

Factors Affecting the use of Quick Response Code Indonesian Standard (QRIS) with the Unified Theory of Acceptance and use of Technology Model

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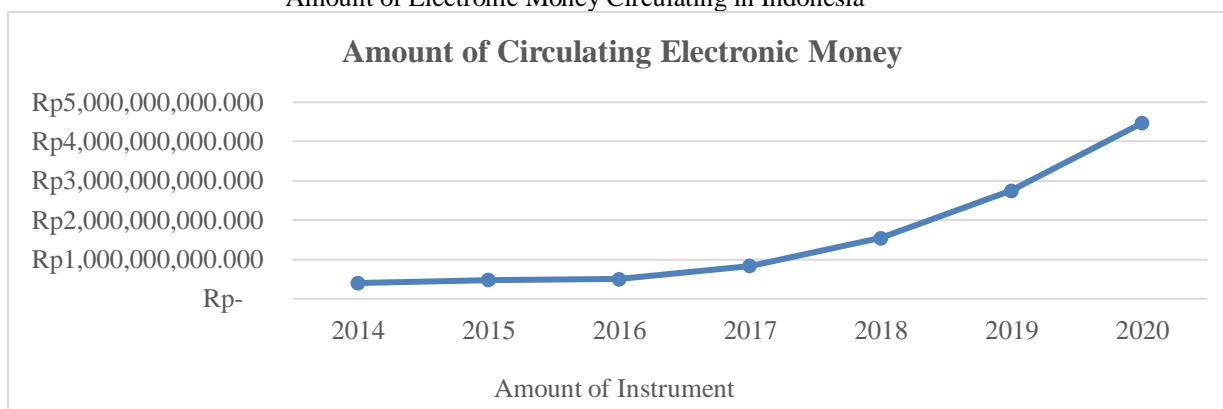
Abstract:- This study aims to analyze the evaluation of the application of technology adoption model behavior in the acceptance of QRIS using the UTAUT model to customers in Bandar Lampung City. This research uses quantitative research. Quantitative data processing method using SEM Partial Least Square (PLS) analysis using the SmartPLS 3.3 statistical tool. This study indicates that Performance Expectancy and facilitating conditions simultaneously significantly influence Behavioral Intention to use QRIS in Bandar Lampung City. Meanwhile EffortExpectancy, Social Influence, and Perceived Risk have no significant effect on Behavioral Intention, and Behavioral Intention has no impact on Use Behavior in the use of QRIS in Bandar Lampung City.

Keywords:- Quick Response Indonesian Standard, Unified Theory of Acceptance and Use Technology.

I. INTRODUCTION

Technological developments have touched most aspects of life. In industrial revolution 4.0, there were more and more new technology-based innovations in the payment sector. The rapid growth of technology has brought people into the era of the industrial revolution 4.0 in the digital era, and technology users are used as a lifestyle among the community. Economic transactions and digital payments are increasing rapidly in line with digital platforms and instruments during the pandemic and the growing preference and acceptance of the public for digital transactions.

Amount of Electronic Money Circulating in Indonesia



Source: Processed from Bank Indonesia data (2021)

Based on the picture above, it can be seen that the development of the use of electronic money in Indonesia continues to increase from year to year. The increase in the number of electronic money in circulation indicates that non-cash payments can reduce the need to use cash or currency.

Bank Indonesia accelerates the digitization of payments and the expansion of the digital ecosystem through collaboration with the government, PJSP, fintech, and e-commerce for national economic recovery through digitizing MSMEs, namely by expanding the QRIS ecosystem, using big data, API applications, and strengthening fraud and cyber-surveillance in digital payments. In this case, every Penyelenggara Jasa Sistem Pembayaran (PJSP) that uses the QR system must adopt QRIS, which is regulated in PADG No. 21/18/2019 regarding international QRIS standards for payments.

Lampung Province was recorded as early October 2021, 187.177 merchants were using QRIS spread across all regencies and cities. The analysis and function of Bank Indonesia's payment system policy implementation for Lampung Province, Triani Susanti, explained that the highest number of QRIS merchants was in Bandar Lampung City reaching 87.337, followed by Central Lampung Regency with 21.608 and South Lampung Regency with 17.489. During the pandemic, many sectors were affected, including MSMEs. Based on the BI MSMEs survey in Lampung Province in 2020 of 2.970 respondents, around 87,5% were negatively affected by the pandemic, then slowly 70,3% of those affected tried to implement an online sales strategy to minimize the impact of the pandemic. So that MSMEs that have gone digital and have joined in corporatization are more resilient amid a pandemic. This is also supported by the BPS 2020 survey of business actors, where 80% of business actors who do online marketing are very influential in product sales. Even those who already

used IT to market their products before the pandemic had a higher income of around 1,14 times than those who were just online (Yuda Pranata, 2021).

The implementation of QRIS is inseparable from challenges, as for the challenges and risks of QRIS, according to Nailul Huda, an economist from the Institute for Development of Economics and Finance (INDEF), one of which is security infrastructure that should be wary of which is vulnerable to digital crimes such as data theft. Based on this phenomenon, the authors are interested in researching what factors influence the use of technology to affect individual interests and behavior in using the technology by using the UTAUT model and adding the perceived risk construct.

II. THEORETICAL FRAMEWORK

A. Quick Response Code Indonesian Standard (QRIS)

On January 1, 2020, Bank Indonesia officially released a standard for the use of QR Code Indonesia or Quick Response Code Indonesian Standard (QRIS). QRIS is a standard QR Code payment for Indonesian payment systems developed by Bank Indonesia and the Indonesian Payment System Association (IPSA). Every Payment System Service Provider (PSSP) that uses the QR Code system must adopt the Quick Response Code Indonesian Standard (QRIS). This is regulated in PADG NO.21/18/2019 regarding implementing the QRIS International Standard for payments (Bank Indonesia, 2019). QR Code functions to use one QR Code through various payment services. The QR Code National Standard is needed to anticipate technological innovations and the development of payment channels using QR Codes that have the potency to cause new fragmentation in the payment system industry and expand acceptance of national non-cash payments more efficiently.

B. Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh et al., (2003) created the Unified Theory of Acceptance and Use of Technology (UTAUT) model. This UTAUT model identifies the main factors in the acceptance of information technology as measured by the desire to use technology and the level of actual use of the technology. The UTAUT model comprises four variables, which are Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions. The Theory Model The Unified Theory of Acceptance and Use of Technology (UTAUT) is a model composed of fundamental theories related to the acceptance and behavior of using technology. UTAUT brings together the best characteristics derived from eight other technology acceptance theories so that the model has been developed in such a way by reviewing and consolidating existing models (Venkatesh et al., 2003).

III. PREVIOUS RESEARCH

Previous studies that become the reference on this research are studies about user's acceptance factor on the payment method of digital wallet that will be described as follows. Surekha et.al (2015), researchers from India, proposed an alternative method using visual cryptography

applications. By using two new approaches proposed with the aim of electronic payment transactions. The first method requires the customer's limited personal information to transfer the funds online. It protects customer data which does increase customer trust and prevents identity theft. The second method is the creation of secure e-tickets for train and movie applications based on QR-Codes with encrypted content. The proposed method is compatible with the minimal infrastructure currently available with the customer. Handayani and Sudiana (2015) found that Performance Expectancy, Social Influence, and Facilitating Conditions affect Behavioral Intention, while Effort Expectancy does not.

Research conducted by Zuhaida and Giri (2017) shows that the variables of Performance Expectancy, Effort Expectancy, and Social Influence affect Behavioral Intention. Nugroho, Winarno, and Hartanto (2017) show that facilitating conditions and price value affect the intention to use mobile payments. Gayatrie, Kusyanti, and Saputra (2017) show that habit, Social Influence, and Effort Expectancy affect Behavioral Intention. Sutanto, Ghozali, and Handayani (2018) show that hedonic motivation and habit influence behavioral Intention. Research about the utilization of QR Codes was also conducted by Faridhal (2019). (Andre, 2019) used the UTAUT model as the independent and dependent variables. In addition, this study adds factors of perceived risk and cost as additional independent variables. This study indicates that perceived risk and expense do not significantly affect user acceptance of digital wallet payment methods. The factor that influences user acceptance is the social influence factor. Arianti, Darma, Maradona, and Mahuni (2019) concluded that in general, the QR Code is not yet acceptable in business transactions in Bali, and the provision of information still need to be improved with the implementation of better strategies and socialization from the banking sector so that the planned program runs as expected. QR Code research was also carried out by (Soviah, 2019) using the UTAUT variable. The results showed that all variables showed a significant effect, apart from age, gender, and experience. Research has also been carried out by (Musyaffi, 2020) using the TAM 3 model, and includes additional variables, namely plan to continue to use, frequently to use, recommend to others, clear and understandable, less effort, error probability, and problem risk. This study indicates that the perception of convenience significantly affects user acceptance of the QR Code as a digital wallet payment method, while problem risk has no effect.

Based on previous studies, the variables used in this study as measuring materials are the variables in the UTAUT model by adding the perceived risk variable. Then the variables in the study proposed the following hypotheses:

- H1: Performance Expectancy affects Behavioral Intention
- H2: Effort Expectancy affects Behavioral Intention
- H3: Social Influence affects Behavioral Intention
- H4: Facilitating Conditions affect Behavioral Intention
- H5: Perceived Risk affects Behavioral Intention
- H6: Behavioral Intention affects Use Behavior

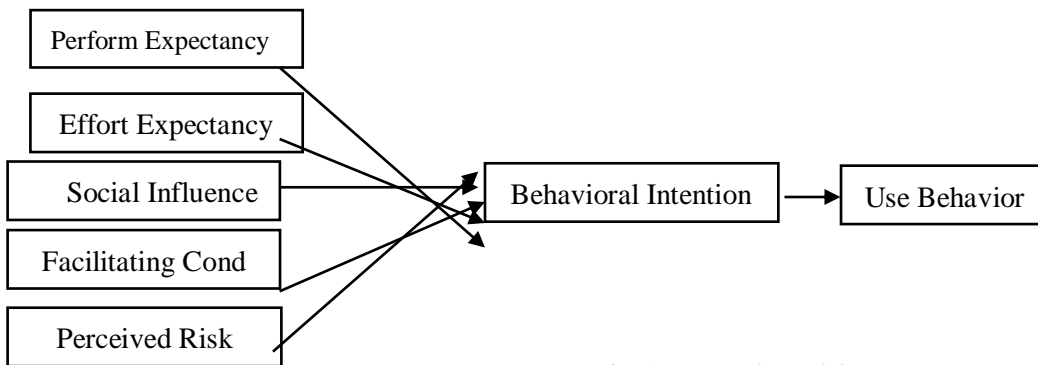


Fig. 1: Research Model

IV. RESEARCH METHODOLOGY

The population in this study are all users of the Quick Response Code Indonesian Standard (QRIS) in the payment process and have an account on an application from one of the Penyelenggara Jasa Sistem Pembayaran (PJSP). The sample criteria used are samples for the population of QRIS users in Bandar Lampung City. The minimum sample size in the PLS-SEM analysis is 10 times the maximum number of arrows (paths) hitting the variable (Hair et al., 2014). In this study, there are 6 lines, so that 6 x 10 = 60 minimum samples.

The independent variables for this study are Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Condition (FC), and Perceived Risk (PR). Meanwhile, the dependent variables are Behavioral Intention (BI) and Use Behavior (UB). The six hypotheses proposed in this study are explained in the theoretical framework section based on the conceptualized measurement model.

Data was collected using an e-questionnaire (google form) which was then distributed to respondents and continued for statistical testing. There are 12 questions given to the respondents. The questions distributed consisted of 2 questions representing indicators on the PE variable, 2 questions representing EE indicators, 2 questions representing SI indicators, 2 questions representing FC indicators, 2 questions representing PR indicators, 2

questions representing BI indicators, 2 questions that represent UB indicators (Mulia, 2019).

Furthermore, the data is processed, tested, and analyzed at the statistical test stage to test the hypothesis. The analytical tool used is a component- or variant-based Structural Equation Model (SEM) called Partial Least Square (PLS). The statistical tests carried out were divided into two, namely the outer model testing which was carried out using three types of tests, namely Convergent validity, Discriminant Validity, and Composite reliability. In comparison, the inner model testing was carried out using three types of tests, which are Path Value, R-Square, and T-Test Statistics.

V. RESULTS AND DISCUSSION

The primary data collected was 60 respondents. The data is divided into 2 categories: personal and technical data. Personal data of respondents is based on gender, age, and domicile, while technical information consists of data directly related to indicators and research variables.

Respondents in this study were dominated by women with 38 respondents (%) of the 60 respondents assigned and the remaining 22 respondents (%) were men. Data analysis was carried out using smartPLS 3.3 software, which divided the test analysis into two parts: evaluation of the outer model and assessment of the inner model.

• Testing Outer Model

A. Convergent Validity

	PE	EE	SI	FC	PR	BI	UB
PE1	0,909						
PE2	0,846						
EE1		0,979					
EE2		0,829					
SI1			0,971				
SI2			0,935				
FC1				0,935			
FC2				0,909			
PR1					0,947		
PR2					0,907		
BI1						0,867	
BI2						0,916	
UB1							0,909

UB2							0,936
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Table 1: Output Outer Model

Data processed in 2022

Based on the Outer loading output, it can be seen that the loading factor results of all indicators for each construct have met convergent validity because all the loading factor values of each indicator are above 0.70. The model has a

sufficient validity value if it has an AVE value greater than 0.50. The following is the output of AVE:

Description	AVE
Performance Expectancy (PE)	0,771
Effort Expectancy (EE)	0,882
Social Influence (SI)	0,908
Facilitating Condition (FC)	0,850
Perceived Risk (PR)	0,859
Behavioral Intention (BI)	0,796
Use Behavior (UB)	0,851

Table 1.2: Output AVE

Data processed in 2022

From table 1.2, it can be seen that the AVE value of each variable is more significant than 0.5, which indicates that all latent variables meet the requirements of convergent validity. It means that the latent variable can represent each indicator in the block to obtain convergent validity, which requires an AVE value greater than 0.5

B. Discriminant Validity

	PE	EE	SI	FC	HM	BI	UB
PE1	0,909	-0,003	-0,026	0,010	-0,030	0,235	0,066
PE2	0,846	0,121	0,075	0,029	0,071	0,183	0,023
EE1	0,078	0,979	0,081	-0,033	0,167	0,084	-0,047
EE2	-0,007	0,829	0,093	0,025	0,185	0,031	-0,050
SI1	0,014	0,055	0,971	0,161	0,271	0,122	0,020
SI2	0,029	0,130	0,935	0,121	0,327	0,082	0,023
FC1	0,071	-0,095	0,132	0,935	0,156	0,233	0,117
FC2	-0,041	0,074	0,149	0,909	0,070	0,186	0,120
HM1	0,057	0,169	0,260	0,105	0,947	0,127	0,050
HM2	-0,041	0,172	0,318	0,134	0,907	0,097	0,119
BI1	0,264	0,092	0,056	0,096	0,069	0,867	0,177
BI2	0,176	0,046	0,093	0,293	0,143	0,916	0,225
UB1	0,044	-0,079	-0,006	0,092	0,023	0,316	0,909
UB2	0,054	-0,020	0,043	0,140	0,127	0,292	0,936

Table 1.3: Output Cross Loading

Data processed in 2022

Based on the output cross-loading table, a variable has discriminant validity from the output cross-loading table if the cross-loading value is above 0.7. The table above shows that the cross-loading value in bold and color-blocked has met above 0.7.

C. Composite Reliability

Description	Cronbachs Alpha	Composite Reliability
Performance Expectancy (PE)	0,708	0,871
Effort Expectancy (EE)	0,820	0,902
Social Influence (SI)	0,902	0,952
Facilitating Condition (FC)	0,825	0,919
Perceived Risk (PR)	0,839	0,929
Behavioral Intention (BI)	0,746	0,886
Use Behavior (UB)	0,826	0,920

Table 1.4: Output Cronbach's Alpha and Composite Reliability

Data processed in 2022

From the table above, it can be seen that the output value of Cronbach's alpha and composite reliability shows that the value of each construct is above 0.70. So, it can be concluded that each construct and model that is estimated have good reliability.

D. Inner Model Test

Description	AVE
Performance Expectancy (PE)	
Effort Expectancy (EE)	
Social Influence (SI)	
Facilitating Condition (FC)	
Perceived Risk (PR)	
Behavioral Intention (BI)	0,132
Use Behavior (UB)	0,150

Table 1.5: Output R-Square (R²)

Data processed in 2022

Based on the model criteria, the R-Square (R²) value in the table above indicates that each structural model (Inner model) in this study is categorized as “weak”. The Behavioral Intention (BI) variable has an R² value of 0.132, which means that the Behavioral Intention (BI) variable is less able to explain 13% of changes in the Behavioral

Intention (BI) variable and other factors outside the research model influence the remaining 87%. While the Use Behavior (UB) variable has an R² of 0.150, the Use Behavior (UB) variable cannot explain factors outside the research model influence 15% and the remaining 85%.

E. Hypothesis Testing and Explanation

	Original Sample(O)	Sample Mean(M)	Standard Deviation (STDEV)	TStatistics (IO/STDEVI)	P Values
PE->BI	0,217	0,217	0,126	1,722	0,086
EE->BI	0,053	0,045	0,105	0,499	0,618
SI ->BI	0,045	0,054	0,095	0,474	0,636
FC-> BI	0,204	0,211	0,106	1,932	0,054
PR ->BI	0,072	0,089	0,087	0,827	0,409
BI ->UB	0,304	0,306	0,090	3,385	0,001

Table 1.5: Path Coefficients

Data processed in 2022

a) Hypothesis Explanation 1

The results were obtained using the SmartPLS 3.3 application on the path coefficients after the bootstrapping process with a two-tailed test type at an error rate of 10%. The T-Statistics value of 1.722 is more significant than 1.65 and the P-Values value of 0.086 is smaller than 0.10 which indicates that Performance Expectancy affects Behavioral Intention. So it can be concluded that there is a relationship between Performance Expectancy and Behavioral Intention on the use of QRIS in Bandar Lampung City.

b) Hypothesis Explanation 2

The results were obtained using the SmartPLS 3.3 application on the path coefficients after the bootstrapping process with a two-tailed test type at an error rate of 10%. The T-Statistics value of 0.499 is smaller than 1.65 and the P-Values value of 0.618 is more significant than 0.10 which indicates that Effort Expectancy does not affect Behavioral Intention. So it can be concluded that there is no relationship between Effort Expectancy and Behavioral Intention on the use of QRIS in Bandar Lampung City.

c) Hypothesis Explanation 3

The results were obtained using the SmartPLS 3.3 application on the path coefficients after the bootstrapping process with a two-tailed test type at an error rate of 10%.

The T-Statistics value of 0.474 is smaller than 1.65 and the P-Values value of 0.636 is more significant than 0.10 which indicates that Social Influence does not affect Behavioral Intention. So it can be concluded that there is no relationship between Social Influence and Behavioral Intention on the use of QRIS in Bandar Lampung City.

d) Hypothesis Explanation 4

The results were obtained using the SmartPLS 3.3 application on the path coefficients after the bootstrapping process with a two-tailed test type at an error rate of 10%. The T-Statistics value of 0.827 is smaller than 1.65 and the P-Values value of 0.409 is more significant than 0.10 which indicates that Perceived Risk does not affect Behavioral Intention. So it can be concluded that there is no relationship between Perceived Risk and Behavioral Intention on the use of QRIS in Bandar Lampung City.

e) Hypothesis Explanation 5

The results were obtained using the SmartPLS 3.3 application on the path coefficients after the bootstrapping process with a two-tailed test type at an error rate of 10%. The T-Statistics value of 0.827 is smaller than 1.65 and the P-Values value of 0.409 is more significant than 0.10 which indicates that Perceived Risk does not affect Behavioral Intention. So it can be concluded that there is no relationship

between Perceived Risk and Behavioral Intention on the use of QRIS in Bandar Lampung City.

f) Hypothesis Explanation 6

The results were obtained using the SmartPLS 3.3 application on the path coefficients after the bootstrapping process with a two-tailed test type at an error rate of 10%. The T-Statistics value of 3.385 is more significant than 1.65 and the P-Values value of 0.001 is smaller than 0.10 which indicates that Behavioral Intention affects Use Behavior. So it can be concluded that there is a relationship between Performance Expectancy and Behavioral Intention on the use of QRIS in Bandar Lampung City.

VI. CONCLUSION

According to the research and explanation, we can conclude that Performance Expectancy and Facilitating Condition simultaneously significantly influence Behavioral Intention using QRIS in Bandar Lampung. While Effort Expectancy, Social Influence, Perceived Risk have no significant influence on Behavioral Intention and the Behavioral Intention, they have no power to Use Behavior on using QRIS in Bandar Lampung. UMKM and PJSP that manage QRIS can maintain their facilities because it is credible that Facilitating Condition significantly influences using QRIS.

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