Volume 3, Issue 1, Dec 2024, ISSN: 2948-4316

DOI: https://doi.org/10.5281/zenodo.14728999

Published on: 31 December 2024

Journal of Social Sciences and Business

Quest International University

https://qiu.edu.my/journal/index.php/jssb/index

FACTORS INFLUENCING THE ADOPTION OF QR MOBILE PAYMENT AMONG MALAYSIAN CONSUMERS

Chong Chun Kit[1*], Man Kah Yen[2], Alvin Ding Chen Ang[3] and Norlela Awang Cha[4]

[1]Quest International University, Perak, Malaysia
[2]Quest International University, Perak, Malaysia
[3]Quest International University, Perak, Malaysia
[4]Quest International University, Perak, Malaysia

Corresponding author: chunkit.chong@qiu.edu.my*[1]

Abstract: The purpose of this study is to identify the variables that influence the adoption of QR mobile payment among Malaysian consumers. The independent variables that have been used in this study are perceived ease of use, perceived usefulness, promotional benefits, privacy & security and social influence and the dependent variable is adoption of QR mobile payment. This study used the Theory of Acceptance Model (TAM) to identify the relationship between the dependent variables and independent variables. Moreover, the data were gathered through a questionnaire that was distributed to the 160 final respondents using a purposive sampling technique. Consequently, IBM Statistical Packages for Social Sciences (SPSS) version 26 was used to analyze the data. The results for Cronbach's Alpha for all the variables are greater than 0.9 which shows the excellent reliability and internal consistency of the data. The findings of this study using Pearson Correlation Coefficient show that Perceived Usefulness, Perceived Ease of Use show a strong positive correlation with the adoption of QR mobile payment among Malaysian consumers. Meanwhile, Promotional Benefits, Social Influence, Privacy & Security had a moderate positive correlation with the adoption of QR mobile payment among Malaysian consumers. Multiple regression results showed that 74% of the variability of the adoption of QR mobile payment among Malaysian consumers can be explained by the independent variables. In addition, this study implies to the financial institutions, government, and to users of QR Mobile payment. The financial institution may refer to the findings of this study for improvement on QR mobile payment application, the awareness and the benefit of using QR mobile payment, whereas the government may impose laws related to mobile banking and lastly the users of QR mobile payment may benefit from this study because the consumer may perform transactions quickly and save time.

Keywords: Consumer Behavior, QR Mobile Payment, TAM, Malaysian Consumer

INTRODUCTION

Due to the current global trend of QR mobile payments, Malaysia will be able to fully adopt the Quick Responses (QR) payment mechanism in the near future. In the recent 2024 Malaysian budget, Prime Minister Datuk Seri Anwar Ibrahim encouraged SMEs to digitise their operations by offering funds for SME digitisation (HSBC,2023). Through the E-Duit Campaign, which was started to increase public awareness of the adoption of e-payments, Bank Negara Malaysia (BNM) has been speeding up the use of electronic payment methods in Malaysia, including cards, e-wallets, and internet/mobile banking. BNM encourages more consumers to use QR mobile payment payments as their preferred method of transaction in the upcoming years in the Financial Sector Blueprint of 2022–2026.

At the moment, the majority of the people in Malaysia still prefer using online banking and debit cards as their cashless payment. However, Quick Response (QR) code mobile payment is still considered as a new payment method. In order to perform a transaction, the buyer will only have to scan a QR code and insert the transaction amount that they're willing to pay, then once it is complete, the seller will receive the payment instantly. Malaysia is slowly adopting the QR Mobile payment as their primary payment method where China had already almost fully adopted cashless payment with the QR mobile payment application such as Wechat Pay and AliPay. It also allowed the foreigner who visits the country to have a smooth payment experience with these QR mobile payment methods.

Malaysia's national QR code standard which is known as DuitNow QR, has become a common popular method among the SMEs, hawker food stall, and public transportation system. This adoption is mainly because of the convenience and cost-effectiveness of QR mobile payment, which were appealing to both customers and merchants. The increasing number of various e-wallet services that use QR mobile payment has proven how integrated these payment methods have come into Malaysian's daily lives, making it convenient for both merchants and customers to carry out transactions.

The future of QR mobile payment in Malaysia looks promising as both private and public sectors are continuously supporting cashless transactions in their business. As financial technology continues to improve and the use of digital payment increases, in the near future, QR mobile payment might play an important role in Malaysia's payment ecosystem.

LITERATURE REVIEW

Extended Technology Acceptance Model

Many theoretical models can be used to investigate the intention of consumers to adopt new technology. The technology acceptance model (TAM) stands out because it can predict the variables affecting consumer behavior and the willingness to adopt information systems or technologies (Cham et al., 2018). This model has been widely applied by researchers in different fields, such as social networks (Muhammad Alshurideh et al., 2019; Salloum et al., 2018), electronic payment (Phurkwattanakul & Methavasaraphak, 2021; Md Wasiul Karim et al., 2020), toll collection system (Hermawan et al., 2023; Lim, 2023), mobile banking (De Leon, 2019; Ho et al., 2020) and other different systems or technologies. Venkatesh and Davis (2000) found that the model inadequately examines determinants that influence consumers' intentions to use new systems or technologies. Therefore, it is advised to include additional variables to strengthen the model. Promotional benefit and privacy & security are extended variables that were found to be positive on behavioral intention to adopt new technology and systems (Ming et al., 2020: Barry et al., 2018). Thus, this study will consist of 5 variables, namely perceived usefulness, perceived ease of use, promotional benefit, privacy & security, and social influence.

Adoption of QR mobile payment

Lou et al. (2017) defined the QR code payment as a contactless payment method that was developed from mobile banking, where the payment is completed by scanning the QR code. According to Lou et al. (2017), there are five benefits associated with QR code payment: increasing customer satisfaction and experience; saving time by avoiding currency exchanges (Zhong & Moon, 2022; Nur Fathin, 2020); boosting employee productivity; offering a hygienic contactless payment method (Agrawal, 2021); and lowering the risk of fraud from counterfeit currency, safeguarding consumers and businesses (Ayuningtyas et al., 2024). QR mobile payment has become increasingly adopted and popular since it provides a convenience and safety channel for consumers to purchase goods and services using their mobile devices including smartphones, tablets, and smartwatches. Cashless payments can be viewed as a complex technology, and understanding the factors that influence consumers' adoption of cashless payments is a necessary process to enable electronic payments and follow the global trend of the cashless era (Rahman et al., 2020).

Perceived Ease of Use

Perceived ease of use is defined as perceived ease of use is a person's belief that a technology system can be easily understood and used Davis et al. (1993). The Malaysian government has launched various programs and policies to create a full-fledged environment for adopting QR code payment. The increase in internet penetration rate will establish a stable internet connection environment for users to use QR code payment and make the whole process easy. As a result, it promotes QR code payment, making it popular and becoming an increasingly important payment method.

Moreover, the studies conducted by Cao et al., (2016); Effendy et al., (2021); Ntaukira et al., (2019); Putri et al., (2022); Yusuf et al., (2024) asserted that the perceived ease of use has a favorable impact on consumer intention to utilize the e-payment system. People will only be more likely to utilize the QR mobile payment system if they discover it is simple to use, learn, and comprehend. Based on the statement above, the following hypothesis is developed:

H1: There is a significant relationship between perceived ease of use and the adoption of QR mobile payment among Malaysian consumers.

Perceived Usefulness

Perceived usefulness is defined as people's intention to use new technology in which people put a strong sense of belief that the latest technology will enhance their performance to execute their jobs more effectively (Ozturk, 2016). According to Nur Fathin et al. (2020), customers believe that utilizing mobile payments with QR codes has made their transactions easier and more convenient. They understood that by employing this payment method, they would be able to save time. This is because they can complete transactions quickly when using mobile payments by scanning QR codes. The study indicated that QR code payment is efficient and effective in making transactions.

In addition, Djaniar et al. (2024) claimed that QR code payment can bring practical benefits to users including simplifying the payment process by scanning the barcode through portable mobile devices. The introduction of QR code payment also enables users to track their daily transactions easily via their mobile devices (Mahmood, 2023). Based on the statement above, the following hypothesis is developed:

H2: There is a significant relationship between perceived usefulness and the adoption of QR mobile payment among Malaysian consumers.

Promotional Benefit

The term "promotional benefit" is defined as monetary advantage and psychological advantage provided by retailers to retain their customers' loyalty (Ming et al., 2020). Promotional benefits offered by different e-wallet providers which include TNG e-wallet, GrabPay, and Alipay may vary. These consist of cashback, loyalty points, discounts, coupons, etcetera. The e-wallet providers may offer these benefits for users to retain their loyalty and attract new users when using QR code payment. For example, respondents claimed that they can obtain cashback rewards after spending on Boost, one of the e-wallet software (Raimee et al., 2021). The studies conducted by Hajazi et al., (2021); Abd Malik et al., (2020); Ming et al., (2020) have stated that promotional benefits offered by e-wallet providers stimulated the intention to use QR code payment. Based on the statement above, the following hypothesis is developed:

H3: There is a significant relationship between promotional benefits and the adoption of QR mobile payment among Malaysian consumers.

Privacy and Security

Privacy and security concern is the most common issue in this digital era and everyone treats it seriously to protect their identities (Chung & Paynter, 2002; Inman & Nikolova, 2017; Karim et al., 2020). If customers experience a loss as a result of the improper use of their personal information, they might perceive potential risks (Mou et al., 2020). According to Nseir et al., (2013); Türker et al., (2022), the ease of use of QR code payment has contributed to their rise in popularity. Customers may lose confidence in a payment system provider and refuse to use e-payments unless privacy and security elements are included (Gitau & Nzuki, 2014); (Barkhordari et al., 2017). Previous empirical research has proven that privacy & security have positively influenced behavioral intention to use mobile banking (Nguyen, 2017; Karim et al., 2020; Barry et al., 2018). Users are less likely to utilize QR mobile payment for financial transactions if they believe it does not sufficiently protect their data. Based on the statement above, the following hypothesis is developed:

H4: There is a significant relationship between privacy & security and the adoption of QR mobile payment among Malaysian consumers.

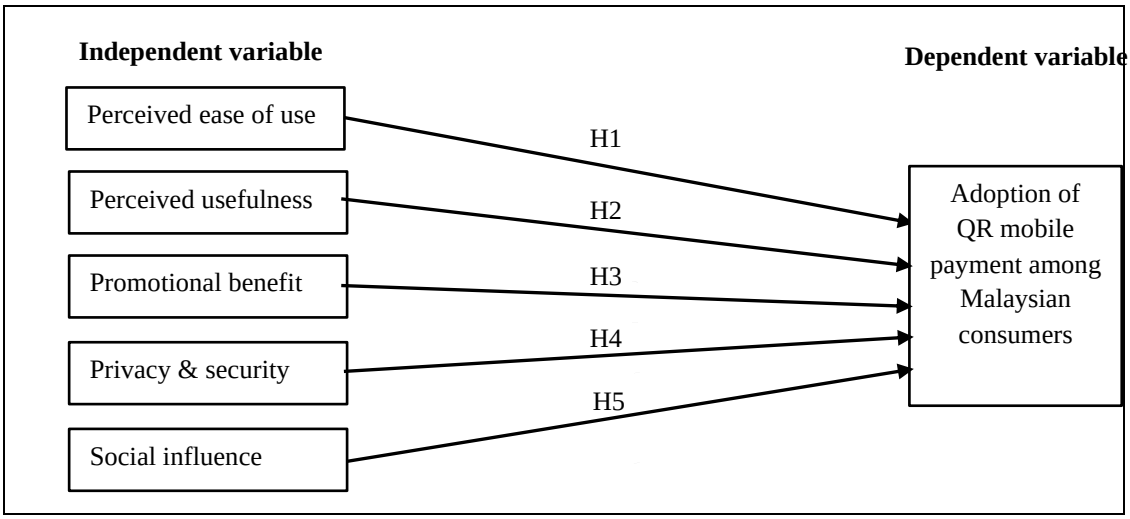
Social Influence

Social influence is the degree to which a person considers important others to believe that they should use the new system. Friends, family, colleagues, and social influences may be included under this category. This group of people may persuade individuals to adopt new technology, such as QR mobile payments by Teoh et al. (2020). Studies conducted by Schroeder et al. (2023) asserted that social influence is an important factor in their willingness to adopt new technology. When older adults witness others in their circles of friends utilizing new technologies, especially if these peers offer positive comments on new technology, they are more inclined to follow suit. The result of the study indicated that peer influence is a strong motivator for people to follow new norms, such as adopting QR mobile payment.

Several research studies namely Chang et al. (2021); Kosim andLegowa (2021); Ebubedike et al. (2022); Djaniar et al. (2024) denoted that social influence has a significant positive relationship with the adoption of QR mobile payment. According to Lu (2014); Suo et al. (2022), social influences reflect in people's current high level of interconnectedness, which is a result of social media's rapid development. Based on the statement above, the following hypothesis is developed:

H5: There is a significant relationship between social influence and the adoption of QR mobile payment among Malaysian consumers.

FIGURE I: PROPOSED CONCEPTUAL FRAMEWORK



METHODS

This study will collect data using questionnaires distributed online to age groups between 18 and 65 years of age and target respondents residing in 13 states in Malaysia. The target population of this age group is chosen because they have high purchasing power, and when the target respondents have different age groups, their views on things will be different (Ibrahim, 2019). As the purpose of this study is to study the factors influencing the adoption of QR mobile payment among Malaysian consumers, 13 states in Malaysia will be selected as sampling locations. In addition, purposive sampling in non-probability sampling will be adopted in this study, which not only saves cost and time, but also is relatively convenient to implement. According to Memon et al. (2020), 15:1 or 20:1 is the most appropriate ratio of sample size. This means that a minimum sample size of 75 to 100 is required for this study, as there are 5 independent variables in this study. This study successfully collected 168 scores in order to provide accurate and reliable data for the survey results.

The online survey of this study is to put the question that the target respondents need to answer and the options for that question in Google Forms, so that the researchers can share the link to WhatsApp, Gmail, Facebook, Instagram and other social media platforms for the respondents to answer. Google Forms consists of three sections. Section A inquired four questions about the participants' demographic profile. Section B and Section C are about dependent and independent variables respectively. Both of the sections ask respondents to indicate how strongly they agree with each series statement or question on a 5-point Likert scale, where 1= strongly disagree and 5= strongly agree.

FINDINGS

Demographic profile

According to table I, a total of 163 respondents were collected in this study, including 107 women (65.6%) and 56 men (34.4%). In this study, respondents aged 18-25 years accounted for 50.9% of the total sample, 26-35 years old accounted for 20.9%, 36-45 years old accounted for 11.7%, 46-55 years old accounted for 10.4% and 56-55 years old accounted for 6.1%. In addition, most of the respondents in the research survey were Chinese, with 142 participants (87.1%). Indian, Malay and other ethnic groups had 11 participants (6.7%), 6 participants (3.7%) and 4 participants (2.5%), respectively. In terms of education level, 44.8% of participants had a Bachelor's Degree, followed by SPM, other and pre-university at 29.4%, 12.9% and 11.7%, respectively. Finally, participants with a Master's Degree and PhD were the lowest at 0.6%.

TABLE I: DEMOGRAPHIC PROFILE OF RESPONDENTS

Demographic Profile	Category	Frequency	Percentage (%)
Gender	Female	107	65.6
	Male	56	34.4
Age Group	18 - 25 years old	83	50.9
	26 - 35 years old	34	20.9
	36 - 45 years old	19	11.7
	46 - 55 years old	17	10.4
	56 - 65 years old	10	6.1
Ethnicity	Chinese	142	87.1
	Indian	11	6.7
	Malay	6	3.7
	Other	4	2.5
Education	Bachelor's Degree	73	44.8
	SPM	48	29.4
	Other	21	12.9
	Pre-University	19	11.7
	Master's Degree	1	0.6
	PhD	1	0.6

Reliability Analysis

TABLE II: COEFFICIENT OF CRONBACH'S ALPHA

Variables	Coefficient of Cronbach Alpha	Reliability Level
Perceived Ease of Use	0.962	Excellent
Promotional Benefits	0.961	Excellent
Privacy and Security	0.955	Excellent
Social Influence	0.929	Excellent
Perceived Usefulness	0.912	Excellent
Adoption Of QR Mobile Payment	0.964	Excellent

Reliability analysis is to check the accuracy and precision of all variables in this study. As shown in table II, the coefficient of Cronbach's Alpha of all variables ranged from 0.912 to 0.962. The results showed that all variables reached an "Excellent" reliability level, as the coefficient was greater than 0.9 (Statistics How To, n.d.). Meanwhile, the coefficient of Cronbach's Alpha proves that all variables in this study had strong internal consistency and reliability.

Multiple Regression Analysis

TABLE III: MODEL SUMMARY

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.860[a]	.740	.731	.49922
a. Predictors: (Constant), Perceived Usefulness, Perceived Ease of Use, Promotional Benefits, Privacy & Security, and Social Influence.				

TABLE IV: ANOVA TABLE

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	111.155	5	22.231	89.202	<.001
	Residual	39.128	157	.249		
	Total	150.283	162			
a. Dependent Variable: Adoption of QR mobile payment b. Predictors: (constant), Perceived Usefulness, Perceived Ease of Use, Promotional Benefits, Privacy & Security, Social Influence						

TABLE V: COEFFICIENTS

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.080	.190		.421	.674
	PU	.494	.095	.459	5.199	<.001
	PEOU	.325	.086	.301	3.769	<.001
	PB	.202	.064	.212	3.128	.002
	PS	-.028	.065	-.028	-.431	.667
	SI	-.021	.070	-.021	-.298	.766
a. Dependent Variable: Adoption of QR mobile payment						

In Table III, an R-value of 0.860 means that there is a strong positive correlation between independent variables and the adoption of QR mobile payment among Malaysian consumers. On the other hand, the R square is 0.740 which represents 74% of the variability of the dependent variable (AQMP) can be explained by the independent variables (PU, PEOU, PB, PS, SI). Meanwhile, the remaining 26% of the variability cannot be explained by these 5 independent variables studies due to error or other variables that have not been investigated. Apart from that, in Table IV, the significant level is lower than 0.001, representing the model's predictors (PU, PEOU, PB, PS, and SI) are collectively significant since it is less than 0.005. This indicates that independent variables have a significant overall impact on the adoption of QR mobile payment among Malaysian consumers.

The multiple regression analysis is designed to predict the Malaysian consumers to adopt QR mobile payment based on all independent variables. According to the results, perceived ease of use, perceived usefulness and promotional

benefit are significantly related to the adoption of QR mobile payment among Malaysian consumers as the significance levels are <0.001, <0.001, and 0.002, respectively. It provides strong evidence to accept the hypotheses in this study (H1, H2, and H3) since p-value is less than the α. Secondly, privacy & security and social influence are not significantly related to the adoption of QR mobile payment among Malaysian consumers as the significance levels are 0.667 and 0.766 respectively. The relevant hypothesis (H4 and H5) will be rejected in this study since p-value is greater than the α.

According to the results of multiple regression analysis, perceived ease of use is significantly related to the adoption of QR mobile payment by Malaysian consumers. This is consistent with the results obtained by Kongarchapatara & Rodjanatara (2018) and Putri et al. (2020). When consumers adopt QR mobile payment and find that the features of the system are not difficult to understand and learn, their usage will be greatly increased. Software developers must build or develop the technology with ease of use in mind, such as simplifying registration and verification processes, and continuously optimize and upgrade it to improve the consumer experience and pleasure, so as to ensure that its usage is not affected.

The perceived usefulness of this study is also consistent with the results obtained by Chang et al. (2021) and Sariyon et al. (2020). Both perceived usefulness and strong positive correlation with the adoption of QR mobile payment by Malaysian consumers. QR mobile payment allows consumers to make cashless payments, which is perfect for most people today, as everyone has a smartphone and carries it around with them. Consumers can pay offline or online sellers, which undoubtedly provides convenience for consumers. In addition, QR mobile payment can alleviate the situation that consumers do not carry enough cash, since QR mobile payment can recharge, pay and deposit money at any time. QR mobile payment can also ensure that consumers do not need to carry large amounts of cash when they go out to buy or eat in order to avoid loss or theft.

Another factor that showed a strong positive correlation with the adoption of QR mobile payment by Malaysian consumers was the promotional benefit. Similarly, Raimee et al. (2021) and Hajazi et al. (2021) also have consistent research results on this factor. When consumers adopt QR mobile payment, they receive offers and incentives from merchants or governments, which will increase their usage. For example, the government will encourage merchants to offer discounts, freemium services and Internet access to consumers who adopt QR mobile payment, thereby incentivizing the adoption of the system by consumers.

The results show that there is an insignificant relationship between privacy and security and the behavioral intention of Malaysian consumers to adopt QR mobile payment. The results obtained in this study are supported by relevant studies including Suebtimrat & Vonguai (2021), Chakraborty & Mitra (2018) and Munoz-Leiva et al. (2017). Consumers believe that QR mobile payment has a low-risk problem for small, regular transactions. Due to the small amount of the transaction, the privacy and security concerns of QR mobile payment will not be linked to other financial technologies (online banking or cryptocurrencies). As a result, consumers are concerned about the security risks of QR mobile payment such as fraud, information loss, and data breaches.

Last but not least, there is negative significant relationship between social influence and Malaysian consumers' behavioral intention of adopting QR mobile payment in this study, which is supported by relevant studies such as Theodora et al. (2019), Rafferty & Fajar (2022) and Hajazi et al. (2021). Social influence has a minor impact on QR mobile payment because the system can be viewed as a personalization tool. Consumers are more likely to consider whether to use QR mobile payment based on their own needs and experience, so the influence of family members, relatives or friends is less important to the individual.

CONCLUSION

Implications of the study

First of all, by offering the most recent information on QR payments, the study greatly benefits consumers. They can learn more about the factors influencing Malaysian consumers' adoption of QR payments from this study. It highlights the advantages of an e-wallet and helps persuade them to adopt QR payments in everyday purchases. They can save time by completing transactions more quickly. Additionally, the QR payment improves the security of handling their tangible goods and lessens dependency on them.

Additionally, the research study's information can be used by the corporate organizations to develop or modify their operational strategy. It is advised that organisations with a large daily transaction volume employ QR mobile payments since they can improve operational efficiency by streamlining the transaction process, particularly for small and medium-sized businesses (SMEs).

Furthermore, the study benefits the banking sector, particularly financial organizations. The banking institution learns more about how consumers perceive QR mobile payments. By learning about the preferences and obstacles of their

clients, they may create a creative payment solution and set themselves apart from the competition. The possible hazards associated with QR mobile payments have been highlighted by the study. To safeguard the interests of their clients, financial institutions should assess the risk and create standard operating procedures or standards to handle possible risks like fraud and cybercrime.

Lastly, the study is important to the government since it offers a thorough understanding of QR mobile payments from a variety of angles. Through the creation of sensible laws and policies, the government can contribute to the nation's economic expansion. To become a developed nation, the nation must implement e-wallets in order to speed or accomplish globalization. Therefore, in order to give e-wallet users a secure, reliable, and practical environment, the government should create or amend the policies and regulations.

Limitations of the study

One of the study's limitations was time constraints, which shortened the research period to 14 weeks and might have affected how thoroughly the study was conducted. With only 163 responders, the sample size could not be representative of Malaysia's 34.1 million people. The low response rate from targeted respondents and the inexperience of the researchers made it difficult to collect and analyze primary data. Potential bias was introduced by the purposive sampling strategy since participants were subjectively chosen by the researchers. Furthermore, the results was limited by the skewed demographic profile, which included 87.1% Chinese respondents and 50.9% of respondents between the ages of 18 and 25.

Recommendations of the study

Since there are numerous steps involved, including evaluating literature, distributing surveys, and processing data, especially within a 14-week timeframe, effective time management is essential to improve future research. Instead of depending exclusively on virtual approaches to address the sample size issue, more respondents may be obtained through physical contacts or wider communication channels. Furthermore, providing surveys in other languages, such as Tamil and Chinese, would guarantee greater participation in Malaysia's multiracial setting. Finally, employing other data collection techniques, including interviews, may yield more accurate and varied insights into the variables affecting the uptake of QR payments. Furthermore, the sample size of this study is relatively small, consisting of only 163 respondents. To improve the accuracy and generalizability of findings, future researchers should consider increasing the sample size. A larger sample would better represent the population and reduce potential biases in the results. Additionally, employing diverse sampling methods and reaching out to various demographics can help capture a broader range of perspectives, further enhancing the study's reliability and validity.

ACKNOWLEDGEMENTS

Many people's advice and help were crucial to the project's success and ultimate result, and we are very grateful to have had this support during the entire process. Everything I have done is solely because of their advice and help, and we will always be grateful for that.

Besides that, we would like to thank Miss Norlela Awang Cha, for giving us an opportunity to do the project work her and providing us all support and guidance which made us complete the project on time. We are extremely grateful to her for providing such nice support and guidance though she had a busy schedule. Her contributions to our research were significant because of her incredible insight and advice. Nonetheless, we would like to take this opportunity to assert our appreciation for her willingness to devote effort, time and energy to this project.

Last but not least, we would like to sincerely thank Quest International University, our university, for giving us the necessary infrastructure and a platform to conduct the study. We are also immensely grateful to the institution for giving us the chance to do this research, which has improved our understanding, perspective, and appreciation of the field.

REFERENCES

Abd Malik, A. N., Annuar, S. N. S., Yacob, Y., Pakasa, U. I., Ali, J. K., Gregory, M., ... & Nyandang, J. (2020). The Effect of Perceived Usefulness, Perceived Ease of Use, Perceived Risk and Reward Towards E-wallet Usage Intention: A Moderating Role of Trust. *Journal of Academic Research in Business and Social Sciences, 13*(9), 1699-1714.

Agrawal, S. (2021). Integrating Digital Wallets: Advancements in Contactless Payment Technologies. *International Journal of Intelligent Automation and Computing, 4(*8), 1-14.

Ayuningtyas, A., Adinugraha, H. H., & Sulthoni, M. (2024). Quick Response Code Indonesian Standard as a Digital Payment Solution to Increase the Turnover and Reduce the Circulation of Counterfeit Money. *Journal of Education and Computer Applications, 1*(1), 25-31.

Barkhordari, M., Nourollah, Z., Mashayekhi, H., Mashayekhi, Y., & Ahangar, M. S. (2017). Factors influencing adoption of e-payment systems: an empirical study on Iranian customers. *Information systems and e-business management, 15*, 89-116.

Barry, M., & Jan, M. T. (2018). Factors Influencing the Use of MCommerce: An Extended Technology Acceptance Model Perspective. *International Journal of Economics, Management and Accounting, 26*(1), 157-183.

Barry, Y. W., & Kim, D. J. (2018). Assessing the effects of consumers' product evaluations and trust on repurchase intention in e-commerce environments. *International Journal of Information Management, 39*, 199-219.

Cao, T. K., Dang, P. L., & Nguyen, H. A. (2016). Predicting consumer intention to use mobile payment services: Empirical evidence from Vietnam. *International Journal of Marketing Studies, 8*(1), 117-124.

Chakraborty, S., & Mitra, D. (2018). A study on consumers adoption intention for digital wallets in India. *International Journal on Customer Relations, 6*(1), 38-57.

Cham, T. H., Low, S. C., Lim, C. S., Aye, A. K., & Ling, R. L. B. (2018). Preliminary study on consumer attitude towards fintech products and services in Malaysia. *International Journal of Engineering & Technology, 7*(2.29), 166-169. http://doi.org/10.14419/ijet.v7i2.29.13310

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.

Chung, W., & Paynter, J. (2002). Privacy issues on the Internet. In Proceedings of the 35th Annual Hawaii International Conference on System Sciences (pp. 9-pp). IEEE.

De Leon, M. V. (2019). Factors influencing behavioural intention to use mobile banking among retail banking clients. Jurnal Studi Komunikasi, 3(2), 118-137. https://doi.org/10.25139/jsk.v3i2.1469

Djaniar, U., Munizu, M., Tomadehe, S., & Bakri, A. A. (2024). Analysis of The Influence of Perceived Usefulness Factors and Subjective Norm on Intention to Use QR Code of Digital Wallet Users. *Jurnal Informasi dan Teknologi*, 240-244.

Ebubedike, A. H., Mohammed, T. A., Nellikunnel, S., & Teck, T. S. (2022). Factors Influencing Consumer's Behavioural Intention towards the Adoption of Mobile Payment in Kuala Lumpur. *International Journal of Professional Business Review 7*(6), 24.

Effendy, F., Hurriyati, R., & Hendrayati, H. (2021). Perceived usefulness, perceived ease of use, and social influence: intention to use e-wallet. In 5th Global Conference on Business, Management and Entrepreneurship (GCBME 2020) (pp. 311-315). Atlantis Press.

Gitau, L., & Nzuki, D. (2014). Analysis of determinants of m-commerce adoption by online consumers. *International Journal of Business, Humanities and Technology, 4*(3), 88-94.

Hajazi, M. A., Chan, S. S., Ya'kob, S. A., Siali, F., & Latip, H. A. (2021). Usage intention of QR mobile payment system among millennials in Malaysia. *International Journal of Academic Research in Business and Social Sciences, 11*(1), 645-661.

Hermawan, I., & Aruan, D. T. H. (2023). Technology of Acceptance Systems of Toll Roads Payment: Comparison of E-Toll Payment System and MLFF Technology of Trans Sumatera Toll Road. *International Journal of Engineering Business and Social Science, 1*(05), 439-466.

Ho, J. C., Wu, C. G., Lee, C. S., & Pham, T. T. T. (2020). Factors affecting the behavioral intention to adopt mobile banking: An international comparison. *Technology in Society, 63*, 101360. http://doi.org/10.1016/j.techsoc.2020.101360

HSBC Business Go. (n.d.). https://www.businessgo.hsbc.com/en/article/malaysia-budget-2023-summary-sme-digitalisation-grant-and-other-subsidies

Ibrahim, M. H., Hussin, S. R., & Hussin, S. H. (2019). Factors influencing Malaysian consumers' intention to use Quick Response (QR) mobile payment. *Jurnal Pengurusan, 57*, 22-37.

Inman, J. J., & Nikolova, H. (2017). Shopper-facing retail technology: A retailer adoption decision framework incorporating shopper attitudes and privacy concerns. *Journal of retailing, 93*(1), 7-28.

Karim, M. W., Haque, A., Ulfy, M. A., Hossain, M. A., & Anis, M. Z. (2020). Factors influencing the use of E-wallet as a payment method among Malaysian young adults. *Journal of International Business and Management, 3*(2), 1-12.

Kongarchapatara, B., & Rodjanatara, C. (2018). Factors affecting adoption versus behavioral intention to use QR code payment application. In 2018 International Conference on E Commerce, e-Administration, e-Society, e-Education, and e-Technology, Osaka, Japan. https://www. cm. mahidol. ac. th/research/index. php/publications.

Kosim, K. P., & Legowo, N. (2021). Factors affecting consumer intention on QR payment of mobile banking: A case study in Indonesia. *The Journal of Asian Finance, Economics and Business, 8*(5), 391-401.

Lim, Z. L. (2023). Adoption Of RFID Toll Payment Among Consumers On Highways In Penang Malaysia. *Research in Management of Technology and Business, 4*(2), 012-022.

Lou, L., Tian, Z., & Koh, J. (2017). Tourist satisfaction enhancement using mobile QR code payment: An empirical investigation. *Sustainability, 9*(7), 1186.

Lu, J. (2014). Are personal innovativeness and social influence critical to continue with mobile commerce? *Internet Research, 24*(2), 134–159. doi:10.1108/IntR-05-2012-0100

Mahmood, A. F., Liang, C. J., Ishak, A. S., Abdullah, S., Aziz, M. K. N. A., & Ramli, A. J. (2023). The Effect of e-Wallet Among Youth in Penang. *International Journal of Business and Technology Management, 5*(S5), 286-293.

Md Wasiul Karim., Ahasanul Haque., Mohammad Arije Ulfy., Md Alamgir Hossain., & Md Zohurul Anis. (2020). Factors influencing the use of Ewallet as a payment method among Malaysian young adults. *Journal of International Business and Management, 3*(2), 1-12. https://rpajournals.com/wp-content/uploads/2020/03/JIBM-2020-2-21.pdf

Memon, M. A., Ting, H., Cheah, J. H., Thurasamy, R., Chuah, F., & Cham, T. H. (2020). Sample size for survey research: Review and recommendations. *Journal of Applied Structural Equation Modeling, 4*(2), 1-20.

Ming, K. L. Y., Jais, M., Wen, C. C., & Zaidi, N. S. (2020). Factor affecting adoption of E-wallet in Sarawak. *International Journal of Academic Research in Accounting, Finance and Management Sciences, 10*(2), 244-256.

Mou, J., Cohen, J., Dou, Y., & Zhang, B. (2020). International buyers' repurchase intentions in a Chinese cross-border e-commerce platform: A valence framework perspective. *Internet Research, 30*(2), 403-437.

Muhammad Alshurideh., Salloum, S. A., Kurdi, B. A., & Al-Emran, M. (2019). Factors affecting the social networks acceptance: an empirical study using PLS-SEM approach. In Proceedings of the 2019 8th international conference on software and computer applications, 414-418. https://doi.org/10.1145/3316615.3316720

Munoz-Leiva, F., Climent-Climent, S., & Liébana-Cabanillas, F. (2017). Determinants of intention to use the mobile banking apps: An extension of the classic TAM model. *Spanish journal of marketing-ESIC*, *21*(1), 25-38.

Nguyen, T. C. H. (2017). The Role of Perceived Risk on Intention to Use Online Banking in Vietnam. https://www.researchgate.net/publication/320979986_The_Role_of_Perceived_Risk_on_Intention_to_Use_Online_Banking_in_Vietnam

Nseir, S., Hirzallah, N., & Aqel, M. (2013). A secure mobile payment system using QR code. In 2013 5th International Conference on Computer Science and Information Technology (pp. 111-114). IEEE.

Nur Fathin, A. R., Roslina, I., Yazriwati, Y., Norziha M, M. Z., Suraya, Y., & Rasimah, C. M. (2020). Consumers' intention to use mobile payment: a case of quick response (QR) code applications/Nur Fathin A. Rosli...[et al.]. *Mathematical Sciences and Informatics Journal (MIJ)*, *1*(1), 20-34.

Ozturk, A. B. (2016). Customer acceptance of cashless payment systems in the hospitality industry. *International Journal of Contemporary Hospitality Management*, *28*(4), 801-817.

Phurkwattanakul, N., & Methavasaraphak, P. (2021). Factors affecting the e-payment adoption on e-commerce platform system in Thailand. APHEIT *International Journal*, *10*(2), 22-34. https://so04.tci-thaijo.org/index.php/ATI/article/view/254195

Putri, D. E., Sinaga, O. S., Sudirman, A., Augustinah, F., & Dharma, E. (2022). Analysis of the effect of perceived ease of use, perceived usefulness, trust, and cashback promotion on intention to use E-wallet. *International Journal of Economics, Business and Management Research*, 6(11), 63-75.

Rafferty, N. E., & Fajar, A. N. (2022). Integrated QR payment system (QRIS): cashless payment solution in developing country from merchant perspective. *Asia Pacific Journal of Information Systems*, 32(3), 630-655.

Rahman, M., Ismail, I., & Bahri, S. (2020). Analysing consumer adoption of cashless payment in Malaysia. *Digital Business*, 1(1), 100004.

Raimee, N., Maheswaran, L., Appannan, J. S., & Radzi, N. M. (2021). Adoption of digital wallet: influencing factors among undergraduates in Malaysia. *International Journal of Business and Technology Management*, 3(2), 34-43.

Salloum, S. A., Mhamdi, C., Kurdi, B. A., & Shaalan, K. (2018). Factors affecting the adoption and meaningful use of social media: a structural equation modeling approach. *Int. J. Inf. Technol. Lang. Stud*, 2(3), 96-109. https://journals.sfu.ca/ijitls/index.php/ijitls/article/view/49

Sariyon, N., Harun, A., & Seman, N. A. A. (2020). Factors Influencing Intention to Use Mobile Payment QR Code Among Teachers in Batu Pahat. *Research in Management of Technology and Business*, 1(1), 908-917.

Schroeder, T., Dodds, L., Georgiou, A., Gewald, H., & Siette, J. (2023). Older adults and new technology: mapping review of the factors associated with older adults' intention to adopt digital technologies. *JMIR aging*, 6(1), e44564.

Statistics How To. (n.d.). Cronbach's Alpha: Definition, Interpretation, SPSS. Retrieved from https://www.statisticshowto.com/probability-and-statistics/statistics definitions/cronbachs-alpha-spss/

Suebtimrat, P., & Vonguai, R. (2021). An investigation of behavioral intention towards QR code payment in Bangkok, Thailand. The *Journal of Asian Finance, Economics and Business*, 8(1), 939-950.

Suo, W. J., Goi, C. L., Goi, M. T., & Sim, A. K. (2022). Factors influencing behavioural intention to adopt the QR-code payment: Extending UTAUT2 model. *International Journal of Asian Business and Information Management*, 13(2), 1-22.

Teoh Teng Tenk, M., Yew, H. C., & Heang, L. T. (2020). E-wallet Adoption: A case in Malaysia. *International Journal of Research In Commerce and Management Studies*, 2(2), 216-233.

Theodora, A. R., Syamsul, K. D., Kom, S., and Pd, N. E. S. (2019). Factors of merchant adoption QR code-based payment systems: An empirical study of small and micro merchant in Jakarta. *International Journal of Social Relevance & Concern*, 7(4), 1-7.

Türker, C., Altay, B. C., & Okumuş, A. (2022). Understanding user acceptance of QR code mobile payment systems in Turkey: An extended TAM. *Technological Forecasting and Social Change*, 184, 121968.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186-204.

Yusuf, M., Rahmiati, R., & Thamrin, T. (2024). The influence of perceived usefulness, perceived ease of use, perceived risk on behavioral intention for QRIS user. *Marketing Management Studies*, 4(2), 100-118.

Zhong, Y., & Moon, H. C. (2022). Investigating customer behavior of using contactless payment in China: A comparative study of facial recognition payment and mobile QR-code payment. *Sustainability*, 14(12), 7150.