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THE INFLUENCE OF PERCEPTIONS OF TRUST AND PERCEPTIONS OF SECURITY ON THE EFFICIENCY OF USING QRIS AS A MEANS OF DIGITAL PAYMENT FOR KARANGANYAR REGENCY MSMEs

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Abstract

The increasing use of digital payment systems has encouraged MSMEs to adopt QRIS as a cashless payment method. This study aims to examine the effect of perceived trust and perceived security on the efficiency of QRIS usage among MSMEs in Karanganyar Regency. This research uses a quantitative approach with primary data collected from 108 MSMEs through questionnaires. Data analysis was conducted using multiple linear regression with SPSS. The results show that perceived trust does not significantly affect QRIS usage efficiency, while perceived security has a positive and significant effect. However, perceived trust and perceived security simultaneously have a significant effect on QRIS usage efficiency. The coefficient of determination indicates that 34.9% of the variation in efficiency is explained by the two variables. This study concludes that security perception plays a more important role than trust in improving QRIS usage efficiency among MSMEs.

Keywords: perceived trust, perceived security, QRIS efficiency, MSMEs.

INTRODUCTION

1.1 Background

The rapid development of information technology has resulted in major changes in many aspects of life, including in the way payments are made. Nowadays, people are starting to abandon cash and switch to cashless transactions through various digital applications. One innovation that is emerging in Indonesia is the Quick Response Code Indonesian Standard (QRIS), which was introduced by Bank Indonesia as a national standard for digital payments using QR codes. QRIS is a national payment system based on QR codes that makes things easier, open to everyone, and well connected. QRIS is one of the concrete steps in the National Non-Cash Movement (GNNT) which aims to increase access to financial services and speed up the transaction process (Anasti & Yuni Yuniarti, 2025).

Technological and knowledge advances encourage the growth of the digital economy and increase economic access for people in a region or country. An example of the application of information technology in the growth of the digital economy is the use of payment methods without using cash. Through QRIS, people can carry out transactions quickly, easily,

cheaply, safely and reliably with just one QR code which can be used for various payment applications (Nur Isma Tasya Br Sebayang & Rahmawati, 2023).

One example is several MSMEs in Karanganyar Regency. QRIS is expected to provide benefits in financial transactions, not only for the general public but also for Micro, Small and Medium Enterprises (MSMEs) in Karanganyar Regency. The implementation of QRIS is a tactical step that supports business digitalization and increases efficiency in transactions. QRIS offers a variety of benefits for MSMEs, such as ease of carrying out transactions, cost savings, and increased accessibility to financial services. However, QRIS adoption by MSMEs is still relatively low in several areas, including Karanganyar Regency. This raises questions about factors that influence the efficiency of MSME players in utilizing QRIS-based payment systems (Saifudin et al., 2025).

The main factor that influences the efficient use of digital payment technology is the level of trust and security that users have. Trust is the basis for someone to choose to use a digital system because it is related to their confidence in the quality and honesty of the service provider. Meanwhile, security relates to how much users feel transactions via QRIS are protected from the risk of data intrusion or fraud.

Security is something that buyers really pay attention to. Although QRIS provides ease of dealing, the risk of fraud and data leakage remains a major concern for people who are not very familiar with digital transactions. Perceptions about security influence MSMEs' decisions in adopting QRIS. Therefore, it is important for this payment system to have good security features, in order to increase the trustworthiness of MSMEs (Amalia et al., 2025).

1.2 Problem Formulation

1. How does public trust perceive the efficiency of using QRIS as a digital means of payment for MSMEs in Karanganyar Regency?
2. How does the public's security perception influence the efficiency of using QRIS as a digital means of payment for MSMEs in Karanganyar Regency?
3. Does the perception of trust and perception of public security simultaneously have a significant influence on the efficiency of using QRIS as a digital payment tool for MSMEs in Karanganyar Regency?

1.3 Research Objectives

1. Analyze the influence of public perception of trust on the efficiency of using QRIS as a digital payment tool for MSMEs in Karanganyar Regency.
2. Analyze the influence of public security perceptions on the efficiency of using QRIS as a digital payment tool for MSMEs in Karanganyar Regency.
3. Analyze the influence of the perception of trust and the perception of simultaneous public security on the efficiency of using QRIS as a digital payment tool for MSMEs in Karanganyar Regency.

2. LITERATURE SURVEY

2.1 Micro, Small and Medium Enterprises (MSMEs)

Micro, small and medium enterprises (MSMEs) are a type of business in Indonesia owned by individuals, families or business entities, in accordance with the regulations in Law no. 20 of 2008. MSMEs include businesses run by individuals, families or small business entities. To differentiate MSMEs from large businesses, several criteria are used such as the amount of annual turnover, number of assets and number of employees. If the total annual assets or income are greater than the limit of medium-sized enterprises, the latter belong to the category of large enterprises. MSMEs have an important role in helping low-income people find cheap and inclusive jobs. MSMEs also contribute greatly to creating jobs and building the economy of Indonesian society (Firsanty et al., 2025).

Small businesses are a type of independent economic enterprise, carried out by individuals or business entities that are not included in medium or large enterprises. It is not owned, controlled or linked directly or indirectly to medium or large undertakings. In accordance with this Law, Article 6 explains that micro businesses are businesses that have a maximum net worth of IDR 50,000,000.00, without covering the land and buildings where the business stands. Small businesses are businesses with a net worth of above IDR 50,000,000.00 to a maximum of IDR 500,000,000.00, without covering land and buildings where the business is located. Meanwhile, medium businesses are businesses with a net worth of above IDR 500,000,000.00 to a maximum of IDR 10,000,000,000.00, without covering land and buildings where the business is located (Gainau et al., 2024).

2.2 Quick Response Code Indonesian Standard (QRIS)

Quick Response Code Indonesian Standard (QRIS) is an important strategy developed by Bank Indonesia and the Indonesian Payment Systems Association (ASPI) in 2019. The aim is to solve the problem of solving digital payment systems in Indonesia. Before QRIS was introduced, each Payment System Service Provider (PJSP) used a different QR code format. This causes several problems, such as being less efficient, not being able to connect to each other, and not having a good user experience. With QRIS, all service providers are required to use one and the same national standard. This allows transactions between platforms to run smoothly, safely, and directly without obstacles (Atmaja & Paulus, 2022).

This payment system not only makes the transaction process easier, but also helps form a more inclusive and well-recorded digital financial ecosystem. By using QRIS, MSMEs can record each transaction automatically and clearly, making it easier to make financial reports and providing historical data that can be used by banks or financial institutions to

assess MSMEs' ability to fulfill credit requirements. In addition, the use of QRIS has also been proven to reduce transaction costs, reduce dependence on cash, and help expand the market because consumers now prefer practical digital payments. However, some business actors are still worried about the security of electronic transactions. Therefore, perceptions of trust and security are a distinct obstacle to implementing QRIS across the board among MSMEs (Utami, 2025).

2.3 Trust Perception

Trust perception is very important in accepting and using technology, because users need confidence that their personal information is safe and that the transactions they carry out are not exposed to risk. This trust includes the belief that technology systems can keep users safe from threats such as fraud or cybercrime. As technology develops increasingly sophisticatedly, the role of trust also becomes increasingly important. Users are now facing increasingly complicated types of fraud, so they need confidence that the technology used is able to protect their personal data and transaction activities.

Research shows that trust plays an important role in accepting technology. When users feel that the technology used is safe and trustworthy, they find it easier to accept it and use it. So, in creating and introducing new technology, the confidence factor needs to be considered in order to increase users' willingness to accept and use the technology.

There are several indicators of perceived trust. First, the level of risk felt by the user. If the risk of using technology feels low, such as losing money, leaking personal information, or other threats, then user trust will be higher. The lower the perceived risk, the higher the user's level of trust. Transaction needs also affect trust. Technology that can meet user needs in terms of convenience, service availability and service quality will be easier to trust. Trust in the use of digital services is of paramount importance. The reason is, this trust influences users' decisions in choosing technology-based tools, including digital payment systems such as QRIS. Therefore, people tend to choose payment service providers who are able to guarantee the security of their personal data and privacy (Puspita et al., 2025).

2.4 Security Perceptions

Security is also an important factor that influences a person's decision to use a technological system. Security serves as a preventive measure against various problems that may occur in the future. For example, in conducting transactions online, security is required to avoid theft of user data. Security has a big influence on the level of user trust in using technology systems. Users tend to be more active in using a technology system if they feel security is guaranteed, such as protecting their data and personal information.

The more secure they are, the higher the user's trust in using the technology system because they feel safe and protected. However, if users feel insecure because the security system is not good, then their trust will decrease. An example is the case of falsification of

payment codes accompanied by the amount of money and the name of the shop. Cases like this will certainly reduce user trust in using technological systems due to the incompetence of the security systems in the system (Putri, 2024).

2.5 Efficiency of using QRIS

All money is stored, processed, and sent through digital payment platforms that use electronic information These payment methods include payments via telephone, internet, SMS, and electronic wallets, and electronic payment devices such as computers, payment cards, and electronic money are used to send them (Nation, 2023). Digital payment systems consist of money transfer applications, network infrastructure, and protocols that regulate the operating system (Ikrar Nusa Bhakti et al., 2024).

Table 1 Previous research

No	Researcher (Year)	Research Title	Independent Variable (X)	Dependent Variable (Y)	Research Results
1	(Pinandito & Brilliansyach, 2024)	Efficiency of Using QRIS With Merchant Presented Mode in Non-Cash Payment Transactions	QRIS MPM Implementation, Transaction Speed	Efficiency of Using QRIS	QRIS MPM speeds up the payment process and reduces queuing time; efficiency increases in non-cash transactions.
2	(Primasari et al., 2025)	The Utilization of QRIS as a Digital Payment Innovation to Improve Operational Efficiency and Profitability of MSMEs	Accessibility, Ease, Security, QRIS Speed	Operational Efficiency and Profitability of MSMEs	QRIS has been proven to increase business efficiency and profitability because transactions are faster and cash management is easier.
3	(Rahmawaty et al., 2025)	The Influence of QRIS and E-Wallet Adoption on Transaction Efficiency and Profitability of MSMEs in Makassar City	QRIS Adoption, E-Wallet Adoption	Transaction Efficiency and Profitability	The use of QRIS increases transaction efficiency (fast, low cost, minimal errors) and thus has a positive impact on profitability.
4	(Khairani et al., 2025)	The Effect of QRIS on the Operational	Guidelines & regulations for	MSME Operational Efficiency	QRIS makes transactions

No	Researcher (Year)	Research Title	Independent Variable (X)	Dependent Variable (Y)	Research Results
		Efficiency of MSMEs in the Era of Digital Transformation: A Study of Literature	using QRIS, MSME Digitalization		faster, reduces cash costs, and makes it easier to book — so efficiency increases.
5	(Kartika Cahyaning & Arum Puspawati, 2024)	Systematic Literature Review (SLR): Effectiveness of Using QRIS as a Transaction Tool	QRIS Implementation, Digital Payment Technology	Effectiveness/Efficiency of Using QRIS	In general, QRIS has proven to be effective and efficient in using various digital transaction contexts.
6	(Jodi & Irwansyah, 2025)	Effect of Ease and Benefits of Use on Efficiency of Using QRIS on Traders	Kemudahan Penggunaan, Manfaat QRIS	Efficiency Using QRIS (Indirect efficiency, but relevant)	Trader efficiency increases if QRIS is found easy & useful indicates that perception of efficiency drives adoption.

3. METHODOLOGY

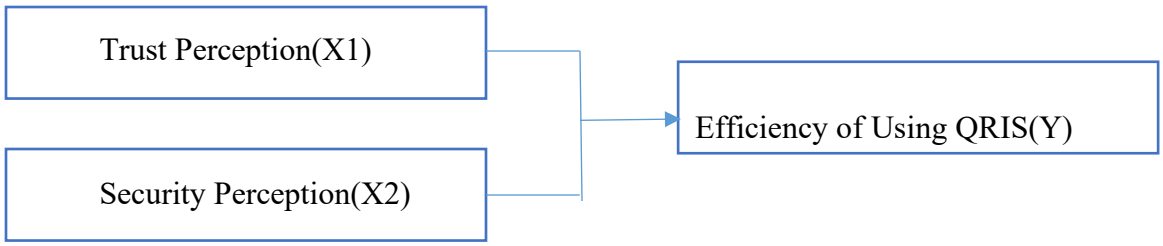
3.1 Types of Research

This research method uses a quantitative approach with primary data obtained from the distribution of questionnaires on a likert scale of 5 (strongly disagree, disagree, disagree, agree, strongly agree) to MSME actors in Karanganyar Regency with the aim of testing the influence of perceived trust and security of use on the efficiency of MSME actors in using the QRIS payment system in Karanganyar Regency. This research aims to understand the factors that influence MSME players' decisions in adopting digital payment technology such as QRIS, which is expected to increase transaction efficiency, convenience and trust for both MSME players and their customers. To that end, data will be collected through the completion of a questionnaire designed to measure the perceived trust and security of of use of the QRIS payment system.

3.2 Population and Samples

The population used in this research is all MSME actors in Karanganyar Regency. The sample selected in this research was 100 MSMEs in Karanganyar Regency who had used QRIS as a payment method in their business. The data obtained from the questionnaire will be analyzed using SPSS.

3.3 Conceptual Framework



H1: Trust has a positive and significant effect on the efficiency of using QRIS in MSMEs

H2: Safety has a positive and significant influence on the efficiency of using QRIS in MSMEs

H3: Trust and Security have a positive and significant effect on the efficiency of using QRIS in MSMEs

3.4 Operational Concepts of Variables

Table 2 Operational Concepts of Variables

Variabel	Definition	Indicator	Skala
Efficiency of Using QRIS (Y)	All money is stored, processed and sent using digital payment platforms that utilize electronic data. This payment method includes transactions via telephone, internet, SMS and electronic wallets, while electronic payment devices such as computers, payment cards and electronic money are used to make these deliveries (Ikrar Nusa Bhakti et al., 2024).	1.QRIS speeds up my transaction process. 2. To save time over cash payments. 3. The payment process using QRIS is simpler than other methods. 4. QRIS reduced my need to prepare cash or change. 5. Overall, QRIS increased my efficiency in making transactions.	Likert
Trust Perception (X1)	Trust is a person's belief about the safety and honesty of a system or service, in this case QRIS.	1. I believe that transactions using QRIS are safe from the risk of fraud or data leakage. 2. I feel that the use of QRIS increases customer confidence in my business. 3. I am sure that the QRIS provider (bank/organizer) maintains the security and confidentiality of transaction data. 4. I believe QRIS helps to increase transparency and rigour in the financial recording of undertakings.	Likert

Variabel	Definition	Indicator	Skala
		5. I feel that my experience while using QRIS makes me believe in this digital payment system even more.	
Security Perception (X2)	Security includes protection of data, transactions and user convenience.	1. I feel that the use of QRIS does not raise concerns about misuse of personal data. 2. I feel that my transaction data is protected from unauthorized access when using QRIS. 3. I feel confident that my personal information is well protected when using QRIS 4. I feel that transactions using QRIS are guaranteed to be secure so I don't worry about losing money. 5. In my opinion, QRIS provides good protection for the security of my funds during transactions.	

3.5 Data Analysis Techniques

This research uses data analyst techniques to test data quality (validity tests & reliability tests) to test whether the data is valid and reliable. Apart from that, this research also uses normality tests to test data distribution, heteroscedastistas tests to confirm homogeneous residual variance and multicollinearity tests to show that there is a significant correlation between independent variables, after which the hypothesis is tested with multiple linear regression to see the influence of independent variables on dependent variables simultaneously. The proportion of variation in dependent variables described by independent variables is measured by the coefficient of determination (R2), and finally, the effect of independent variables on dependent variables is tested by the t test.

4. RESULTS AND DISCUSSION

4.1 Results

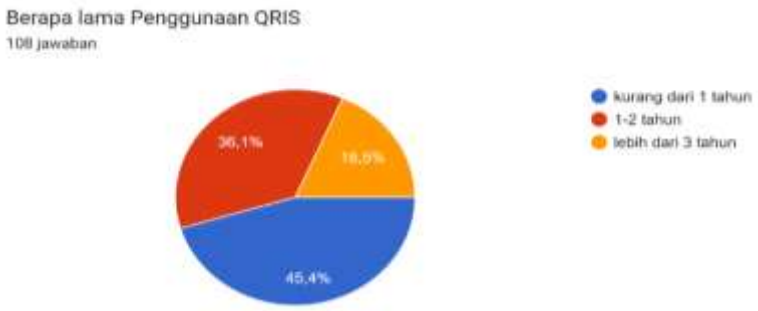


Diagram 1 Length of QRIS use by MSMEs
Source: primary data

Based on the diagram above, 49 respondents or 45.4% of the total respondents were QRIS users by MSMEs less than 1 year, 39 respondents or 36.1% of the total respondents were QRIS users by MSMEs 1-2 years, and 20 respondents or 18.5% of the total respondents were QRIS users by MSMEs who are more than 3 years old.

Validity and Reliability Test Results

Table 3 Validity and Reliable Result

Variabel	Question	Person Correlation	Sig.	Criterion	Cronbach Alpha	Description
Trust Perception (X1)	1	0,524	0.000	Valid		
	2	0,71	0.000	Valid		
	3	0,541	0.000	Valid		
	4	0,707	0.000	Valid		
	5	0,588	0.000	Valid	0,603	Reliabel
Security Perception (X2)	6	0,678	0.000	Valid		
	7	0,74	0.000	Valid		
	8	0,705	0.000	Valid		
	9	0,535	0.000	Valid		
	10	0,727	0.000	Valid	0,709	Reliabel
Efficiency of Using QRIS (Y)	11	0,659	0.000	Valid		
	12	0,701	0.000	Valid		
	13	0,631	0.000	Valid		
	14	0,676	0.000	Valid		
	15	0,698	0.000	Valid	0,698	Reliabel

Source: Data Processed With SPSS 27, 2025

Based on the table above, it can be seen that the results of the validity test for 108 respondents were able to conclude that all the statement items had an calculated r value > table and a p-value significance value smaller than 0.05, so that all the statement items could be used in this research (Valid). Cronbach's Alpha value is greater than 0.60, this means that all statement items are trustworthy (Reliable).

Normality Test Results

Table 4 Normality Test Result

One-Sample Kolmogorov-Smirnov Test

			Unstandardized Residual
N			108
Normal Parameters[a,b]	Mean		.0000000
	Std. Deviation		1.88345846
Most Extreme Differences	Absolute		.075
	Positive		.067
	Negative		-.075
Test Statistic			.075
Asymp. Sig. (2-tailed)[c]			.166
Monte Carlo Sig. (2-tailed)[d]	Sig.		.139
	99% Confidence Interval	Lower Bound	.130
		Upper Bound	.147

Source: Data Processed With SPSS 27, 2025

Based on the table above, the results of the normality test with the Kolmogorov-Smirnov test show a significance value of 0.139 or more than 0.05, which mean the data is normally distributed, and can proceed to the next test stage.

Multicollinearity Test Results

Table 5 Multicollinearity Test Result

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	7.249	2.581		2.809	.006		
	persepsi Kepecayaan	.193	.100	.155	1.943	.055	.975	1.025
	persepsi kemanan	.482	.070	.546	6.851	<,001	.975	1.025

a. Dependent Variable: Efisiensi Pengguaan QRIS

Source: Data Processed With SPSS 27, 2025

Based on the table above, the results of the multicollinearity test show a VIF value smaller than 10 and a tolerance value greater than 0.1. This shows that the regression model does not have multicollinearity symptoms or no correlation between independent variables is found, so the regression model is suittable for use and can be continued.

Heteroscedacity Test Results

Table 6 Heteroscedasity Test Result

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.841	1.791		1.586	.116
	persepsi Kepecayaan	.011	.070	.015	.156	.877
	x22	-.064	.046	-.135	-1.380	.170

a. Dependent Variable: ABS_RESS

Source: Data Processed With SPSS 27, 2025

The Variable of Trust Perception has a Sig value of 0.877 and Security Perception of 0.170 indicates a Sig value of > 0.05. Thus, it can be said that there are no symptoms of heteroscedaacity related to the regression model.

Multiple Linear Regression Analysis Results

Table 7 Multiple Linear Regression Analysis Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	7.249	2.581		2.809	.006
	persepsi Kepecayaan	.193	.100	.155	1.943	.055
	persepsi kemanan	.482	.070	.546	6.851	<,001

a. Dependent Variable: Efisiensi Pengguaan QRIS

Source: Data Processed With SPSS 27, 2025

$$Y= 7{,}249+0{,}100X1+0{,}070X2$$

a. The constant is 7.249 , this shows that if X1 and X2 are worth 0 aka the value of Y remains 7.294.
b. Based on variable X1, the results of the regression test show that variable X1 has a positive regression coefficient with a value of b = 0.100, meaning that if there is a increase in the value of variable X1 by 1 point, there will also be an increase in variable Y of 0.100.

Results of the analysis of the coefficient of determination (R2)

Table 8 coefficient of determination (R2)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.591[a]	.349	.337	1.901

a. Predictors: (Constant), persepsi kemanan, persepsi Kepecayaan

b. Dependent Variable: Efisiensi Pengguaan QRIS

Source: Data Processed With SPSS 27, 2025

Based on this table, in testing the results of the determenation coefficient, a customized R square value of 0.349 or 34.9% was obtained. It was proved that 34.9% of the overall contribution came from the perception of trust and the perception of security.

Test Results t

Table 9 Test Results t

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	7.249	2.581		2.809	.006
	persepsi Kepecayaan	.193	.100	.155	1.943	.055
	persepsi kemanan	.482	.070	.546	6.851	.000

a. Dependent Variable: Efisiensi Pengguaan QRIS

Source: Data Processed With SPSS 27, 2025

Based on this table, the partial significance test results of T obtained are:

a) The Trust Variable (X1) has a thitung value of 1.943 > ttable 1.982 with a significance value of 0.055 < 0.05, indicating that H1 is rejected.
b) The security variable (X2) has a thitung value of 6.851 > ttable 1.982 with a significance value of 0.000 < 0.05, indicating that H2 is accepted.

Test Results F

Table 10 Test Results F

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	203.417	2	101.709	28.135	.000[b]
	Residual	379.573	105	3.615		
	Total	582.991	107			

a. Dependent Variable: Efisiensi Pengguaan QRIS

b. Predictors: (Constant), persepsi kemanan, persepsi Kepecayaan

Source: Data Processed With SPSS 27, 2025

In the table above you can see that the F_{hitung} 28,135 > Ftable 3.08 with a significance value of 0.000 < 0.05, shows that H3 is accepted, meaning that simultaneously the variables of trust (X1) and safety (X2) have a significant influence on the efficiency of using QRIS (Y) in MSMEs in Karanganyar Regency.

4.2 Discussion

The Influence of Perception of Trust on the Efficiency of Using QRIS in Karanganyar Regency MSMEs

Based on the results of the t test that has been carried out, the confidence perception variable (X1) shows a thitung value of 1.943 with a significance level of 0.055. This significance value is greater than the significance limit of 0.05, so the first hypothesis (H1) which states that the perception of trust has a positive and significant effect on the efficiency of using QRIS in Karanganyar Regency MSMEs is rejected. These results indicate that although the perception of trust has a positive influence direction on the efficiency of QRIS use, this influence is not yet statistically strong enough to be declared significant. These findings indicate that the trust of MSMEs in the QRIS system has not been a major factor determining the level of efficiency of QRIS use in daily transaction activities. This can be attributed to the fact that most MSMEs use QRIS driven more by practical needs and market demands, rather than solely by a high level of trust in digital payment systems. Thus, trust still plays a role, but not as a dominant factor in increasing the efficiency of using QRIS in Karanganyar Regency.

The Influence of Security Perceptions on the Efficiency of Using QRIS in Karanganyar Regency MSMEs

The results of testing the second hypothesis (H2) showed that the perception of security (X2) had a thitung value of 6.851 with a significance level of 0.000, which is less than 0.05. Thus, it can be concluded that the perception of security has a positive and significant effect on the efficiency of using QRIS in Karanganyar Regency MSMEs, so that H2 is accepted. These findings indicate that the higher the level of security felt by MSME players in using QRIS, the higher the efficiency of using QRIS in the

transaction process. A sense of security regarding data protection, security of funds, and minimal risk of fraud make MSMEs feel more comfortable and confident in using QRIS sustainably. This condition has an impact on smooth transactions, time savings, and ease of operations, which ultimately increases business efficiency. Therefore, the perception of safety has been found to be an important and dominant factor in promoting the efficient use of QRIS in MSMEs.

The Influence of Trust Perceptions and Security Perceptions on the Efficiency of Using QRIS for Karanganyar Regency MSMEs

Based on the results of test F, a Fhitung value of 28.135 was obtained with a significance level of 0.000, which is smaller than 0.05. These results show that simultaneously the perception of trust (X1) and the perception of security (X2) significantly influence the efficiency of QRIS (Y) use, so the third hypothesis (H3) is accepted. These findings indicate that although partially the perception of trust does not have a significant effect, when combined with the perception of security, these two variables are jointly able to increase the efficiency of using QRIS in Karanganyar Regency MSMEs. This shows that the efficiency of using QRIS is not only influenced by one single factor, but rather by a combination of security and level of trust in digital payment systems. In addition, the value of the coefficient of determination (Adjusted R Square) of 34.9% indicates that the simultaneous perception of trust and perception of security is able to explain the variation in efficiency of QRIS use, while the rest is influenced by other factors outside this research model.

5. CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions

a. Perception of trust does not have a significant effect on the efficiency of using QRIS in MSMEs in Karanganyar Regency, even though it has a positive influence.
b. The perception of security has a positive and significant effect on the efficiency of using QRIS in MSMEs in Karanganyar Regency.
c. Simultaneous perceptions of trust and security perceptions have a significant influence on the efficiency of using QRIS in MSMEs in Karanganyar Regency.
d. The variables of confidence perception and security perception were able to explain 34.9% of the variation in efficiency of QRIS use, while the rest were influenced by other factors outside the study model.

5.2 Suggestions

a) MSME players are advised to continue to improve digital literacy and understanding of the use of QRIS in order to make more optimal use of digital payment systems and increase the efficiency of business transactions.
b) QRIS providers, such as banks and payment system service providers, are expected to continue to strengthen security systems and provide ongoing education regarding data protection and fund security in every transaction.
c) Regional governments and related agencies are advised to increase outreach, assistance and training in the use of QRIS for MSMEs to encourage wider and more efficient use of digital payments.
d) Researchers are further advised to add other variables that have the potential to influence the efficiency of using QRIS, such as ease of use, benefits and digital financial literacy, as well as expand the sample size and research area.

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