UNLOCKING THE QRIS IMPACT: AN ANALYSIS OF MOBILE PAYMENT AMONG MSMEs USING TECHNOLOGY ACCEPTANCE MODEL (TAM)

MEMBUKA DAMPAK QRIS: ANALISIS PEMBAYARAN SELULER UMKM MENGGUNAKAN TECHNOLOGY ACCEPTANCE MODEL (TAM)

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Abstract: The rapid digitalization of Indonesia's payment systems has introduced QRIS (Quick Response Code Indonesian Standard) to facilitate cashless transactions among Micro, Small, and Medium Enterprises (MSMEs). This study investigates QRIS acceptance among MSMEs in Manado, North Sulawesi, using the Technology Acceptance Model (TAM). Key factors: perceived usefulness, perceived ease of use, and attitude toward use, were analyzed for their impact on behavioral intention to adopt QRIS. Data from 100 MSMEs was analyzed with STATA 17 and SmartPLS 4 software. Findings reveal that perceived usefulness significantly influences attitude (path coefficient = 0.642, t-statistic = 5.832, p-value = 0.000), while perceived ease of use has a strong positive impact on attitude (path coefficient = 0.944, t-statistic = 105.206). The influence of perceived ease of use on perceived usefulness is weaker, suggesting external factors like experience and accessibility may affect this relationship. Attitude toward use significantly shapes the intention to adopt QRIS (path coefficient = 0.857, t-statistic = 33.542). The study underscores the role of user-friendly solutions in enhancing digital financial inclusion among MSMEs. Future research should consider factors like social influence and trust to deepen understanding of technology adoption across diverse users. This research contributes to mobile payment studies in developing economies, offering insights for policymakers and practitioners supporting MSME digitalization.

Keyword: QRIS, MSMEs, Mobile Payment, Technology Acceptance Model (TAM), Digital Payment Adoption.

Abstrak: Penelitian ini mengkaji penerimaan QRIS (Quick Response Code Indonesian Standard) oleh UMKM di Manado, Sulawesi Utara, menggunakan model TAM (Technology Acceptance Model). Faktor persepsi kegunaan, kemudahan penggunaan, dan sikap terhadap penggunaan dianalisis untuk melihat pengaruhnya terhadap niat perilaku mengadopsi QRIS. Berdasarkan analisis data 100 UMKM dengan STATA 17 dan SmartPLS 4, hasil menunjukkan persepsi kegunaan dan kemudahan penggunaan memiliki pengaruh signifikan pada sikap, yang selanjutnya berdampak kuat pada niat adopsi QRIS. Studi ini menyoroti pentingnya solusi yang ramah pengguna untuk mendukung inklusi keuangan digital UMKM. Penelitian lanjutan dapat memperhatikan faktor lain seperti pengaruh sosial dan kepercayaan demi pemahaman lebih mendalam.

Kata Kunci: QRIS, UMKM, Pembayaran Seluler, Model Penerimaan Teknologi, Adopsi Pembayaran Digital

INTRODUCTION

Research Background

The rapid digitalization in Indonesia has impacted sectors ranging from economics to security, with the government prioritizing digital transformation to boost economic recovery. According to the Indonesian Internet Service Providers Association (APJII) in 2024, 78.19% of Indonesia's 275.77 million population are internet users, highlighting the reach and economic potential of digital transformation, which the Financial Services

Authority (OJK) projects to contribute up to US\$360 billion by 2030.

Indonesia needs to balance leveraging the positive potential of digital technology with prudent financial management. In 2019, Bank Indonesia introduced QRIS (Quick Response Code Indonesian Standard) as a standardized QR code-based payment system to promote financial inclusion, particularly among MSMEs. Here's an improved version with refined grammar and formal language: According to data from Bank Indonesia North Sulawesi in August 2024, there are 288,718 traders in North Sulawesi supporting QRIS, with the highest concentration in Manado (123,568 traders) and significantly fewer in Bolaang Mongondow Raya. This data shows that there is still a gap in financial literacy as in the research results of Wardhani et al. (2023). Acceptance of QRIS can be seen from the perceived of usefulness and perceived ease of use which have a significant and positive effect on traders' intentions to use QRIS (Erlinda et al., 2023). Using the Technology Acceptance Model can use productivity analysis, risk management, effectiveness, and understanding of security protocols (Almajali et at., 2022).

MSMEs, which contribute 60.51% to GDP and employ almost 97% of the workforce, face digital adoption challenges, especially outside large urban areas such as Manado. MSMEs need to utilize mobile payment services for knowledge, privacy measures, and secure networks to build consumer trust (Bongomin et at., 2019). This research explores the adoption of QRIS among MSMEs in Manado, North Sulawesi using the Technology Acceptance Model (TAM) to identify factors that influence their engagement with this non-cash payment system. The findings from this research aim to support strategies to increase the integration of MSMEs into digital finance, thereby encouraging a more inclusive economy.

Research Objectives

- 1. To analyze the influence of perceived ease of use towards merchants' attitudes by using QRIS.
- 2. To analyze the influence of perceived of usefulness towards merchants' attitudes by using QRIS.
- 3. To analyze the influence of the perceived ease of use towards perceived of usefulness of merchants who use ORIS.
- 4. To analyze the influence of attitude towards merchants' behavioral intentions to use QRIS.

THEORETICAL FRAMEWORK

Payment System

A Payment System is a framework encompassing a set of rules, institutions, and mechanisms used to transfer funds to fulfill obligations arising from economic activities. The payment system comprises components such as regulators, operators, infrastructure, instruments, and users. The payment system involves three processing stages: authorization, clearing, and settlement (Ananda, 2022).

Table 1. Payment System

| Infrastructure | Channel | Instrument |
|----------------|--------------------------------------|-----------------------------------|
| GPN | Shared Delivery Channel (ATM dan | ATM Cards, Debit and Credit Cards |
| | EDC) | |
| SKNBI | Proprietary Channel (Mobile Banking) | Electronic Money |
| BI-RTGS | QR CODE | |

Source: Ananda (2024)

Mobile Payment

Mobile payment is a form of electronic payment service designed to streamline financial transactions. It involves business or individual activities utilizing digital mobile devices with internet connectivity to complete financial transactions (Muñoz-Leiva et al., 2017).

Financial Technology

Financial Technology, is a multidisciplinary field that merges finance, technology management, and innovation to enhance financial services through technological solutions. It fosters improvements in areas like payments, advisory services, financing, and regulatory compliance (RegTech), often creating new business models or transforming traditional ones (Leong et al., 2018)

Technology Acceptance Model

The Technology Acceptance Model (TAM) by Davis et al. (1989) explains technology adoption through two key factors: perceived usefulness (PU), or the belief that technology enhances performance, and perceived ease of use (PEOU), or how effortless it is to use. These perceptions drive users' intention to engage with technology, ultimately predicting actual usage.

Attitude Toward Using

Attitude Toward Using, as defined by Davis et. al. (1989), is an individual's positive or negative feelings about using a specific technology. It reflects the user's overall evaluation of the system, influenced by factors such as perceived usefulness and perceived ease of use, and it significantly impacts their intention to adopt or reject the technology.

Behavioral Intention to Use

Behavioral Intention to Use is the degree to which an individual intends to use a specific system in the future. It is a key predictor of actual technology usage, influenced by factors such as perceived usefulness and attitude toward using the system (Davis et al. 1989).

Empirical Studies

Deki et al. (2024) examines QRIS adoption in Semarang using the Technology Acceptance Model (TAM) with data from 100 respondents, analyzed through Structural Equation Modeling. Findings show that perceived usefulness (PU) and security (PS) positively impact actual use indirectly through behavioral intention (BIU), highlighting the importance of utility and security in users' intention to adopt QRIS, while ease of use (PEOU) has no significant effect. Behavioral intention fully mediates the relationship between PU and PS with actual use, indicating that emphasizing QRIS's usefulness and security could further encourage adoption.

Wardhani, Arkeman, and Ermawati (2023) found that QRIS adoption improves financial performance for Indonesian micro-enterprises by increasing transaction frequency, sales, and cash flow. Key adoption drivers include perceived ease of use, social influence, usefulness, and cost, while compatibility and trust were less influential.

Conceptual Framework

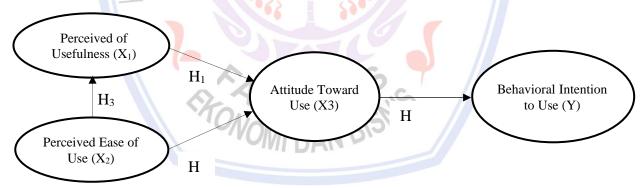


Figure 1. Conceptual Framework

Source: Literature Review

Research Hypothesis

- H₁: Perceived of Usefulness (PU) significantly impacts merchants' attitude to use (ATU) QRIS.
- H₂: Perceived Ease of Use (PEU) significantly impacts merchants' attitude to use (ATU) QRIS.
- H₃: Perceive Ease of Use (PEU) significantly impacts Perceived of Usefulness (PU) QRIS.
- H₄: Attitude Toward Using (ATU) positively and significantly impacts merchants Behavioral Intention (BI) to use QRIS..

RESEARCH METHOD

Research Approach

This research uses a quantitative approach, based on the philosophy of positivism, to examine populations or specific samples through numerical measurement and statistical analysis, enabling hypothesis testing and

drawing conclusions about variable relationships (Sugiyono, 2013).

Population, Sample, and Sample Technique

This study utilizes a non-probability sampling technique with an accidental sampling method. Sample selection is based on specific criteria, namely MSMEs that have actively used QRIS in the last month, understand mobile payments, and are located in Manado. The sample for this study consists of 100 respondents, in line with the research of Ghozali (2014) that using the Partial Least Squares (PLS) method requires a minimum sample size of 30 and a maximum of 100 respondents.

Data Collection Method

The researcher utilized primary data gathered through questionnaires, a technique involving the distribution of structured questions or statements to respondents. According to Sugiyono (2013), a rating scale is an instrument that employs numerical values to measure research variables, allowing respondents to indicate their level of agreement on a specific scale. This study employs a multiples choice questionnaire with a Likert scale ranging from 1 to 9, providing respondents with flexibility in their responses.

Operational Definition and Measurements of Research Variables

The variable in this research divided into variables, as follows:

Table 2. Operational Definition of Research Variables

| No | Variable | Definition | | Indicators |
|----|--------------------|--|-----|--|
| 1. | Perceived of | Perceived Usefulness refers to the tendency | 1. | QRIS helps speed up the transaction process |
| | Usefulness | of users to adopt digital transaction methods | | QRIS increases my business income |
| | (X1) | if they perceive that the system improves | 3. | QRIS provides a competitive advantage for |
| | | the efficiency and convenience of customer | | businesses |
| | | transactions within their MSMEs. | 4. | C |
| | | | 1 | terms of finance |
| | | WE Z | 5. | |
| | | | 6. | 8 8 |
| 2. | Perceived Ease | Perceived Ease of Use in the Technology | 1. | QRIS is easy to learn |
| | of Use (X2) | Acceptance Model refers to the extent to | | |
| | | which users feel that using digital payment | | QRIS is easy to use in daily business operations |
| | | technology, such as QRIS, is easy and does | 4. | Using and creating QRIS does not require large |
| | | not require a large effort. | 4 | efforts |
| | | 1 -500 | ٥. | The QRIS interface is designed to be intuitive and |
| | A 1 | Avii 1 m 1 III i di m 1 1 | | user-friendly |
| 3. | Attitude | Attitude Toward Using in the Technology | 1. | QRIS is a good decision of the business finances |
| | Towards Using (X3) | Acceptance Model refers to users' positive or negative evaluation of technology use, | ·Z. | The use of QRIS satisfies business operations and finances |
| | (A3) | which influences their intention to use | 3. | |
| | | QRIS as a digital payment. | 3. | transactions in business |
| | | QNIS as a digital payment. | 1 | QRIS provides digital transaction security in |
| | | | т. | business |
| | | | | ousiness |
| | | | | |
| 4. | Behavioral | Behavioral Intention is a situation where a | | QRIS will be used in the long term in business |
| | Intention to | person has a loyal attitude towards a service | 2. | Understanding of QRIS use will continue to be |
| | Use (Y) | of QRIS, and willingly recommends it to | | improved by employees |
| | | other people. Behavioral Intention is user | | |
| | | intention to continue using or increasing the | 4. | QRIS will be recommended for other traders |
| | | use of digital payment technology such as | | |
| | | QRIS, in the future. | | |
| | | | | |

Source: Data Processed (2024)

Testing of Research Instruments

The validity test, conducted at a 5% significance level, assessed whether questionnaire items accurately measured the intended constructs, items with an $r_{\text{count}} > r_{\text{table}}$ value of 0.196 were considered invalid and removed.

The reliability test, using the Cronbach's alpha coefficient, determined the consistency of the questionnaire, with values above 0.6 indicating reliable data.

Data Analysis

Test of Classical Assumption

The Classical Assumption Test is a statistical data evaluation conducted to ensure that the regression model meets the necessary requirements, thereby producing estimates and predictions that are accurate, unbiased, and consistent.

Normality Test

According to Ghozali (2016), a normality test is essential in regression analysis to check if the independent and dependent variables follow a normal distribution. The Shapiro-Wilk test can be used, where a Sig value < 0.05 indicates normal distribution, while a Sig value > 0.05 suggests the data is not normally distributed, potentially compromising the reliability of statistical results.

Heteroscedasticity Test

Ghozali (2016) explains that the heteroscedasticity test checks for varying residuals' variance in a regression model. A scatterplot of predicted values versus residual errors is used, where even distribution around zero indicates no heteroscedasticity. If the significance level is > 0.05, the model passes; if < 0.05, it fails, indicating heteroscedasticity.

Structural Equation Modeling (SEM) using Partial Least Squares (PLS)

This study uses the PLS-based SEM method, which involves analyzing both the measurement (outer) and structural (inner) models. The outer model identifies relationships between latent variables and their indicators, while the inner model examines relationships between latent variables based on hypotheses. Model evaluation includes assessing convergent validity (loading factors > 0.7), discriminant validity, and composite reliability for the outer model. The inner model is evaluated through R-squared values (close to 1 is better) and predictive relevance (Q2 > 0 indicates predictive ability). Hypothesis testing is conducted using the bootstrap T-test, with significant results accepted if the t-statistic > 1.96.

Outer Model (Measurement Model)

Convergent Validity: $Yi = \lambda i Xi + \epsilon i$

Inner Model (Structural Model)

Latent Variable Relationships: $Y = \beta X + \epsilon$

Hypothesis Testing Bootstrapping T-test

To test hypotheses regarding the significance of relationships between latent variables, the bootstrapping method is used to estimate standard errors and generate t-statistics. The t-statistic for a path coefficient is computed as:

$$t = \frac{\beta^{\wedge}}{SE(\beta^{\wedge})}$$

Description:

 $\beta^{=}$ Estimated path coefficient,

 $SE(\beta^{\wedge})$ = Standard error of the path coefficient.

RESULT AND DISCUSSION

Description of Research Respondents

Table 3. Respondents on Job Rules

| Table 5: Respondents on 305 Rules | | |
|-----------------------------------|----------|----------------|
| Job Roles | Quantity | Percentage (%) |
| Owner | 52 | 52% |
| Employees & Frontliners | 35 | 35% |
| Finance Team | 4 | 4% |
| Total | 100 | 100% |

Source: Data Processed (2024)

The majority of respondents, totaling 52, are business owners or leaders. In contrast, 35 respondents were regular employees who participated in the questionnaire, with 4 of them working specifically in the financial sector.

Table 4. Respondents on Type of Business

| Type of Business | Quantity | Percentage |
|------------------------------|----------|------------|
| Food and Beverages | 36 | 36% |
| Textile Industry and Fashion | 21 | 21% |
| Beauty Shop | 14 | 14% |
| Roadside Stall | 18 | 18% |
| Others | 11 | 11% |
| Total | 100 | 100% |

Source: Data Processed (2024)

The majority of respondents operate businesses in the Food and Beverages (F&B) sector, comprising 36 individuals or 36% of the total respondents. Additionally, 21 respondents are involved in the Textile Industry and Fashion, 18 operate Roadside Stalls, 14 manage Beauty Shops, and 11 are engaged in businesses other than those mentioned above.

Table 5. Respondent on Business Age

| Business Age | Quantity | Percentage |
|---------------------|----------------|------------|
| <1 year | 12 0 DAIN D'EN | 7% |
| 1-2 years | 9 | 9% |
| 3-4 years | 38 | 38% |
| >5 years | 46 | 46% |
| Total | 100 | 100% |

Source: Data Processed (2024)

The age of the business which explains how long this business has been operating. The majority of business age respondents are over 5 years old, with a total of 46 respondents. Apart from that, there are 7 businesses that have been operating for less than 1 year, 9 businesses have been operating for 1-2 years, and 38 businesses have been operating for 3-4 years.

Table 6. Respondent on Business Age

| Time of Use QRIS | Quantity | Percentage (%) |
|-------------------------------|--------------|----------------|
| < 1 Year | 34 | 34% |
| 2-3 Years | 48 | 48% |
| 4-5 Years | AKI 17 TH 19 | 17% |
| > 5 Years | TOUR | 1% |
| Total | 100 N B 13 | 100% |
| Source: Data Processed (2024) | ONI DAN | |

Source: Data Processed (2024)

Based on table 6, it shows how long the respondents' businesses have used QRIS. Since QRIS was launched on 17 August 2019, 48% of the total respondents have used it for 2-3 years, this is the majority in this classification. This was followed by 34 respondents who had used QRIS for less than 1 year.

Validity and Reliability Test **Table 7. Validity Test**

| VARIABLE | INDICATOR | PEARSON COR | SIG. VALUE | STATUS |
|----------------------------|-----------|-------------|------------|--------|
| Perceived Ease of Use (X1) | X1.1 | 0.9420 | 0.0000 | VALID |
| | X1.2 | 0.9466 | 0.0000 | VALID |
| | X1.3 | 0.9561 | 0.0000 | VALID |
| | X1.4 | 0.9652 | 0.0000 | VALID |
| | X1.5 | 0.9511 | 0.0000 | VALID |
| | X1.6 | 0.9608 | 0.0000 | VALID |

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|------------------------------|------|--------------------------|--------------------|----------------|
| Perceived of Usefulness (X2) | X2.1 | 0.9664 | 0.0000 | VALID |
| | X2.2 | 0.9513 | 0.0000 | VALID |
| | X2.3 | 0.9605 | 0.0000 | VALID |
| | X2.4 | 0.9648 | 0.0000 | VALID |
| | X2.5 | 0.9500 | 0.0000 | VALID |
| Attitude Towards Using (X3) | X3.1 | 0.9558 | 0.0000 | VALID |
| | X3.2 | 0.9537 | 0.0000 | VALID |
| | X3.3 | 0.9620 | 0.0000 | VALID |
| | X3.4 | 0.9611 | 0.0000 | VALID |
| | X3.5 | 0.9627 | 0.0000 | VALID |
| Behavioral Intention to Use | Y1 | 0.9173 | 0.0000 | VALID |
| (Y) | Y2 | 0.9181 | 0.0000 | VALID |
| | Y3 | 0.9454 | 0.0000 | VALID |
| | Y4 | 0.9363 | 0.0000 | VALID |

Source: Data processed, STATA 17 (2024)

From Table 4.7 it can be seen that each item has r count greater than r table, namely 0.196 (Level sig 5%) so that it can be stated that the item of the perceived ease of use (X1), perceived of usefulness (X2), attitude towards using (X3), and behavioral intention to use (Y) is valid.

Table 8. Reliability Test

| Variable | 16/211 | Cronbach's Alpha | 1300 | Status | |
|----------|---------|------------------|------|----------|--|
| X1 | 14.2 | 0.9833 | 1/10 | Reliable | |
| X2 | A. O. | 0.9815 | 0.4 | Reliable | |
| X3 | 15 47 A | 0.9816 | 7 | Reliable | |
| Y | 47 | 0.9510 | VZ. | Reliable | |

Source: Data processed, STATA 17 (2024)

Table 8 shows that the Cronbach's Alpha value of perceived ease of use (X1), perceived of usefulness (X2), attitude towards using (X3), and behavioral intention to use (Y) is greater than 0.6, so it can be declared adequate or reliable.

Classical Assumption Test Normality Test Table 9. Normality Test

Shapiro-Wilk W test for normal data

| Variable | 0bs | W | ٧ | Z | Prob>z |
|----------|-----|---------|-------|--------|---------|
| res | 100 | 0.99298 | 0.579 | -1.211 | 0.88697 |

Source: Data processed, STATA 17 (2024)

The Shapiro-Wilk Test in table 9 which shows a variable value of 0.88697>0.05 so it can be concluded that this data is normally distributed.

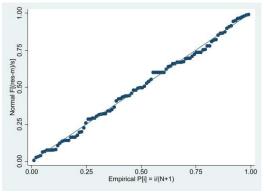


Figure 1. P-P Plot Normality Test Source: Data processed, STATA 17 (2024)

The figure illustrates that the data points are distributed around the diagonal line, with their dispersion closely following its trajectory. This alignment indicates that the regression model satisfies the normality assumption.

Heteroscedasticity Test

Figure 2. Heteroscedasticity Test

Breusch-Pagan/Cook-Weisberg test for heteroskedasticity

Assumption: Normal error terms Variable: Fitted values of y

H0: Constant variance

chi2(1) = 0.01Prob > chi2 = 0.9420

Source: Data processed, STATA 17 (2024)

The Breusch-Pagan/Cook-Weisberg test for heteroskedasticity indicate no significant evidence of heteroskedasticity in the regression model. The test yielded a chi-square statistic of 0.01 with an associated p-value of 0.9420, which is well above the common significance threshold of 0.05. Therefore, we fail to reject the null hypothesis of constant variance, suggesting that the assumption of homoskedasticity (constant error variance) is satisfied in the model.

Multiple Linear Regression Table 10. Multiple Linear Regression

| Source | SS | df | MS | | er of obs | = 100 = 94.07 |
|-------------------|--------------------------|-----------|------------------------|--------------------|--------------------------|----------------------|
| Model Residual | 531.250674 180.709326 | 3 96 | 177.08355 1.8823888 | 88 Prob 81 R-so | F quared R-squared | = 0.0000 = 0.7462 |
| Total | 711.96 | 99 | 7.1915151 | | : MSE | = 0.7382 = 1.372 |
| у | Coefficient | Std. err. | Ot C | P> t | [9 <mark>5% c</mark> on | f. interval] |
| x1 | .1905201 | .1792004 | 1.06 | 0.290 | 1651899 | .54623 |
| x2 | .2430876 | .152793 | 1.59 | 0.115 | 0602041 | .5463793 |
| x3 | .5075235 | .1496151 | 3.39 | 0.001 | .2105399 | .8045071 |
| _cons | .1835669 | .3321623 | 0.55 | 0.582 | 4757701 | .8429038 |

Source: Data processed, STATA 17 (2024)

The model explains a substantial portion of the variability in the dependent variable, with an R-squared of 0.9060 and an adjusted R-squared of 0.9030, suggesting a very good fit. The predictors x1, x2, and x3 showed statistically significant effects on the outcome, with x1 and x2 positively associated (coefficients: 2.4994, p < 0.000 and 3.2402, p < 0.000, respectively) and x3 negatively associated (coefficient: -1.1495, p < 0.000). The model's constant term was -2.8656, which was also statistically significant (p = 0.015), indicating the intercept value when all predictors are zero.

SEM-PLS

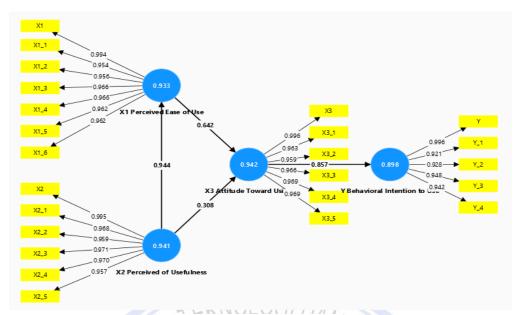


Figure 3. SEM-PLS Result
Source: SMART PLS 4, Processed 2024

The R-Square (R²) values indicate that the model has strong explanatory power. Attitude Toward Use (X3) has an R² of 0.942, meaning that 94.2% of its variability is explained by Perceived Ease of Use and Perceived Usefulness, reflecting a very well-fitting model. Similarly, Behavioral Intention to Use (Y) has an R² of 0.898, showing that 89.8% of its variability is explained by Attitude Toward Use, which demonstrates a highly robust model.

Bootstrapping SEM-PLS

Table 11. Bootstrapping SEM-PLS

| | Original sample (O) | Sample mean (M) | Standard deviation (STDEV) | T statistics (O/STDEV) | P values | STATUS |
|----|---------------------|-----------------|----------------------------------|--------------------------|----------|----------|
| H1 | 0.642 | 0.633 | 0.110 | 5.832 | 0.000 | Accepted |
| H2 | 0.944 | 0.945 | 0.009 | 105.206 | 0.000 | Accepted |
| Н3 | 0.308 | 0.317 | 0.110 | 2.801 | 0.005 | Rejected |
| H4 | 0.857 | 0.859 | 0.026 | 33.542 | 0.000 | Accepted |

From the result in the table, the explanation of the equation:

- 1. A path coefficient of 0.642, t-statistic of 5.832, and p-value of 0.000, indicating a significant and moderate effect. This supports that higher perceived usefulness improves users' attitudes toward using the technology.
- 2. A strong path coefficient of 0.944, t-statistic of 105.206, and p-value of 0.000, confirming a significant effect. This suggests that ease of use boosts users' attitudes toward using the technology.
- 3. Perceived Ease of Use positively affects Perceived Usefulness with a path coefficient of 0.308, t-statistic of 2.801, and p-value of 0.005, but the relationship is weak. The influence is less substantial, and further factors may affect perceived usefulness.
- 4. Attitude Toward Using positively affects Behavioral Intention to Use with a path coefficient of 0.857, t-statistic of 33.542, and p-value of 0.000, indicating a strong, significant effect. Positive attitudes strongly influence users' intentions to use the technology.

Discussion

Perceived of Usefulness on Attitude Towards Using

The SEM-PLS analysis reveals a strong positive relationship between Perceived Usefulness (PU) and Attitude Toward Use (ATU). This confirms that as users perceive technology as more useful, their attitude toward adopting it improves. Studies by Yan et al. (2020), and Tew et al. (2022) support this, showing that PU significantly influences attitudes toward technology adoption. Kusumayanti (2023) also found that QRIS benefits,

such as reducing transaction costs and improving financial recording, enhance its appeal to MSMEs. The system's ease of use, interoperability, and ability to improve financial management and professional image further boost its perceived usefulness, encouraging adoption among small businesses.

Perceived Ease of Use on Attitude Towards Using

The analysis shows that Perceived Ease of Use (PEOU) significantly influences Attitude Toward Using QRIS. Research by Leong (2021), Prihatini (2021), and Dasgupta (2022) confirms that ease of use positively impacts attitudes toward QRIS adoption. QRIS is designed to be user-friendly, with features like simple transactions, easy access, and intuitive functionality, making it accessible even to MSMEs with limited digital experience. This ease of use helps businesses integrate QRIS into daily operations, fostering a positive attitude toward its adoption and contributing to financial efficiency and inclusiveness in Indonesia's digital payment system.

Perceived Ease of Use on Perceive of Usefulness

The analysis reveals that Perceived Ease of Use (PEOU) has a statistically significant but weak positive effect on Perceived Usefulness (PU) with a path coefficient of 0.308. This suggests that while ease of use contributes to the perceived effectiveness of QRIS, external factors like user experience, social influence, and contextual challenges may play a more significant role. Research by Deki et al. (2024) and Erlinda et al. (2023) supports this, emphasizing that PEOU influences QRIS adoption indirectly through behavioral intention. The weak relationship in this study may be due to factors such as limited digital literacy, lack of supportive devices, and insufficient training or infrastructure.

Attitude Toward Using on Behavioral Intention to Use

The study confirms that Attitude Toward Using significantly influences Behavioral Intention to Use QRIS among MSMEs in Manado. A positive attitude toward using QRIS enhances the intention to adopt and integrate the technology into business operations. Wardhani et al. (2023) also supports this, noting that positive user attitudes facilitate technology adoption in developing countries. The study shows that MSMEs with a favorable perception of QRIS are more likely to adopt it long-term, influencing both business practices and customer preferences for digital payments. Therefore, a positive attitude towards QRIS is crucial in fostering its continued use and expanding adoption among MSMEs in the region.

CONCLUSION AND RECOMMENDATION

Conclusion

Conclusions are drawn based on the results of this research are as follows:

- 1. The user-friendly design of QRIS, with its simple interface and fast transaction process, significantly influences merchants to adopt it for digital payments.
- 2. The perceived usefulness of QRIS, such as lower transaction costs and improved financial management, drives its adoption among merchants.
- 3. While Perceived Ease of Use and Perceived Usefulness are important, external factors like market demand and system compatibility play a more significant role in QRIS adoption, suggesting the need to adapt the TAM framework.

Recommendation

- 1. Based on the findings from the study, it is evident that while a majority of respondents are aware of digital payment systems and QRIS, a national QR code designed to streamline transactions, a significant number have yet to adopt QRIS as their preferred digital payment method. This discrepancy may stem from inadequate socialization efforts by Bank Indonesia, resulting in limited public knowledge of QRIS. The recommendation for Bank Indonesia, as the financial regulator, is to intensify its efforts to promote QRIS more broadly to enhance public awareness and understanding. This could encourage more merchants to appreciate the benefits of QRIS for their businesses and further advance the non-cash movement in the future.
- 2. For merchants still reliant on cash transactions, it is advisable to consider adopting QRIS as their digital payment method. QRIS offers low risk, ease of use, and the potential to conduct transactions more quickly and efficiently. Embracing QRIS could not only streamline their operational processes but also align them with contemporary digital payment trends, benefiting both their business operations and customer experience.

3. Future research should explore additional variables such as Perceived Usefulness or Subjective Norms among QRIS users. Subjective Norms, which reflect the perceived social pressures within a user's environment, would be particularly interesting to investigate for their impact on the Intention to Use.

REFERENCES

- Almajali, D., Al-Okaily, M., Al-Daoud, K., Weshah, S., & Shaikh, A. A. (2022). Go Cashless!: Mobile Payment Apps Acceptance in Developing Countries: The Jordanian Context Perspective. *Sustainability*, 14(20), Article 13524. https://doi.org/10.3390/su142013524
- Ananda, M. A. (2022). Elektronifikasi Transaksi Pembayaran Pemerintahan Daerah. *Jurnal Administrasi Bisnis STIAPEN*, *I*(1), 38-48.
- Dasgupta, S., Granger, M., & McGarry, N. (2022). User Acceptance of E-Collaboration Technology: An Extension of the Technology Acceptance Model. *Group Decision and Negotiation*, 11, 87-100. DOI: 10.1023/A:1015221710638
- Davis, F. D. (1989). Technology acceptance model: TAM. Al-Suqri, MN, Al-Aufi, AS: *Information Seeking Behavior and Technology Adoption*, 205, 219. DOI: 10.4018/978-1-4666-8156-9.ch013
- Deki, Nur, Fitrian., Widayanto., Hari, Susanta, Nugraha. (2024). 1. Acceptance analysis of payment system Quick Response Code Indonesian Standard (QRIS) using technology acceptance model. *World Journal Of Advanced Research and Reviews*, DOI: 10.30574/wjarr.2024.23.2.2292
- Ghozali, I. (2018). *Aplikasi Analisis Multivariate Dengan Program IBM SPSS 25*. Badan Penerbit Universitas Diponegoro. ISBN/ISSN 979-704-015-1
- Leong, K., & Sung, A. (2018). FinTech (Financial Technology): what is it and how to use technologies to create business value in fintech way?. *International journal of innovation, management and technology*, 9(2), 74-78. DOI: 10.18178/ijimt.2018.9.2.791
- Muñoz-Leiva, F., Climent-Climent, S., & Liébana-Cabanillas, F. (2017). Determinants of intention to use the mobile banking apps: An extension of the classic TAM model. *Spanish Journal of Marketing* ESIC, 21(1), 25–38. DOI: 10.1016/j.sjme.2016.12.001
- Patil, P., Tamilmani, K., Rana, N., & Raghavan, V. (2020). Understanding consumer adoption of mobile payment in India: Extending Meta-UTAUT model with personal innovativeness, anxiety, trust, and grievance redressal. *Int. J. Inf. Manag.*, 54, 102144. DOI: 10.1016/j.ijinfomgt.2020.102144
- Prihatini, D., Wirratih, H., Havidz, I., Havidz, S., & Aima, M. (2021). Determinants of Intention to use Mobile Payment: an Empirical Study of MSMEs in Indonesia by the Millennial Actors. 2021 3rd International Conference on Cybernetics and Intelligent System (ICORIS), 1-4. DOI: 10.1109/ICORIS52787.2021.9649485
- Sugiyono. (2013). *Quantitative, Qualitative, Research Methods and Research and Development*. Bandung: Alphabeta. ISBN/ISSN 979-8433-71-8
- Tew, H. T., Tan, G. W. H., Loh, X. M., Lee, V. H., Lim, W. L., & Ooi, K. B. (2022). Tapping the Next Purchase: Embracing the Wave of Mobile Payment. *Journal of Computer Information Systems*. DOI: 10.1080/08874417.2020.1858731
- Wardhani, R., Arkeman, Y., & Ermawati, W. (2023). The Impact of Quick Response Adoption of Payment Code on MSMEs' Financial Performance in Indonesia. *International Journal of Social Service and Research*. DOI: https://doi.org/10.46799/ijssr.v3i3.294