The Influence Of Ease Of Use And Transaction Security On Transaction Satisfaction Through The Intensity Of Qris (Quick Response Indonesian Standard) Usage Among Students Of The Faculty Of Economics And Business, State University Of Jakarta

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Abstract. This study aims to analyze the influence of ease of use and transaction security on transaction satisfaction through the intensity of QRIS usage among students of the Faculty of Economics and Business at Universitas Negeri Jakarta. As digital financial technology advances, QRIS (Quick Response Code Indonesian Standard) has emerged as a practical and efficient payment system widely adopted in academic environments. The research employed a quantitative approach using Structural Equation Modeling (SEM) with SmartPLS 4 and collected data from 112 respondents. The results reveal that ease of use significantly affects both usage intensity ($\beta = 0.608$; $p < 0.001$) and transaction satisfaction ($\beta = 0.586$; $p < 0.001$), while transaction security significantly influences usage intensity ($\beta = 0.292$; $p = 0.002$) but does not significantly affect satisfaction ($\beta = 0.051$; $p = 0.689$). Interestingly, transaction satisfaction does not significantly mediate the relationship between ease of use or security and usage intensity. The findings indicate that students are more driven to use QRIS frequently due to its practical and secure nature rather than emotional satisfaction. This research contributes to understanding user behavior in digital payments and provides strategic recommendations for improving QRIS adoption among youth.

Keywords: QRIS, ease of use, transaction security, transaction satisfaction, usage intensity, digital payments, university students.

Introduction

The rapid advancement of digital technology has fundamentally reshaped various sectors, including the financial industry. Financial Technology (FinTech) represents a transformative force by integrating technological innovation into financial services, enabling faster, more efficient, and contactless transactions. One such innovation is the use of QR Code-based payments, which has become a popular method in many countries due to its practicality and user-friendliness (Zhao & Bacao, 2021)

In Indonesia, the central bank, Bank Indonesia, introduced the Quick Response Code Indonesian Standard (QRIS) in 2019 to unify the fragmented QR Code payment systems into a single, interoperable standard. QRIS enables consumers to make digital payments across different merchants using various applications, aiming to enhance financial inclusion and support the digital economy (Bank Indonesia, 2020). However, while QRIS is growing in popularity, especially among urban youth, its effective adoption still faces challenges in infrastructure, literacy, and perception of security.

Among university students, QRIS adoption has gained traction due to its convenience in facilitating daily transactions without the need for cash. Preliminary survey results from FEB UNJ students indicated that approximately 80% of daily transactions are now conducted using QRIS. Students cited practicality, speed, and the elimination of the need for small change as primary motivations for adoption. This aligns with previous findings by (Kim et al., 2010), who emphasized that ease of use and perceived benefits play a significant role in influencing mobile payment behavior.

Despite its perceived benefits, QRIS adoption is not without obstacles. Users have reported issues such as unstable internet connections and difficulties scanning QR codes during payment. These practical barriers can hinder the user experience and affect overall satisfaction. Prior research by (Venkatesh et al., 2012) through the UTAUT2 model suggests that technology adoption is influenced not only by performance and effort expectancy but also by environmental and contextual factors.

Several studies have explored the relationships between ease of use, transaction security, and user satisfaction (Davis et al., 2003) found that ease of use significantly predicts user satisfaction in digital payment systems. Similarly, (Widyastuti & Anggraeni, 2021) showed that QRIS users in Indonesia report higher satisfaction when the system is perceived as simple and secure. However, other studies such as (Kusuma & Prasetyo, 2022) and (Rahi & Abd. Ghani, 2019) highlight that security alone does not always lead to greater satisfaction unless accompanied by trust and system quality.

Given the mixed results in previous research, this study aims to examine the influence of ease of use and transaction security on transaction satisfaction, with a specific focus on the mediating role of QRIS usage intensity among FEB UNJ students. By understanding these relationships, this research seeks to provide practical recommendations for QRIS service providers and university stakeholders to enhance digital payment adoption and student satisfaction in higher education contexts.

Literatur Review

Ease of Use

Ease of use serves as a determinant factor in digital payment technology adoption, significantly influencing user perceptions and behaviors toward electronic payment systems. This concept extends beyond mere technical operational aspects, encompassing broader dimensions such as ease of accessing digital payment applications or systems, clear and structured navigation, comprehensible instructions or information, intuitive interface design, and speed and smoothness of transaction processes. A comprehensive understanding of the ease of use construct is crucial in designing and optimizing user-friendly digital payment systems, as ease of use functions as a primary predictor of technology adoption levels and user satisfaction in digital financial service contexts.

Transaction Security

Transaction security represents a fundamental pillar in digital payment ecosystems, serving as a critical determinant of user trust and system reliability in electronic financial transactions. This multifaceted construct encompasses comprehensive security measures including personal data protection through encryption, implementation of dual authentication systems, merchant identity validation and security, and maximum transaction limits as risk protection mechanisms. The significance of transaction security has been increasingly recognized by international financial institutions and regulatory bodies, as robust security frameworks are essential not only for protecting user assets and sensitive information but also for fostering widespread adoption and sustainable growth of digital payment technologies in the contemporary financial landscape.

Transaction Satisfaction

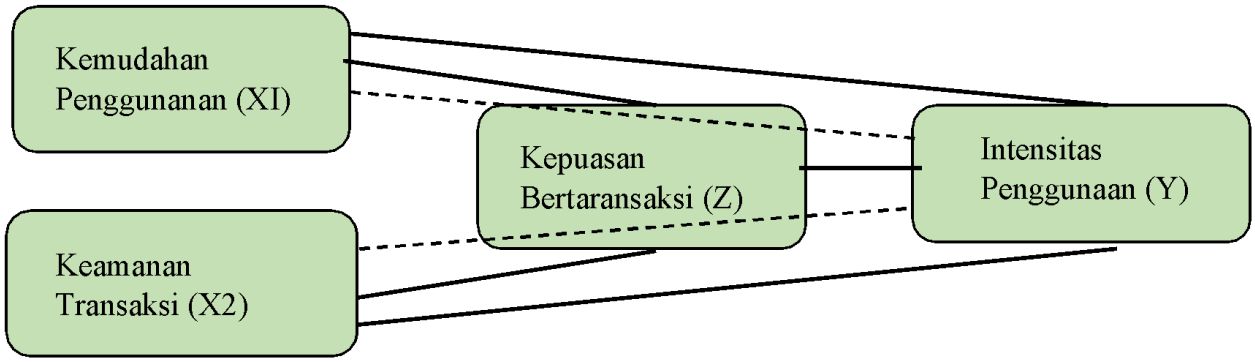
Transaction satisfaction has become a critical factor in digital payment adoption research, encompassing service quality, convenience, and user experience dimensions. Understanding this construct is essential for evaluating digital payment effectiveness, as satisfaction directly influences user loyalty and technology acceptance. Therefore, a solid theoretical foundation is necessary to comprehend the factors shaping consumer satisfaction in electronic payment services.

Usage Intensity

Usage intensity emerges as a pivotal construct in understanding technology adoption patterns

and user engagement behaviors in digital payment systems. This comprehensive concept extends beyond simple frequency measurements to encompass multidimensional aspects including daily usage frequency, duration per usage session, consistent application across various situations, social environmental encouragement for continued use, and the development of habitual usage patterns. The theoretical significance of usage intensity lies in its capacity to reflect the depth of technology integration into users' daily routines and decision-making processes, serving as a reliable indicator of successful technology adoption and long-term user commitment to digital payment platforms in contemporary financial service environments.

Figure 1 : Conceptual Framework



Methods

This research was conducted from March to June 2025 at the Faculty of Economics and Business, Campus A, State University of Jakarta, located in Rawamangun Muka, East Jakarta. The study utilized a non-probability sampling technique with purposive sampling method, targeting active FEB UNJ students aged 18-25 years who use QRIS as a payment method. Given the unlimited population nature due to the absence of specific data on QRIS usage among FEB UNJ students, the sample size was determined based (Hair et al., 2018) guidelines, which recommend 5-10 times the total number of research indicators. With 16 indicators in this study, the minimum sample calculation was 5 × 16 = 80 respondents. To enhance analysis quality and accommodate (Ghozali, 2015) recommendations for Structural Equation Modeling (SEM) requiring a minimum of 100-200 respondents, this study established 100 respondents as the appropriate sample size.

The research employed four variables: Ease of Use (X1), Transaction Security (X2), Transaction Satisfaction (Z), and Usage Intensity (Y). Each variable was operationally defined and measured through specific indicators adapted from established theories. Ease of Use was measured through five indicators including technology adoption, innovation complexity, intuitive interface design, understandable instructions, and clear accessibility and navigation, drawing from (Rogers, 2003) and (Nielsen, 2012). Transaction Security encompassed five indicators covering privacy protection, data integrity, identity authentication, data encryption and merchant validation, and QRIS security standards, based on (Chellapa & Pavlou, 2002), (Kalakota & Whinston, 1997), and (Indonesia, 2020). Transaction Satisfaction was assessed through three indicators: user perception of service quality, quality of services provided, and system quality in digital payments, derived from (DeLone & McLean, 2016). Usage Intensity was measured through three indicators including frequency of technology usage, relationship between usage intensity and satisfaction, and habits, based on (Venkatesh et al., 2012), (Kim et al., 2010), and (Limayem et al., 2007).

Data collection was conducted using online questionnaires distributed through Google Forms, employing a 5-point Likert scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). Documentation techniques were utilized to support the research process, including documentation of questionnaire distribution, evidence of respondent completion, and recording of activities during data collection and processing phases. Data analysis was performed using Smart PLS 4 software to process and analyze data from 112 respondents. The analysis began with validity and reliability testing,

establishing minimum loading factor values of 0.7 and Average Variance Extracted (AVE) above 0.5 for validity, while reliability required minimum Cronbach's Alpha and Composite Reliability values of 0.7. The analytical approach included testing basic statistical assumptions, particularly multicollinearity identification using Variance Inflation Factor (VIF) values below 5.0. Discriminant validity was verified using the Fornell-Larcker method, requiring the square root of AVE for each construct to exceed the highest correlation with other constructs. Structural model evaluation was conducted through R-square and F-square calculations, with optimal R-square values ranging from 0.25 to 0.75 and minimum F-square values of 0.02 to indicate significant effects. Hypothesis testing utilized PLS bootstrapping results, with statistical significance determined by t-statistic values ≥ 1.96 or p-values < 0.05, enabling the determination of direct and mediating effects between variables in the research model.

Result and Discussion

Based on the data analysis results using Partial Least Squares Structural Equation Modeling (PLS-SEM), this study demonstrates highly satisfactory instrument validity and reliability. The outer loadings results indicate that all indicators have loading values above 0.7, with the Ease of Use construct (X1) showing the highest loading on indicator X1.3 (0.902), Transaction Security (X2) on X2.5 (0.897), Usage Intensity (Y) on Y2 (0.925), and Transaction Satisfaction (Z) on Z2 (0.920). This confirms good convergent validity for all analyzed constructs.

Reliability testing shows excellent internal consistency with the highest Cronbach's Alpha value on the Ease of Use construct (0.934), followed by Transaction Security (0.908), Transaction Satisfaction (0.866), and Usage Intensity (0.835). Composite Reliability values for all constructs range from 0.901 to 0.950, while Average Variance Extracted (AVE) values are above 0.7 for all constructs, indicating that each construct can explain more than 50% of the variance of its indicators. Multicollinearity testing using Variance Inflation Factor (VIF) shows values still within acceptable limits (below 5), although some indicators in the Ease of Use construct exhibit moderate multicollinearity.

Discriminant validity tested using the Fornell-Larcker criterion confirms that each construct has adequate uniqueness, with square root AVE values on the main diagonal being larger than inter-construct correlations. The model's predictive capability shows substantial results, where the Usage Intensity construct has an R-Square of 0.679, indicating that 67.9% of the variance in QRIS usage intensity can be explained by the exogenous variables in the model. Meanwhile, the Transaction Satisfaction construct has an R-Square of 0.312, suggesting that other factors beyond the studied variables still influence transaction satisfaction.

Effect size analysis using F-Square reveals that Ease of Use is the strongest predictor with a large effect size on Usage Intensity ($f^2 = 0.529$) and a medium effect size on Transaction Satisfaction ($f^2 = 0.283$). Transaction Security shows a medium effect size on Usage Intensity ($f^2 = 0.174$) but a very small effect on Transaction Satisfaction ($f^2 = 0.005$). Transaction Satisfaction provides a relatively small contribution to Usage Intensity ($f^2 = 0.047$). Overall, the analysis results confirm that the research model has adequate validity and reliability, with Ease of Use as the dominant factor influencing QRIS usage intensity.

Table 1 : Path Coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X1 -> Y	0.608	0.600	0.105	5.811	0.000
X1 -> Z	0.586	0.577	0.135	4.329	0.000
X2 -> Y	0.292	0.299	0.096	3.033	0.002
X2 -> Z	0.051	0.053	0.127	0.400	0.689
Z -> Y	0.143	0.144	0.084	1.695	0.090

Five hypotheses were tested for direct relationships between constructs. H1 (Ease of Use → Usage Intensity) was strongly supported with a path coefficient of 0.608 (t-statistic = 5.811; $p < 0.001$), indicating a significant positive relationship. H2 (Ease of Use → Transaction Satisfaction) was also supported with a coefficient of 0.586 (t-statistic = 4.329; $p < 0.001$). H3 (Transaction Security → Usage Intensity) received support with a coefficient of 0.292 (t-statistic = 3.033; $p = 0.002$). However, H4 (Transaction Security → Transaction Satisfaction) was not supported, showing a non-significant coefficient of 0.051 (t-statistic = 0.400; $p = 0.689$). H5 (Transaction Satisfaction → Usage Intensity) was also not supported, with a coefficient of 0.143 (t-statistic = 1.695; $p = 0.090$).

Table 2 : Indirect Effects

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X1 -> Z -> Y	0.084	0.082	0.053	1.586	0.113
X2 -> Z -> Y	0.007	0.008	0.021	0.338	0.736

The mediation analysis through Transaction Satisfaction yielded non-significant results. The indirect effect of Ease of Use on Usage Intensity through Transaction Satisfaction (X1 → Z → Y) showed a coefficient of 0.084 (t-statistic = 1.586; $p = 0.113$), which was not significant at $\alpha = 0.05$. Similarly, the indirect effect of Transaction Security on Usage Intensity through Transaction Satisfaction (X2 → Z → Y) demonstrated a minimal coefficient of 0.007 (t-statistic = 0.338; $p = 0.736$), also non-significant.

Conclusion

This quantitative study examining the relationships between ease of use, transaction security, transaction satisfaction, and usage intensity of QRIS among 121 students at the Faculty of Economics and Business, Universitas Negeri Jakarta, revealed that ease of use is the strongest predictor of both usage intensity ($\beta = 0.608$, $p < 0.001$) and transaction satisfaction ($\beta = 0.586$, $p < 0.001$), while transaction security significantly influences usage intensity ($\beta = 0.292$, $p = 0.002$) but not transaction satisfaction. Notably, transaction satisfaction did not serve as a significant mediator between the independent variables and usage intensity, challenging traditional technology acceptance models and suggesting that utilitarian factors outweigh hedonic factors in QRIS adoption among digital natives. The model explained 67.9% of variance in usage intensity, demonstrating robust predictive power, and the findings indicate that QRIS service providers should prioritize user interface design and security infrastructure over traditional satisfaction-based approaches to maximize adoption rates among university students, while policymakers should focus on strengthening regulatory frameworks and promoting interoperability standards to enhance digital payment ecosystem development in Indonesia's higher education sector

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