



## The Influence of Perceived Ease of Use and Security on QRIS Usage Decisions Among the Community in Lampung Province

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**Abstract.** Payment system developments brought about by technological advancements to date have resulted in a variety of cashless transactions, including card-based and application-based (server) electronic money. Bank Indonesia launched QRIS (Quick Response Code Indonesian Standard), an application-based non-cash payment system that addresses community demands. Finding out how perceived ease of use and security affect QRIS usage decisions in the Lampung Province Community is the goal of this study. This study is quantitative and employs a survey approach, distributing a questionnaire to 140 Lampung Province residents who have used QRIS to make payments. The study's findings suggest that decisions about usage are significantly influenced by perceived ease of use and security in transactions.

**Keywords:** Perceived ease of use, Security, Usage decisions, QRIS

### 1. INTRODUCTION

Technological advances have changed the payment industry, including the presence of electronic money as a non-cash payment tool (Ridwan & Dharma, 2022). The use of electronic money is often subject to administrative fees, especially in transactions between servers, which is a consideration for the public. QRIS (Quick Response Code Indonesian Standard) was launched by Bank Indonesia on August 17, 2019 and implemented on January 1, 2020 as a solution to this administrative cost problem (Aryawati et al., 2022). Since its launch, Lampung Province has become the third largest QRIS user in Sumatra, with 1.02 million users. According to the Lampung Province Economic Report (November 2023), QRIS users in Lampung in quarter 3 of 2023 increased by 5.32% from the previous quarter, reaching 1,027,451 users. This increase was driven by socialization conducted by Bank Indonesia Lampung Province. Factors that encourage the use of QRIS include the ease of technology in daily transactions and the guarantee of security and risks faced by the community (Setiawan & Mahyuni, 2021).

One of the advantages of QRIS is its ease of use, which makes transactions more practical (Rahmawati & Arfiansyah, 2024). Even so, QRIS users still face obstacles. The reliance on internet connection causes problems when the network is unstable, especially in rural areas (Ibrahim, 2023; Riswanda, 2023). Furthermore, QR Code scanning errors can occur due to poor camera quality, low lighting, or damaged QR Codes (Mudah Indonesia, 2024). In addition, technology users expect data confidentiality and security (Kamil, 2020). QRIS has implemented security measures such as authentication and data encryption, but still faces obstacles, such as fake QRIS scams, scamming, phishing, and quishing that target sensitive user data (Prima, 2024; Tim Bank Mega Syariah, 2024).

Rahardyan (2024) also revealed an increase in QRIS abuse, including the installation of fake QR codes to steal consumer data or funds.

Research by Fadhillah et al. (2021), Ningsih et al. (2021), Nurhapsari & Sholihah (2022) state that ease of use has a positive impact on usage decisions. However, Saputri (2020) states that convenience does not affect the use of QRIS. Kamil (2020) found that security has a positive effect on the use of financial technology, while Rahmawati & Arfiansyah (2024) found that security does not affect the use of QRIS in Surakarta MSMEs. This study focuses on consumer behavior in using technology with the variables of perceived convenience and security as factors that influence usage decisions.

## **2. LITERATURE REVIEW**

### **Consumer Behaviour Theory**

Consumer behavior, according to Schiffman et al. (2012), is the study of how individuals use resources (time, money, effort) to buy consumer goods, including factors such as what, when, and where they buy and how to pay for and use these goods. Kotler & Keller (2017) define it as the study of how individuals, groups, and organizations choose and use goods or services to meet their needs. This research involves three perspectives: decision making, experience, and behavioral influences, which affect the way consumer behavior factors are identified.

### **Perceived Ease of Use**

Ease of use is an individual's belief that technology can be used without excessive effort. This ease dimension includes the learning process, easy use, and the ability to master technology (Sati & Ramaditya, 2020). In digital payments, perceived ease of use greatly influences interest in use (Nurhapsari & Sholihah, 2022). For QRIS, ease of use means the view that QRIS services can be used quickly and simply, and have the potential to be used sustainably by consumers. Perceived ease of use has several indicators, according to Venkatesh and Davis (1996) in (Rahmawati & Arfiansyah, 2024), namely: 1) Ease; 2) Clarity; 3) Ease of learning; and 4) Overall ease. The easier a system or technology is to use, the more likely someone is to use it, because the less effort it takes.

### **Security**

The term "security" refers to using a system with foresight to prevent future issues, crucial for protecting user data from theft and illegal activities (Rahmawati &

Arfiansyah, 2024). A reliable security system is one that securely stores user data. Data security involves protecting systems from unauthorized access or alterations, and safeguarding data from misuse, modification, or destruction. According to Kamil (2020), security indicators include: 1) Privacy, protecting personal information; 2) Integrity, preventing misuse of data; and 3) Authentication, preventing data leaks.

### **Usage Decisions**

A person choose the optimal option after going through a methodical thought process to satisfy demands. Making decisions as a consumer requires combining insights to assess the options that best meet needs. The user choice process encompasses steps starting from need recognition to post-use behavior, which includes need identification, information search, evaluation, selection, and attitude after usage, to make an effective decision (Rahmawati & Arfiansyah, 2024). Kotler & Keller (2017) mention five stages of decision making: 1) Problem recognition; 2) Information search; 3) Evaluation of alternatives; 4) Purchase decision; 5) Post-purchase behavior. Indicators of decision making according to Weng and Ding (2012) and Al-maghrabi et al. (2010) in Piarna and Apandi (2019) include: 1) Participation, related to the intensity of customer transactions; 2) Recommendations, where users suggest others for transactions; 3) Sustainability, where users return to transactions with the same media.

### **Digital Payment**

Digital payment models make transactions easier and more convenient by allowing users to conduct payments online via the internet using electronic devices like smartphones. Examples include mobile banking, online banking, SMS banking, and e-wallets. Generations X, Y, and Z are the primary adopters, drawn to digital payments for their simplicity, convenience, and perks like discounts and cashback (Houston, 2020). Benefits of digital payments include time and labor efficiency, easy access at various merchants, increased customer loyalty, lower administrative costs, and better security. However, drawbacks include higher hacking risks, reduced privacy, reliance on the internet, and potential errors that can affect user convenience and trust.

### **Quick Response Code Indonesian Standard (QRIS)**

QRIS is a QR Code standard that incorporates several QRs from Payment System Service Providers (PJSP), according to Bank Indonesia (2020) . In line with the goal of the Indonesian Payment System (SPI) 2025, QRIS, which was created by Bank Indonesia and ASPI using the worldwide standard EMV Co, facilitates broader payment system linkages. This QRIS standard must be adhered to by all payment applications,

whether domestic and international. The National Payment Gateway (GPN) policy, which aims to provide a secure, streamlined, dependable, and effective payment system for domestic transactions, is also supported by the deployment of QRIS.

QRIS, introduced by Bank Indonesia (2020), promotes efficient transactions, financial inclusion, and MSME growth, with the key features summarized in UNGGUL: 1) Universal, supports any QR Code-based payment app; 2) Gampang, easy to use, with a single QRIS for all payments; 3) Untung, benefits users and merchants with quick and easy transactions; and 4) Langsung, instant payment processing with immediate notifications. QRIS also offers several benefits: for users, it provides fast, secure payments without the need for cash or extra devices; for merchants, it enhances sales, visibility, simplifies transactions with one QRIS, reduces costs, prevents fraud, and enables better financial management and reconciliation.

### **Hypothesis**

H<sub>1</sub>: Perception of ease of use (X<sub>2</sub>) has a positive effect on the decision QRIS (Y).

H<sub>2</sub>: Security (X<sub>3</sub>) has a positive effect on the decision to use the QRIS (Y).

## **3. METHODS**

### **Design, Sample, Research Analysis**

This quantitative research relies on extensive numerical data, from collection and interpretation to presentation (Siyoto & Sodik, 2015). Then, data was gathered using questionnaires distributed to respondents in Lampung Province, scored on a Likert scale as follows: 5 for Strongly Agree (SS), 4 for Agree (S), 3 for Neutral (N), 2 for Disagree (TS), and 1 for Strongly Disagree (STS). For the research sample, it follows the Hair et al. (2014) method which states that the sample size is 5-10 times the research indicator. Then this research has 10 indicators, so that a sample size of 100 respondents was chosen. The sample, selected through non-probability sampling, includes residents of Lampung who are at least 17 years old and have used QRIS for transactions via e-wallet or m-banking. Data was analyzed with IBM SPSS Statistics 26 at a 5% significance level.

### **Multiple Linear Regression**

According to Sugiyono (2019), multiple linear regression is used to predict changes in the dependent variable if there are at least two independent variables. This method is applied with more than one independent variable, in this case perceived ease of use (X<sub>1</sub>) and security (X<sub>2</sub>), to see its effect on the dependent variable, namely the usage decision (Y). The multiple linear regression formula is as follows with these

descriptions: 1) Y : Usage decision variable; 2) a : Constant; 3)  $\beta_1$  : Regression coefficient of perceived ease of use; 4)  $\beta_2$  : Security regression coefficient; 5) X1: Perceived ease of use variable; and 5) X2: Security variable.

$$Y = \alpha + \beta_1 \cdot X_1 + \beta_2 \cdot X_2$$

### Instrument and Hypothesis Tests

Validity and reliability tests are used to evaluate research instruments: 1) Validity Test: As per Ghozali (2016), this test checks the validity of a questionnaire, requiring a KMO-MSA value above 0.5 for factor analysis. 2) Reliability Test: This test assesses whether a questionnaire consistently produces similar results, measuring the precision or accuracy of the instrument, either internally or externally. In this study, reliability is measured using Cronbach's Alpha, ranging from 0 to 1. For hypothesis testing, two methods are applied: 1) T-test: Following Ghozali (2016), this partial test examines individual regression coefficients to determine the effect of each independent variable on the dependent variable. 2) F-test: This test assesses the combined influence of all independent variables on the dependent variable.

## 4. RESULTS

### Validity and Reability Test Results

A variable is considered genuine if its loading coefficient value is greater than 0.50, its KMO-MSA value is greater than 0.50, and its Anti Image Integration value is greater than 0.50. Then, reliability testing is carried out to determine the extent to which research measuring instruments can be trusted or relied, use Cronbach's Alpha > 0.60.

**Table 1. Validity and Reability Test Resultss**

Variable	Items	Validity			Results	Reability		
		KMO-MSA	Anti Image Correlation	Loading Factor		Cronbach Alpha	h's Alpha Item Delete	Results
Perceived Ease of Use (X1)	X2.1	0.910	0.924	0.880	Valid	0.921	0.904	Reliable
	X2.2		0.945	0.814			0.91	
	X2.3		0.917	0.843			0.908	
	X2.4		0.927	0.739			0.919	
	X2.5		0.929	0.898			0.902	
	X2.6		0.965	0.649			0.926	
	X2.7		0.863	0.873			0.907	

Variable	Items	Validity			Results	Reliability		
		KMO-MSA	Anti Image Correlation	Loading Factor		Cronbach's Alpha	Item Delete	Results
Security (X2)	X2.8	0.884	0.849	0.807	Valid	0.891	0.912	Reliable
	X3.1		0.902	0.758			0.881	
	X3.2		0.921	0.796			0.876	
	X3.3		0.857	0.89			0.855	
	X3.4		0.857	0.815			0.872	
	X3.5		0.903	0.775			0.879	
Decisions of Usage (Y)	X3.6	0.891	0.884	0.809	Valid	0.908	0.872	Reliable
	Y.1		0.928	0.709			0.91	
	Y.2		0.909	0.801			0.899	
	Y.3		0.881	0.831			0.891	
	Y.4		0.866	0.861			0.886	
	Y.5		0.896	0.877			0.881	
Y.6	0.883	0.892	0.878					

Source: Data Processed by SPSS, 2024

### Multiple Linear Regression Results

The influence of the independent variables on the dependent variable can be seen from the following multiple linear regression results:

**Table 2. Multiple Linear Regression Results**

Coefficients					
Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
Constant	1.654	1.986		.833	.407
Perceived Ease of Use	.153	.070	.168	2.202	.029
Security	.699	.086	.619	8.123	.000
<i>Dependent Variable: Decisions of Usage</i>					

Source: Data Processed by SPSS, 2024

Based on those values in the table, so that the regression equation is obtained as follows:

$$Y = 1.654 + 0.168 X_1 + 0.619 X_2$$

- The constant 1.654 means that, without the influence of other variables, the usage decision is 1.654.

- The coefficient of perceived ease of use (X1) of 0.168 indicates that a 100% increase in this perception increases the decision to use by 16.8%.
- The security coefficient (X2) of 0.619 indicates that a 100% increase in security raises the usage decision by 61.9%.

**Hypothesis Test Results**

The T-test aims to find out whether each independent variable partially or individually has an effect on the dependent variable. The F test is a test used to find out whether the independent variables together can have a significant effect on variable Y.

**Table 3. T-Test Resultss**

No.	Hypothesis	T <sub>stat.</sub>	Sig	T <sub>tab.</sub>	Results
1	Perceived ease of use influences the decision to use QRIS among the people of Lampung Province	2.202	0.029	1.9775	Accepted
2	Security influences the decision to use QRIS among the people of Lampung Province	8.123	0.000	1.9775	Accepted

*Source: Data Processed by SPSS, 2024*

**Table 4. F-Test Resultss**

Model		Sum Of Square	Df	Mean Square	F	Sig
1	Regression	1585.307	1	792.653	82.861	.000 <sup>b</sup>
	Residual	1310.543	137	9.566		
	Total	2895.850	139			

a. Dependent Variable: Decisions of Usage

b. Predictors: (Constant); Perceived ease of use (X1), dan Security (X2)

*Source: Data Processed by SPSS, 2024*

**5. DISCUSSION**

**The Influence of Perceived Ease of Use on the Decision to Use QRIS in Lampung**

The test results indicate that Ha<sub>1</sub> is accepted, and H0<sub>1</sub> is rejected, confirming Hypothesis 1 that “perceived ease of use influences usage decisions.” The t-test shows that tcount (2.202) exceeds ttable (1.9775), with a significance level of 0.029, which is below 0.05. This outcome suggests that as the QRIS system becomes easier to use, user decision rates increase. Empirical findings support this hypothesis, showing a significant link between perceived ease of use and QRIS usage decisions, with users favoring QRIS due to its advantages over other non-cash options. Theoretically, perceived ease of use is an internal consumer behavior factor, consumers are more likely to use systems that are

practical, effective, and efficient (Ningsih et al., 2021). The results of this study are in line with the results of previous research conducted by Kamil (2020) which states that there is a positive effect of perceived ease of use on fintech usage behavior. Other research that also supports this hypothesis is research by Rahmawati & Arfiansyah (2024) which states that the ease of use variable has a significant effect on the decision to use QRIS. Then research by Ningsih, et al., (2021) also explains that there is a positive effect of perceived ease of use on decisions to use QRIS on UPI Y.A.I Jakarta students.

### **The Influence of Security on the Decision to Use QRIS in Lampung**

The test results show that  $H_{a2}$  is accepted and  $H_{02}$  is rejected, which means that Hypothesis 2 “security affects usage decisions” is accepted. The t-test results show that the tcount (8.123) is greater than the ttable (1.9775) with a significance value of 0.000, which is smaller than 0.05. These results indicate that the higher the level of security, such as protection against cyber attacks and personal data security, the greater the public's decision to use QRIS in Lampung Province. This hypothesis is supported by empirical findings that show a significant relationship between security and the decision to use QRIS in transactions. People feel safer using QRIS because this service is directly protected by Bank Indonesia, thus providing more trust than other non-cash transactions. Theoretically, security is included in the internal behavior of consumers; the better the security offered by a non-cash payment system, the higher the likelihood of users deciding to use it (Kamil, 2020). This hypothesis is consistent with previous research, such as the study by Kamil (2020) which found a positive influence of security on fintech usage behavior, as well as the study by Aprianti et al. (2023) which also found that security has a positive and significant impact on customer decisions in using QRIS livin' by Mandiri.

## **6. CONCLUSION**

Based on research on 150 respondents in Lampung Province, it can be concluded that: 1) Perceived ease of use has a significant effect on the decision to use QRIS, where the easier it is to use QRIS, the greater the community's decision to use it. 2) Security also has a significant effect on the decision to use QRIS, with the safer the QRIS system, the higher the public's decision to use it.

## **7. LIMITATION**

This research has limitations in that it only examines the effect of perceived ease of use and security on usage decisions within the Lampung community, excluding other



potential influencing factors such as culture, habits, or personal motivation, which could also be important. Moreover, data was mainly collected through self-reported questionnaires, which may lead to response bias, as participants might underreport or overreport their behaviors. Future studies could overcome these limitations by expanding the sample size, duration, data collection, and conducting further empirical analysis.

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