Y. Zhang (Eds.), Database systems for advanced applications (Vol. 13, pp. 195-206). Springer.

Bai, C., Dallasega, P., Orzes, G., & Sarkis, J. (2020). Industry 4.0 technologies assessment: A sustainability perspective. International Journal of Production Economics, 229, 107776.

Balci, E. V., Kiraz, M. S., Altuntas, G., & Ozturk, B. (2022). Exploring the transformation of opinion leaders from a traditional to a digital mindset. International Journal of Organizational Leadership, 11(Special Issue 2022), 36-50.

Bank Indonesia. (2019, August 17). Annual report. Bank Indonesia.

Butarbutar, N., Grace, E., Putra, L. A., Loist, C., & Sudirman, A. (2022). Behavioral intention constituent analysis of QRIS digital payment tools in MSMEs in Pematangsiantar City. Ideas: Jurnal Pendidikan, Sosial, dan Budaya, 8(4), 1537-1546.

Chang, V., Chen, W., Xu, Q. A., & Xiong, C. (2021). Towards the customers' intention to use QR codes in mobile payments. Journal of Global Information Management (JGIM), 29(6), 1-21.

Chopdar, P. K., Korfiatis, N., Sivakumar, V. J., & Lytras, M. D. (2018). Mobile shopping apps adoption and perceived risks: A cross-country perspective utilizing the Unified Theory of Acceptance and Use of Technology. Computers in Human Behavior, 86, 109-128.

Dalenogare, L. S., Benitez, G. B., Ayala, N. F., & Frank, A. G. (2018). The expected contribution of Industry 4.0 technologies for industrial performance. International Journal of Production Economics, 204, 383-394.

Daragmeh, A., Sági, J., & Zéman, Z. (2021). FinTech payments in the era of COVID-19: Factors influencing behavioral intentions of "Generation X" in Hungary to use mobile payment. Journal of Behavioral and Experimental Finance, 32, 100574.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319-340.

De Luna, I. R., Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2019). Mobile payment is not all the same: The adoption of mobile payment systems depending on the technology applied. Technological Forecasting and Social Change, 146, 931-944.

Flavián, C., Guinalíu, M., & Lu, Y. (2020). Mobile payments adoption—introducing mindfulness to better understand consumer behavior. International Journal of Bank Marketing, 38(7), 1575-1599.

Frank, A. G., Dalenogare, L. S., & Ayala, N. F. (2019). Industry 4.0 technologies: Implementation patterns in manufacturing companies. International Journal of Production Economics, 210, 15-26.

Gao, S., Yang, X., Guo, H., & Jing, J. (2018). An empirical study on users' continuous usage intention of QR code mobile payment services in China. International Journal of E-Adoption (IJEA), 10(1), 18-33.

Gu, J.-C., Lee, S.-C., & Suh, Y.-H. (2009). Determinants of behavioral intention to mobile banking. Expert Systems with Applications, 36(9), 11605-11616.

Hayati, N. (2015). Eksistensi penggunaan Wi-Fi di warung kopi di Kota Banda Aceh. Jurnal Al-Ijtimaiyyah, 1(1), 1-12.

Heath, T. B., Larrick, R. P., & Wu, G. (2015). Innovation sequences over iterated offerings: A relative innovation, comfort, and stimulation framework

of consumer responses. Journal of Marketing, 79(6), 71-83.

Ho, J. C., Liao, Y.-W., & Rosenthal, S. R. (2020). Factors affecting the behavioral intention to adopt mobile banking: An international comparison. Technology in Society, 63, 101360.

Hubert, M., Blut, M., Brock, C., Zhang, C., & Koch, V. (2017). Acceptance of smartphone-based mobile shopping: Mobile benefits, customer characteristics, perceived risks, and the impact of application context. Psychology & Marketing, 34(2), 175-194.

Jacobson, J., Gruzd, A., & Hernández-García, Á. (2020). Social media marketing: Who is watching the watchers? Journal of Retailing and Consumer Services, 53, 101774.

Karniawati, N. P. A., Syarifudin, A., & Ardana, I. K. (2021). Community perception of using QR code payment in the new normal era. PalArch's Journal of Archaeology of Egypt/Egyptology, 18(1), 3986-3999.

Kumar, M. A., & Ayedee, D. N. (2021). Technology adoption: A solution for SMEs to overcome problems during COVID-19. Academy of Marketing Studies Journal, 25(1), forthcoming.

Kurniasari, F., & Abd Hamid, N. (2020). The effect of perceived usefulness, perceived ease of use, trust, attitude, and satisfaction into continuance of intention in using Alipay. Management & Accounting Review (MAR), 19(2), 132-150.

Kurniawan, A., & Ridlo, M. R. (2017). Perilaku konsumtif remaja penikmat warung kopi. Dilema, 32(1), 9-22.

Lee, K., Aaker, J. L., & Gardner, W. L. (2011). Stereotype threat in the marketplace: Consumer anxiety and purchase intentions. Journal of Consumer Research, 38(2), 343-357.

Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2018). Predicting the determinants of mobile payment acceptance: A hybrid SEM-neural network approach. Technological Forecasting and Social Change, 129, 117-130.

Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2012). The role of mobile payment systems in electronic commerce. Actas de la EMAC Conference.

Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2015). User behavior in QR mobile payment system: The QR Payment Acceptance Model. Technology Analysis & Strategic Management, 27(9), 1031-1049.

Lin, S. H., Chen, H. Y., & Chiu, Y. H. (2020). Behavioral intention towards mobile learning in Taiwan, China, Indonesia, and Vietnam. Technology in Society, 63, 101360.

Lin, S.-H., & Lin, S. J. (2020). QR code payment adoption in Taiwan: A study based on the Unified Theory of Acceptance and Use of Technology (UTAUT) and Innovation Diffusion Theory (IDT). Journal of Open Innovation: Technology, Market, and Complexity, 6(3), 71.

Moorman, C., & Day, G. S. (2016). Organizing for marketing excellence. Journal of Marketing, 80(6), 6-35.

Moorman, C., & Rust, R. T. (1999). The role of marketing. Journal of Marketing, 63(Special Issue 1999), 180-197.

Okumus, F., Bilgihan, A., & Ozturk, A. B. (2016). Factors affecting the acceptance of smartphone diet apps. Journal of Hospitality Marketing & Management, 25(6), 726-747.

Oliveira, T., Faria, M., Thomas, M. A., & Popovič, A. (2014). Extending the understanding of mobile banking adoption: When UTAUT meets TTF and ITM. International Journal of Information Management, 34(5), 689-703.

Patel, K., & Patel, H. (2018). Adoption of internet banking services in Gujarat: A study using UTAUT2 model. Journal of Internet Banking and Commerce, 23(3), 1-19.

Pillai, R., Sivathanu, B., & Maruping, L. M. (2022). Smartphone addiction and compulsive shopping behavior: Analyzing the moderating role of technology awareness. International Journal of Information Management, 62, 102429.

Putra, L. A., Lubis, M., Siregar, R., & Sari, N. M. (2023). Perilaku konsumen pengguna pembayaran digital dengan QRIS pada usaha mikro, kecil, dan menengah di Kota Medan. Jurnal Akuntansi dan Bisnis, 11(1), 38-45.

Rathore, H. S. (2016). Adoption of digital wallet by consumers. BVIMR Management Edge, 9(2), 1-13.

Rogers, E. M. (2003). Diffusion of innovations (5th ed.). Free Press.

Shaw, N., & Sergueeva, K. (2019). The non-monetary benefits of mobile commerce: Extending UTAUT2 with perceived value. International Journal of Information Management, 45, 44-55.

Shin, D.-H. (2009). Towards an understanding of the consumer acceptance of mobile wallet.

Computers in Human Behavior, 25(6), 1343-1354.

Sun, J., Wang, Y., & Shi, W. (2020). The factors influencing the adoption of QR code mobile payment systems in China: An empirical study. Sustainability, 12(9), 3708.

Tan, G. W. H., Lee, V. H., Lin, B., & Ooi, K. B. (2017). Mobile applications in tourism: The future of the tourism industry? Industrial Management & Data Systems, 117(3), 560-581.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425-478.

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the Unified Theory of Acceptance and Use of Technology. MIS Quarterly, 36(1), 157-178.

Wijaya, T., & Ahmad, F. (2021). Developing the UTAUT2 model to measure the acceptance of e-wallets in Indonesia. Jurnal Manajemen dan Kewirausahaan, 23(2), 101-116.

Yadav, R., & Pathak, G. S. (2017). Determinants of consumers' green purchase behavior in a developing nation: Applying and extending the Theory of Planned Behavior. Ecological Economics, 134, 114-122.

Yang, H., & Forney, J. C. (2013). The moderating role of consumer technology anxiety in mobile shopping behavior. Journal of Retailing and Consumer Services, 20(1), 26-34.

Yang, Q., & Mai, Y. (2020). Exploring the determinants of user behavior in QR code mobile payment adoption. Electronic Commerce Research, 20(4), 891-910.

Yang, Y., Liu, Y., Li, H., & Yu, B. (2015). Understanding perceived risks in mobile payment acceptance. Industrial Management & Data Systems, 115(2), 253-269.

Zhou, T. (2014). Understanding the determinants of mobile payment continuance usage. Industrial Management & Data Systems, 114(6), 936-948.