

The Influence of Consumer Satisfaction, Payment Efficiency, and Risk on QRIS Usage Among the Community of Boyolali Regency

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Abstract

The Indonesian Standard Quick Response Code (QRIS) plays a pivotal role in accelerating the digitalization of national payment systems. As a novel payment technology, the sustained adoption of QRIS depends on whether users experience satisfaction, perceive the system as efficient, and consider the associated risks to be manageable. This study investigates the extent to which consumer satisfaction, payment efficiency, and risk influence the intention to continuously use QRIS. A quantitative approach was employed using a Likert-scale questionnaire administered through purposive sampling to 100 respondents drawn from the population of Boyolali Regency residents aged 17 years and above who had used QRIS for a minimum of three months. Sample size was determined using the Slovin formula, and data were analyzed using SPSS 25 through validity and reliability tests, classical assumption tests, multiple linear regression, and hypothesis testing (partial and simultaneous). The results reveal that consumer satisfaction ($\beta = 0.330$, $p = 0.004$) and risk ($\beta = 0.304$, $p = 0.017$) have a positive and significant effect on QRIS usage, while payment efficiency ($\beta = -0.096$, $p = 0.485$) does not significantly influence QRIS adoption. Simultaneously, the three independent variables significantly affect QRIS usage ($F = 15.929$, $p < 0.001$), with an Adjusted R Square of 0.311, indicating that 31.1% of the variance in QRIS usage is explained by the model. These findings suggest that enhancing user satisfaction and reducing perceived risk are critical strategies for promoting sustained QRIS adoption.

Keywords: *Consumer Satisfaction; Payment Efficiency; Risk; QRIS*

1. INTRODUCTION

The rapid advancement of information technology in the digital era has driven significant transformation across various sectors, particularly in the financial industry through the emergence of *financial technology (fintech)* services. The integration of fintech has simplified and accelerated financial inclusion while stimulating digital economic growth. As noted by Hutagalung et al. (2021), the current digital era compels society to adopt various forms of communication and information technology. The proliferation of digital platforms has fundamentally shifted traditional face-to-face transactions toward technology-mediated online interactions. Among the fastest-growing fintech segments are electronic money (e-money), mobile banking, and electronic wallets (e-wallet) (Amanda et al., 2025).

One of the most prominent electronic payment methods gaining widespread adoption is the *Quick Response Code Indonesian Standard (QRIS)*. This technology consolidates various electronic payment methods into a single matrix code, allowing individuals to complete transactions through any compatible mobile payment application. According to Mukhtisar et al. (2020), individuals tend to engage with technology they find personally satisfying and convenient. Bank Indonesia developed QRIS as a unified QR code standard, enabling seamless acceptance across multiple e-wallets and payment applications, thereby enhancing financial

inclusion particularly among communities in remote areas with limited access to conventional banking services (Kusnandar et al., 2024).

Transaction data from the Indonesian Payment System Association (ASPI) demonstrates the remarkable growth trajectory of QRIS. QRIS transaction volume increased by 148.5% from Q2 2024 to Q2 2025, and by 31.01% from Q1 2025 to Q2 2025, underscoring the instrument's growing acceptance among the Indonesian population. Consumer satisfaction has been identified as a primary determinant of this growth. According to Indriani et al. (2023), consumer satisfaction reflects the degree to which a product or service meets or exceeds user expectations, generating feelings of contentment or disappointment following its use.

Payment efficiency is another critical factor influencing technology adoption decisions. Atmaja and Paulus (2022) assert that ensuring a smooth payment system has become an indispensable requirement in today's rapidly evolving digital technology landscape. However, alongside efficiency considerations, risk perception also plays a decisive role. Shellla et al. (2025) note that some users remain hesitant to transition to digital systems due to concerns about complex usage procedures and longer transaction durations compared to cash payments. Furthermore, limited understanding of non-cash transactions and inadequate financial protection heighten concerns over potential misuse by irresponsible parties (Kamilah & Haryati, 2024).

This study examines the extent to which digital payment technology—specifically QRIS—is adopted by the community, using consumer satisfaction, payment efficiency, and risk as key measurement variables. Boyolali Regency was selected as the research location due to its rapid MSME growth and swift digital transition, making it a relevant context for examining whether sustained digital payment adoption through QRIS can be effectively established.

2. LITERATURE REVIEW

Consumer Satisfaction

Consumer satisfaction is defined as a person's emotional state resulting from comparing the performance of a product or service against their prior expectations (Indriani et al., 2023). In the context of digital payments, satisfaction is primarily driven by ease of use, transaction speed, and system reliability. Users who experience satisfaction with QRIS are more likely to continue using it and recommend it to others (Dewanti et al., 2025). The relationship between consumer satisfaction and continued technology usage aligns with the Expectation-Confirmation Model (ECM), which posits that satisfaction—resulting from confirmed expectations—is a key predictor of continuance intention.

Payment Efficiency

Payment efficiency refers to the ability of a payment system to minimize time, cost, and effort required to complete transactions (Atmaja & Paulus, 2022). An efficient payment system reduces transaction friction and enhances the overall user experience. However, efficiency can be undermined by infrastructure limitations, network instability, and compatibility issues with older mobile devices, all of which may reduce the perceived efficiency of QRIS in certain contexts (Irvianti et al., 2023).

Risk

Perceived risk in digital payment adoption encompasses concerns related to financial security, data privacy, and transaction reliability (Kamilah & Haryati, 2024). Alfani and Ariani (2023) found that risk perceptions significantly influence consumers' decisions to adopt digital payment instruments. When users perceive that QRIS transactions are secure, their data is protected, and transactions consistently succeed, their willingness to use the system increases. Conversely, high risk perceptions create barriers to adoption and sustained usage.

Research Hypotheses

Based on the theoretical framework above, the following hypotheses are proposed:

1. **H1:** Consumer satisfaction has a significant effect on QRIS usage.
2. **H2:** Payment efficiency has a significant effect on QRIS usage.
3. **H3:** Risk has a significant effect on QRIS usage.

3. RESEARCH METHODS

Research Design

This study employs a quantitative research approach using a survey method. Quantitative research was selected because it enables systematic, objective measurement of relationships between variables through numerical data analysis (Creswell, 2017). Primary data were collected via a structured questionnaire distributed through Google Forms.

Population and Sample

The research population comprised all residents of Boyolali Regency aged 17 years and above who had used QRIS, totaling 844,750 individuals. Purposive sampling was employed, with the following criteria: (1) residents domiciled in Boyolali Regency, and (2) had actively used QRIS for a minimum of three months. Sample size was determined using the Slovin formula, yielding a minimum of 100 respondents.

Measurement

All variables were measured using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The operationalization of variables is presented in Table 1 below.

Table 1. Operational Definition of Variables

Variable	Operational Definition	Indicators
Consumer Satisfaction (X1)	User's evaluation of QRIS performance relative to expectations	Ease of transaction, service quality, overall satisfaction, usage comfort, intent to recommend
Payment Efficiency (X2)	Degree to which QRIS minimizes time, cost, and effort	Transaction speed, cost savings, convenience, accessibility, process simplicity
Risk (X3)	Perception of potential negative outcomes associated with QRIS use	Security risk, privacy risk, transaction failure risk, financial loss risk
QRIS Usage (Y)	Intention and actual behavior of continuously using QRIS	Frequency of use, intention to continue, preference over cash, recommendation to others

Source: Authors' Compilation, 2026

Data Analysis

Data were analyzed using IBM SPSS Statistics version 25 through the following sequential procedures: (1) data quality tests—validity (Spearman's Rho correlation) and reliability (Cronbach's Alpha); (2) classical assumption tests—normality (One-Sample Kolmogorov-Smirnov), multicollinearity (Tolerance and VIF), and heteroscedasticity; (3) multiple linear regression analysis; (4) partial hypothesis testing (t-test); (5) simultaneous hypothesis testing (F-test); and (6) coefficient of determination (Adjusted R²). The regression equation used is as follows:

$$PQ = a + b_1X_1 + b_2X_2 + b_3X_3 + e$$

Where PQ = QRIS Usage; X_1 = Consumer Satisfaction; X_2 = Payment Efficiency; X_3 = Risk; a = constant; b_1, b_2, b_3 = regression coefficients; e = error term.

4. RESULTS AND DISCUSSION

4.1 Data Quality Tests

Validity Test

Validity was assessed using the Spearman's Rho correlation method with a significance level of $\alpha = 0.05$ and $df = 100 - 2 = 98$, yielding a critical r-table value of 0.1654. Items with r-calculated values exceeding 0.1654 are considered valid. As presented in Table 2, all items across the four variables exceeded this threshold, confirming that all measurement items are valid.

Table 2. Validity Test Results

No.	Variable	Item	r-calculated	r-table	Result
1	Consumer Satisfaction	Item 1	0.709	0.1654	Valid
		Item 2	0.816	0.1654	Valid
		Item 3	0.729	0.1654	Valid
		Item 4	0.744	0.1654	Valid
		Item 5	0.678	0.1654	Valid
2	Payment Efficiency	Item 1	0.680	0.1654	Valid
		Item 2	0.564	0.1654	Valid
		Item 3	0.544	0.1654	Valid
		Item 4	0.695	0.1654	Valid
		Item 5	0.804	0.1654	Valid
3	Risk	Item 1	0.804	0.1654	Valid
		Item 2	0.779	0.1654	Valid
		Item 3	0.623	0.1654	Valid
		Item 4	0.771	0.1654	Valid
4	QRIS Usage	Item 1	0.731	0.1654	Valid
		Item 2	0.758	0.1654	Valid
		Item 3	0.789	0.1654	Valid
		Item 4	0.824	0.1654	Valid

Source: Authors' Data Processing, SPSS 25, 2026

Reliability Test

Reliability was evaluated using Cronbach's Alpha, with a threshold of $\alpha \geq 0.6$ indicating acceptable reliability. Table 3 shows that all four variables exceeded this threshold, confirming the internal consistency and reliability of the measurement instruments.

Table 3. Reliability Test Results

No.	Variable	Cronbach's Alpha	Result
1	Consumer Satisfaction (X1)	0.785	Reliable
2	Payment Efficiency (X2)	0.604	Reliable
3	Risk (X3)	0.733	Reliable
4	QRIS Usage (Y)	0.772	Reliable

Source: Authors' Data Processing, SPSS 25, 2026

4.2 Classical Assumption Tests

Normality Test

The One-Sample Kolmogorov-Smirnov test was conducted to examine the normality of residuals. As shown in Table 4, the Asymptotic Significance value of 0.066 exceeds the 0.05 significance threshold, indicating that the residuals are normally distributed and the normality assumption is satisfied.

Table 4. Normality Test — One-Sample Kolmogorov-Smirnov

Parameter	Value
N	100
Mean	0.0000000
Std. Deviation	1.61133869
Absolute (Most Extreme Differences)	0.086
Positive	0.055
Negative	-0.086
Test Statistic	0.086
Asymp. Sig. (2-tailed)	0.066

Source: Authors' Data Processing, SPSS 25, 2026

Multicollinearity Test

Multicollinearity was assessed using Tolerance and Variance Inflation Factor (VIF) values. The results in Table 5 indicate that all independent variables have Tolerance values above 0.1 and VIF values below 10, confirming the absence of multicollinearity among the predictors.

Table 5. Multicollinearity Test Results

Variable	Tolerance	VIF
Consumer Satisfaction (X1)	0.394	2.538
Payment Efficiency (X2)	0.360	2.775
Risk (X3)	0.408	2.452

Source: Authors' Data Processing, SPSS 25, 2026

4.3 Multiple Linear Regression

The results of the multiple linear regression analysis are presented in Table 6. The regression equation derived from these results is:

$$PQ = 6.920 + 0.330X_1 - 0.096X_2 + 0.304X_3 + e$$

Table 6. Multiple Linear Regression Analysis

Variable	Coefficient (B)	t-statistic	Sig.
Constant	6.920	—	—
Consumer Satisfaction (X1)	0.330	2.912	0.004
Payment Efficiency (X2)	-0.096	-0.701	0.485
Risk (X3)	0.304	2.440	0.017

Source: Authors' Data Processing, SPSS 25, 2026

The constant value of 6.920 indicates that when all independent variables are held at zero, the predicted value of QRIS usage is 6.920. The regression coefficient of consumer satisfaction ($X_1 = 0.330$) implies that a one-unit increase in consumer satisfaction corresponds to a 0.330 increase in QRIS usage, holding other variables constant. The negative coefficient for payment efficiency ($X_2 = -0.096$) suggests a marginal inverse relationship, though this finding is statistically insignificant. The coefficient for risk ($X_3 = 0.304$) indicates that a one-unit increase in (positive) risk perception—interpreted as lower perceived risk—is associated with a 0.304 increase in QRIS usage.

4.4 Hypothesis Testing

Partial Test (t-test)

Table 7. Partial Hypothesis Test (t-test) Results

Variable	t-calculated	t-table	Sig.	Decision
Consumer Satisfaction (X1)	2.912	1.660	0.004	H1 Accepted
Payment Efficiency (X2)	-0.701	1.660	0.485	H2 Rejected
Risk (X3)	2.440	1.660	0.017	H3 Accepted

Source: Authors' Data Processing, SPSS 25, 2026

Simultaneous Test (F-test)

Table 8. Simultaneous Hypothesis Test (F-test) Results

Variable	F-calculated	F-table	Sig.
X1, X2, X3 → QRIS Usage (Y)	15.929	2.70	0.000

Source: Authors' Data Processing, SPSS 25, 2026

The F-test results indicate that F-calculated (15.929) exceeds F-table (2.70) with a significance value of $0.000 < 0.05$. This confirms that consumer satisfaction (X1), payment efficiency (X2), and risk (X3) simultaneously exert a significant effect on QRIS usage (Y).

Coefficient of Determination

Table 9. Coefficient of Determination (R²)

Model	R	R Square	Adjusted R Square
1	0.576	0.332	0.311

Source: Authors' Data Processing, SPSS 25, 2026

The Adjusted R Square value of 0.311 indicates that 31.1% of the variance in QRIS usage is explained by the three independent variables (consumer satisfaction, payment efficiency, and risk), while the remaining 68.9% is attributed to other factors beyond the scope of this model.

4.5 Discussion

Effect of Consumer Satisfaction on QRIS Usage

The partial t-test results confirm that consumer satisfaction (X1) has a positive and statistically significant effect on QRIS usage, with t-calculated (2.912) > t-table (1.660) and $p = 0.004 < 0.05$; therefore, H1 is accepted. This finding aligns with prior studies demonstrating that convenience in conducting transactions is the primary driver of consumer satisfaction (Dewanti et al., 2025). Users who are satisfied with QRIS are more likely to engage in repeat usage, thereby reinforcing their loyalty to digital payment platforms (Isra et al., 2024). The unified nature of QRIS—accepting payments from multiple e-wallets through a single QR code—substantially enhances user convenience and, consequently, satisfaction.

Effect of Payment Efficiency on QRIS Usage

The partial t-test results indicate that payment efficiency (X2) does not have a significant effect on QRIS usage, with t-calculated (-0.701) < t-table (1.660) and $p = 0.485 > 0.05$; therefore, H2 is rejected. This outcome is consistent with previous research findings (Afandi et al., 2022; Irvianti et al., 2023), which identified that network instability in certain areas causes transaction failures during QR code scanning, undermining perceptions of efficiency. Additionally, compatibility limitations of older smartphones reduce the speed of digital payment processes, making QRIS appear less efficient compared to cash transactions. Some users also remain more comfortable with traditional cash-based methods, further diminishing efficiency perceptions.

Effect of Risk on QRIS Usage

The partial t-test results demonstrate that risk (X3) has a positive and statistically significant effect on QRIS usage, with t-calculated (2.440) > t-table (1.660) and $p = 0.017 < 0.05$; therefore, H3 is accepted. This finding is consistent with prior studies (Putri et al., 2023; Alfani & Ariani, 2023), which found that when consumers

perceive minimal threats to balance security, data confidentiality, and transaction reliability, their confidence in using QRIS increases. The positive direction of the coefficient suggests that users who perceive QRIS as a low-risk payment instrument are more inclined to use it continuously. Therefore, QRIS service providers must continually work to mitigate consumer risk concerns through robust security mechanisms and transparent communication.

5. CONCLUSION AND SUGGESTIONS

Conclusion

This study concludes that consumer satisfaction and risk have a positive and statistically significant effect on the sustained intention to use QRIS among the community of Boyolali Regency. These findings indicate that the residents of Boyolali Regency are willing to continue using QRIS because they perceive it as a beneficial and low-risk digital payment technology. In contrast, payment efficiency does not significantly influence QRIS usage intention, suggesting that the current technological infrastructure and user familiarity have not yet reached a level that makes efficiency a decisive adoption factor. Simultaneously, the three independent variables collectively explain 31.1% of the variance in QRIS usage (Adjusted $R^2 = 0.311$), indicating that additional variables warrant exploration in future research.

Suggestions

For future research, it is recommended to incorporate additional variables not examined in this study—such as trust, digital literacy, or perceived usefulness—to achieve a more comprehensive understanding of the determinants of QRIS adoption. Furthermore, researchers are encouraged to broaden the study population by including diverse geographic settings and demographic groups, which would enhance the generalizability and representativeness of the findings. Service providers and policymakers should focus on improving network infrastructure and user education to strengthen perceived payment efficiency and reduce risk concerns, particularly in underserved areas.

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