Acceptance of Quick Response Indonesian Standard Code Payment from the User Point of View

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Abstract. Digital payment systems continue to spread in society. The most common and widely used digital payment system is using Quick Response (QR). To prevent crime, sovereignty, and secure digital QR payments, the Indonesian government through Bank Indonesia and the Indonesian Payment System Association (ASPI) issued the Quick Response Indonesian Standard (QRIS). This study aims to see whether QRIS has met user satisfaction using the Unified Theory of Acceptance and Use of Technology (UTAUT) Model approach. This research is a descriptive quantitative study using primary data collected through digital questionnaires. Data collection techniques using convenience and snowball sampling methods in September 2024. The study used multiple regression analysis. The results of this study indicate that Performance Expectancy, Effort Expectancy, and Social Influence QRIS Use Behaviour (UB) mediated by Intention to Use (BI). Meanwhile, Facility Conditions show no effect on QRIS Use Behaviour (UB). In conclusion, the good and bad performance and ease of QRIS, as well as the environment play a role in someone using QRIS, while good facility conditions do not affect QRIS use. The contribution of this study is to provide input for the development of Bank Indonesia and ASPI regarding QRIS for the expansion of features that are increasingly easy, fast and efficient in their use and provide performance that meets or exceeds user expectations.

Keywords: Quick Response, UTAUT, Digital Payment.

1 Introduction

Transactions are activities arising from sales, purchases, and others influenced by money. Currently, transactions involve two types of payment methods: cash and non-cash. In this advanced era, there is undoubtedly a need for a payment system that is easy, fast, and secure to use [1].

Information Technology is developing daily and has become essential to our lives. The global economic sector is affected, from small to large, due to the expansion of technology. Digitalization has massively changed the payment transaction system, making people move faster toward non-cash transactions, one way is by using the Quick Response Code (QR). In Indonesia, payment system transactions have been facilitated

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by the Quick Response Indonesian Standard (QRIS) initiated by Bank Indonesia in collaboration with the Indonesian Payment System Association (ASPI). QRIS will be a system that facilitates faster and easier transactions using QR codes. The purpose of QRIS is for users to make payments with one QR code using various other digital payment applications.

Indonesia, as a developing country, makes Bank Indonesia a national bank that must play its role in issuing the latest technology from the financial system to accelerate the development of financial inclusion. The launch of QRIS is also a form of implementation of the National Non-Cash Movement (GNNT), launched in 2014. Based on data from Bank Indonesia, in the second quarter of 2024, the use of QRIS has reached more than 50 million, with more than 32 million merchants, of which 30.2 million are from the MSME sector throughout Indonesia [2]. The spread of the number of merchants that provide QRIS as a payment option will make it easier for every user to make payments with QRIS digital transactions.

The achievement of the number of users of payment services via QR codes is indeed fantastic. However, of course, the challenge of accepting QRIS payment technology has also developed into an issue that requires further understanding because this payment system is still relatively new in society. Supporting factors influence user perceptions regarding acceptance of the QRIS payment system. User perceptions regarding adopting the latest technology, such as QRIS, can be analyzed using the Unified Technology of Acceptance and Use of Technology (UTAUT) model. The UTAUT model is still considered the most adequate to date because is a development of several previous theories. All these theories were combined and analyzed further to create a new model, namely the Unified Theory of Acceptance and Use of Technology. This UTAUT will later help us understand why technology is adopted by its users and even succeeds in becoming an ingrained habit when making payments.

1.1 Literature Review

Based on the model namely UTAUT itself, there are four factors related to technology adoption [3]. The four variables are performance expectancy, effort expectancy, social influence, and facilitating conditions. Furthermore, behavioural intentions are added to emphasize the four previous variables in the UTAUT model, which, in time, the intentions will change into use behaviour. Several previous studies have been conducted for these UTAUT variables with the results that performance expectations affect usage behaviour if mediated by behavioural intentions [4-6] with research that contradicts this being conveyed by [7]. Regarding research related to effort expectations affecting usage behaviour, if mediated by behavioural intentions, this is supported by research by [5], but these results are not in line with research by [4, 6, 7]. Furthermore, previous studies that found that social influence affects usage behaviour mediated by behavioural intentions have also been conducted [5, 6], but the existence of this study is inversely proportional to the results of the survey by [4, 7] regarding this matter. Finally, research related to conditions that support the influence on usage behaviour itself is supported by the opinions of [5, 8, 9] with the counter theory put forward by [4, 6] in their research.

This study uses the user perspective to adopt the QR method payment system in the future using the UTAUT model, especially the Quick Response Indonesian Standard (QRIS). The analysis identifies the causes/factors influencing someone to accept

the change from a cash payment system to a non-cash one. The perceptions raised by users are crucial to explaining the sustainability of the current digital payment system. Based on this, this study aims to see whether QRIS has met users' desires and expectations. Meanwhile, the implications of this study are as input for Bank Indonesia, together with the Indonesian Payment System Association (ASPI) as the organizer of QR code payments, to continue to develop QRIS so that more people can accept this payment system because it is by their expectations and easy to use.

The Unified Theory of Acceptance and Use of Technology (UTAUT) model is the most adequate and relevant model for studying a person's acceptance and use of technology, such as payments. The UTAUT model is the most complete compared to the others. The UTAUT model by Venkatesh et al., 2003 classifies four primary constructs that directly influence users' behavioural intention and use of technology. The direct influences are performance expectancy, which is the performance of the system that can not only affect a person's intention to use mobile payments but can also increase the level of use of mobile payments [10], effort expectancy regarding the ease or difficulty of a technology to use [11], social influence which assumes that people around such as family or closest relatives have a vital role in increasing a person's willingness to adopt a technology [12], and facilitating conditions because when using a technology a person will think about the conditions of the facilities of the technology that will be used. These UTAUT variables are still relevant to research on banking, education, health, and even payment technology acceptance.

1.2 Hypothesis

The performance expectancy construct is the level at which a person feels confident that the performance system provided by the information technology used will help him complete his work more efficiently [3]. Meanwhile, use behaviour shows how much users use information technology daily [13]. Performance expectancy encourages someone to intend to use the technology again in the future. The better the system performance produced by QRIS, the more it will influence a person's behavioural intention to use technology, where this intention will later turn into a use behaviour. Thus, the hypothesis built in this study is

H1: Performance Expectations have a positive effect on usage behaviour mediated by behavioural intentions using QRIS.

The effort expectancy construct is the ease a user feels regarding the technology used and its application that helps reduce the effort and energy required [3]. The more a user feels that using technology is easy to do and reduces the effort they must spend, the higher their intention to adopt technology. The higher the level of ease felt by an individual, the more it will affect their behavioural intention in using technology, and the effect can have an impact on whether or not a technology is accepted [11]. Thus, the hypothesis built in this study is

H2: Effort Expectancy has a positive influence on usage behaviour mediated by behavioural intentions using QRIS.

Social influence is support from external parties in using technology; environmental influence can come from family, friends, relatives, and people around them [3]. When someone feels that the surrounding environment has begun to adapt to the new payment system, they will have a behavioural intention to try and use the technology and would become use behaviour someday. Thus, the hypothesis built in this study is

H3: Social Influence has a positive influence on usage behaviour mediated by behavioural intentions using QRIS.

The facilitating conditions construct is a condition from another party that facilitates a user's use of technology to support their ease and comfort [3]. The condition of technological facilities will encourage the latest information technology. Facilitating conditions are one of the considerations when someone uses technology, so the existence of technology will affect whether someone will use the technology or not [11]. Thus, the hypothesis built in this study is

H4: Facility conditions have a positive influence on usage behaviour using QRIS.

2 Methods

2.1 Samples

This research uses descriptive quantitative research methods using primary data. The subjects of this research were all people who had used QRIS as their payment method from 10 to more than 50 years old. The collection method for this research was carried out through a questionnaire distributed via the Google Form platform from September 2024. All data from this research was collected using the convenience sampling method and followed by the snowball sampling method. Then, this research was analysed further using Smart-PLS 4 software.

2.2 Measurement

This questionnaire uses a Likert scale ranging from 1 to 5 to measure users' perceptions of using QRIS. The following are research indicators based on variables, namely performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) as independent variables, Behavioural Intention (BI) as the mediating variable, and Use Behaviour as the dependent variable. Table 1 below displays the reliability and validity tests, showing that all the data obtained is valid.

Table 1. Indicators, Outer Loadings, Reliability and Validity – Test Results

Indicators*		Outer Loadings	Cronbach's Alpha's	AVE
Performance Expectancy (PE)			0.934	0.656
PE 1.	QRIS speeds up my payment methods[a]	0.820		
PE 2.	QRIS improves my payment performance[a]	0.795		
PE 3.	QRIS improves my transaction productivity[a]	0.751		
PE 4.	I feel QRIS is an adequate payment tool to use[a]	0.782		
PE 5.	Using QRIS makes things easier for me[a]	0.869		
PE 6.	I feel QRIS is helpful for payments[a]	0.865		

PE 7.	Using QRIS saves the time needed for transactions[a]	0.789		
PE 8.	Using QRIS speeds up my overall transaction completion[a]	0.827		
PE 9.	QRIS improves the productivity of financial transactions[a]	0.785		
Effort Expectancy (EE)			0.916	0.599
EE 1.	Learning to use QRIS operations is easy for me[a]	0.719		
EE 2.	I feel that QRIS creates a system that is capable of doing what I need[a]	0.814		
EE 3.	QRIS system is prominent for me[a]	0.795		
EE 4.	QRIS system is easy to understand[a]	0.810		
EE 5.	I feel advanced in how to use QRIS[a]	0.751		
EE 6.	Overall, I believe QRIS is easy to operate[a]	0.798		
EE 7.	QRIS makes it easier for me to make payments[a]	0.782		
EE 8.	Many mechanical operations speed up payment transaction times[a]	0.752		
EE 9.	Using QRIS is more practical[a]	0.734		
Social Influence (SI)			0.805	0.620
SI 1.	My colleagues actively participate in teaching me how to use the QRIS feature[a]	0.718		
SI 2.	My colleagues suggest that I use to be use QRIS[a]	0.728		
SI 3.	I feel that people in my environment are among those who can adapt to technology[a]	0.851		
SI 4.	QRIS is an application that is considered valuable in my environment[a]	0.842		
Facilitating Conditions (FC)			0.784	0.699
FC 1.	I feel that my knowledge of QRIS is sufficient[c]	0.870		
FC 2.	I have a device that supports me to use QRIS payment[a]	0.802		
FC 3.	Overall, I feel comfortable with the existing facilities[a]	0.835		
Behavioural Intention (BI)			0.909	0.612
BI 1.	I will use QRIS in the next few months[c]	0.818		

BI 2.	I expect to use QRIS for the next few months[c]	0.821		
BI 3.	I expect to use QRIS for the next few months[c]	0.803		
BI 4.	If there is a supportive signal, I will have the intention to use QRIS[a]	0.800		
BI 5.	If there is a supportive signal, I will use QRIS[a]	0.801		
BI 6.	When there is a choice of digital payments compared to cash payments, I will adopt this QRIS digital payment[a]	0.744		
BI 7.	I will recommend the use of QRIS to everyone[d]	0.760		
BI 8.	People are satisfied using this QRIS application [b]	0.707		
Use Behaviour (UB)			0.915	0.663
UB 1.	I use QRIS on online shopping platforms, transportation, and restaurants[a]	0.765		
UB 2.	In one day, I used QRIS for several transactions [e]	0.803		
UB 3.	I feel like I will use QRIS in the long term[a]	0.816		
UB 4.	I often pay my bills and make purchases with QRIS[a]	0.790		
UB 5.	I use QRIS with quite a high frequency [b]	0.833		
UB 6.	I often use QRIS for my daily transactions. [a]	0.889		
UB 7.	I have used QRIS in the past week [b]	0.796		

*Legend: [a]Venkatesh et al., 2003;[b] Zhou et al. (2010); [c]Andrianto, A. (2020); [d]Widianti et al. (2021); [e] Arianisari, S. (2024)

2.3 Data collection and analysis

The number of samples in the research was 251 respondents to this questionnaire. Based on the data obtained, the majority of respondents in this study were women aged 20-30 years; there are also other age groups, namely 30-40 years, 40-50 years and even over 50 years. The dominant respondents in this research use> 30 transactions using QRIS every month from different payment institutions. The model's suitability for this study can be measured through the goodness-of-fit test in the R-square section [14, p.38]. The results of the R-Square Adjusted of this study are 67.5% or 0.675, which indicates that all independent variables from the study can explain the dependent variable, namely use behaviour, at a moderate level [14, p.215].

The test results of this research are further attached in Table 2 below.

Table 2. Path Coefficient Analysis & Hypothesis Testing Results

Variable	Path Coef.	T-stat	P-values	Results	Hypotheses
H1. PE-> BI-> UB	0.210	3.321	0.001	Positive influence	Supported
H2.EE-> BI-> UB	0.241	3.983	0.000	Positive influence	Supported
H3. SI-> BI-> UB	0.302	7.269	0.000	Positive influence	Supported
H4. FC-> UB	0.113	1.713	0.087	Positive not influence	Rejected

3 Results and Discussion

This research applies a significance level of 95%, and the relationship between one variable and another can be declared positive if the path coefficient value is positive or vice versa. A significant value between variable relationships is obtained if the t-statistic value is >1.96 and the p-value is less than 0.05 [15]. This research found that hypotheses 1, 2 and 3 produced significant and positive results, while hypothesis 4 was non-significant and positive.

The first hypothesis tests and are indicated to be significant and positive in influencing behavioural intentions, which will then change into user behaviour. This study shows that user perceptions of how much QRIS performance can increase the efficiency of their transactions because they play an essential role in influencing behavioural intentions and usage behaviour in using technology. This means that the higher the QRIS performance, the greater the person's behavioural intention in adopting QRIS as a payment system. This result was supported by [4-6]. This result is different from the results of the studied by [7].

The second hypothesis is supported and indicated to be significant and positive in influencing behavioural intention in using QRIS, which intention will later change into use behaviour. This study concludes that the higher the level of convenience felt by QRIS users, the more behavioural intention will increase when someone adopts it, and then someone's intention will change into user behaviour. The perceived convenience dramatically influences a person's decision to adopt the QRIS payment system. This result is supported by [5]. This result is different from the results of the studied by [4, 6, 7].

Then, the third hypothesis is supported and indicated to be significant and positive in influencing behavioural intentions in adopting QRIS as a payment system, which will later change user behaviour. This means that family, friends, relatives, and people around influence someone to intend to use QRIS. The more people in the environment who use QRIS, the higher the level of user behaviour that starts from behavioural intentions. In addition, Bank Indonesia is also obliged to utilize the influence of the social realm through community campaigns such as social media influencers to support the

broader reach of early users to use QRIS. This result supported by [5, 6] This result is different from the results of the studied by [4, 7].

Lastly, the results of hypothesis testing relating to facilitation conditions influencing use behaviour show a non-significant but positive relationship with the use of QRIS. Based on the results of this research, it was found that the hypothesis related to these two things was rejected. This means that whether there is a facility for using QRIS, starting from cell phones, signals, Wi-Fi, etc., does not influence a person's behaviour in using technology. The existence of increasingly advanced technology today is fine with implementing QRIS as a payment medium. This is because user behaviour comes from other indications, such as performance expectations, effort expectations, and social influence, which will be explained next. This result is supported by [4, 6]. This result is different from the results of the studied [5, 8, 9].

There are respondents aged 40 years and over who usually have yet to fully adapt to technology because they live in a technological transition period and feel resistant to the existence of technology. To increase user desire to use QRIS as a payment method, the role of Bank Indonesia and ASPI is needed to provide the best performance of QRIS by presenting new features such as downloading monthly transaction mutations that they publish to increase user trust. Developers of this QR-based payment system can also provide the latest features that make it easier for users, and they can use social roles, such as influencers or promotions of the QRIS payment system so that the reach of this payment system will spread wider to everyone. Of course, these methods will also reduce the sense of resistance in the age group of 40 years and over because it makes it easier and increases their trust in the performance of QRIS.

4 Conclusion

According From the research that has been conducted, a conclusion was drawn that the most influential thing is effort expectancy. When someone feels that using a digital payment is easy, then someone will do it again and this applies as well. One of the impacts of this effort expectancy is felt by the age group of 40 years and over who sometimes still consider adopting this payment system alone or will complete their payments through cash transactions because they are resistant to that. Meanwhile, this study produced facilitating conditions that did not affect use behaviour because the condition of smartphones and networks as supporting facilities for QRIS have been sold at low prices and are easy to use today so that this is no longer an influence, especially for the young age group, namely the age of 20-30 years who are the dominant respondents in this study.

The limitation of this study is that this study was conducted in a relatively short time so that it is not possible to cover all components of the population, the technique of this study was also carried out using snowball sampling, so that it is possible that there are research respondents who do not meet the criteria. In addition, because this study was conducted online with the help of the Google Form platform, researchers have limitations in directly observing the seriousness of respondents in filling in the answers to these questions. In the future, it is hoped that research related to QRIS can be carried out using the latest model developments such as UTAUT 2 which has moderation to see the relationship between each variable.

The advice for Bank Indonesia, which plays a role in issuing QRIS, is to consider every step they take to attract the intention of early users who haven't yet been touched by QRIS to try using this type of payment. The developer of the QR code payment system, namely Bank Indonesia together with ASPI, must create the latest features to improve QRIS performance further, make QRIS more comfortable to use, and increase their trust when using it so that the reach of users is not only from Generation Z but also Generation X who are usually not used to payment methods such as This. They can also utilize the surrounding environment for social campaigns to expand user reach so that the National Cashless Movement (GNNT) is closer to being achieved.

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