



Analysis of the Effectiveness of Quick Response Code Indonesian Standard (QRIS) As A Digital Payment Tool Among Students

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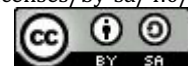
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Abstract

The rapid expansion of digital payment systems has accelerated the adoption of the Quick Response Code Indonesian Standard (QRIS) across various sectors, including higher education. Although QRIS has become a widely used cashless payment method in Indonesia, empirical evidence regarding its effectiveness among university students remains limited. This study aims to analyze the effectiveness of QRIS as a digital payment instrument among students and identify the factors influencing its use. A descriptive quantitative approach was employed by distributing online questionnaires to 90 active students selected through purposive sampling, representing 30% of the total population of 300 students using mobile banking or digital wallets. Effectiveness was measured using four indicators: perceived ease of use, perceived usefulness, time efficiency, and transaction security. The research instrument was tested for validity using Pearson product-moment correlation and reliability using Cronbach's Alpha, with all items meeting the accepted validity criteria and demonstrating satisfactory reliability (Cronbach's Alpha > 0.70). Descriptive statistical analysis revealed an average effectiveness index of 84.5%, indicating that respondents generally perceived QRIS as highly effective based on the predetermined assessment criteria. The primary factors supporting positive perceptions were transaction speed, convenience, and the elimination of the need for physical cash or change. However, internet connectivity instability and mobile device limitations, particularly low battery conditions, remained the main obstacles affecting transaction continuity. These findings contribute to the literature on digital payment adoption by providing empirical evidence on QRIS effectiveness among university students and offering practical insights for improving the quality and reliability of digital payment services in higher education environments.

Keywords: digital wallet, payment effectiveness, perceived ease of use, quick response code indonesian standard (QRIS), student

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INTRODUCTION

The rapid advancement of information and communication technology has fundamentally transformed the global financial ecosystem, particularly in the payment sector ([Humairoh et al., n.d.](#)). Over the last decade, digital payment systems have evolved from complementary transaction methods into the primary means of conducting financial

activities in many countries. The widespread adoption of smartphones, internet connectivity, and financial technology (fintech) has accelerated the transition from cash-based transactions to cashless payments, enabling consumers to complete transactions more efficiently, securely, and conveniently. Governments and central banks worldwide have actively promoted digital payment infrastructures to improve financial inclusion, reduce transaction costs, and strengthen the digital economy ([Pazarbasioglu et al., n.d.](#)). Consequently, QR code-based payment systems have become increasingly popular because they provide interoperability among different payment service providers while simplifying transactions for merchants and consumers. Digital payment innovation is therefore regarded not only as a technological advancement but also as an important driver of sustainable economic development and financial ([Humairoh et al., n.d.](#))

Indonesia has experienced one of the fastest developments in digital payment adoption in Southeast Asia ([Wijayanto et al., 2024](#)). To establish an integrated national payment ecosystem, Bank Indonesia introduced the Quick Response Code Indonesian Standard (QRIS), a standardized QR code payment system designed to ensure that transactions are fast, convenient, affordable, secure, and reliable. Unlike previous fragmented QR payment systems, QRIS enables users of different banks and electronic wallet providers to conduct transactions using a single standardized QR code, thereby improving interoperability across payment platforms. Since its implementation, QRIS has demonstrated remarkable growth. By the first semester of 2025, QRIS had reached approximately 57 million users and 39.3 million merchants, of which more than 93% were micro, small, and medium enterprises (MSMEs). During the same period, QRIS processed approximately 6.05 billion transactions with a transaction value of around IDR 579 trillion, illustrating its increasingly significant contribution to Indonesia's digital economy ([Desfikasari et al., 2026](#)).

The rapid expansion of QRIS has significantly influenced consumer payment behavior, particularly among younger generations. University students represent one of the most technologically adaptive population groups because they possess relatively high levels of digital literacy, intensive smartphone usage, and frequent engagement with mobile banking and electronic wallet applications ([Putrantona et al., n.d.](#)). Their daily economic activities, including purchasing food and beverages, paying transportation fares, buying academic materials, and conducting various retail transactions, increasingly rely on digital payment systems ([Al-Fatih et al., 2021](#)). The convenience offered by QRIS aligns well with students' dynamic lifestyles by reducing dependence on cash while enabling faster and more efficient financial transactions. Consequently, students constitute an important segment for evaluating the effectiveness of QRIS implementation because their technology acceptance behavior often reflects broader trends in digital financial adoption ([Putrantona et al., 2024](#)).

Despite its rapid adoption, the effectiveness of QRIS cannot merely be evaluated based on transaction volume or frequency of use. The success of a digital payment system depends largely on users' perceptions regarding its usefulness, ease of operation, efficiency, and security ([Özkan et al., 2010](#)). These factors have been extensively explained by the Technology Acceptance Model (TAM), which proposes that perceived usefulness

and perceived ease of use significantly influence users' attitudes and behavioral intentions toward adopting new technologies. In the context of digital payment systems, users are more likely to perceive QRIS as effective when it enables faster transactions, reduces transaction complexity, enhances payment security, and minimizes operational costs (Albshaier et al., n.d.). Conversely, technical barriers such as unstable internet connections, application failures, smartphone limitations, or insufficient battery power may reduce user satisfaction and discourage continuous usage (Yusuf et al., 2023). Therefore, evaluating QRIS effectiveness requires consideration of both technological performance and users' subjective experiences rather than relying solely on adoption statistics (Yusuf et al., 2023).

Several previous studies have investigated digital payment adoption from different perspectives. Studies based on the Technology Acceptance Model generally concluded that perceived usefulness and perceived ease of use positively influence users' intention to adopt QRIS and other digital payment platforms (Özkan et al., 2010); (Al-Fatih et al., 2021). Other studies have emphasized the importance of transaction security, trust, and service quality in improving customer satisfaction and loyalty toward electronic payment services (Al Amin et al., 2024). Research focusing on MSMEs has demonstrated that QRIS contributes to operational efficiency, transaction transparency, and broader financial inclusion through standardized digital payment mechanisms (Wijayanto et al., 2024). Meanwhile, studies involving university students have primarily examined behavioral intention, financial literacy, or consumer satisfaction associated with electronic wallets rather than comprehensively evaluating the overall effectiveness of QRIS implementation using multiple effectiveness dimensions. These findings indicate that existing studies have predominantly concentrated on technology acceptance and adoption behavior while providing limited attention to operational effectiveness experienced by student users.

METHOD

Prior to the main survey, the questionnaire was developed based on previous studies on digital payment effectiveness and the Technology Acceptance Model (TAM), particularly the constructs of perceived usefulness and perceived ease of use, which have been widely applied in evaluating financial technology adoption. The instrument consisted of statements representing four effectiveness indicators, namely Ease of Access, Transaction Efficiency, Security Level, and System Reliability. Before being distributed to respondents, the questionnaire was reviewed to ensure the clarity and relevance of each statement.

The validity of the research instrument was examined using the Pearson Product-Moment correlation test, while reliability was assessed using Cronbach's Alpha coefficient. All questionnaire items met the validity requirements with significant correlation values ($p < 0.05$), and the overall instrument demonstrated satisfactory reliability with a Cronbach's Alpha value exceeding 0.70, indicating that the instrument was appropriate for data collection.

The research was conducted at the Faculty of Economics and Business during the 2025/2026 academic year. Respondents participated voluntarily after receiving

information regarding the objectives of the study. Prior to completing the questionnaire, all participants provided informed consent, and their identities were kept confidential. The collected data were analyzed using IBM SPSS Statistics through descriptive statistical techniques, including frequency distribution, percentage analysis, mean score calculation, and interpretation of respondents' perceptions based on predetermined effectiveness criteria (Antonius, 2012).

RESULTS AND DISCUSSION

RESULTS

Respondent Characteristics

Based on questionnaire data collected from 90 respondents, the following is the profile of the characteristics of students using QRIS:

Table 1. Student Respondent Characteristics Profile (n = 90)

Respondent Characteristics	Quantity (f)	Percentage (%)
Gender		
Women	52	58%
Male	38	42%
Main QRIS Integrated Applications		
E-wallet (Dana, GoPay, OVO, ShopeePay)	58	64%
Mobile Banking (BCA Mobile, Livin', BRImo, etc.)	32	36%
Transaction Frequency per Week		
3–5 transactions	40	45%
6–10 transactions	32	35%
More than 10 transactions	18	20%
Total Respondents	90	100%

Remarks: Maximum Score per Item = 90 respondents × 5 = 450. Average Percentage of Total Effectiveness = $(3,041 / 3,600) \times 100\% = 84.47\%$.

Student respondents who participated in this study. Based on gender, the respondents were predominantly female, with 52 students (58%), while 38 respondents (42%) were male. Regarding the main application used for QRIS transactions, most respondents preferred e-wallet platforms such as Dana, GoPay, OVO, and ShopeePay, accounting for 58 students (64%), whereas 32 respondents (36%) primarily used mobile banking applications, including BCA Mobile, Livin', and BRImo. These findings indicate that e-wallet applications remain the dominant platform for QRIS transactions among students because of their accessibility and ease of use.

The frequency of QRIS transactions further demonstrates that digital payment has become part of students' daily financial activities. A total of 40 respondents (45%) reported using QRIS between three and five times per week, followed by 32 respondents (35%) who conducted six to ten transactions per week, while 18 respondents (20%) made more than ten QRIS transactions weekly. These results suggest that the majority of respondents were active QRIS users, making them appropriate participants for evaluating students' perceptions of QRIS effectiveness. Based on the overall assessment, the maximum possible score for each questionnaire item was 450 (90 respondents × 5), and

the total effectiveness score reached 3,041 out of a maximum of 3,600, resulting in an average perceived effectiveness percentage of 84.47%. This percentage indicates that respondents generally perceived QRIS as a highly effective digital payment method for supporting their routine transactions.

Tabel 2. Descriptive Analysis of Students' Perceptions on the Effectiveness of QRIS Usage

No.	Indicator	Questionnaire Statement	SS (5)	S (4)	N (3)	TS (2)	STS (1)	Total Score
A Ease of Access Indicator								
1	Ease of Access	QRIS is very easy to use because enough to Scan Products via smartphones.	55	30	5	0	0	410
2	Ease of Access	The interface of the QRIS menu on the application is easy to understand.	48	35	7	0	0	401
B Transaction Efficiency Indicators								
3	Transaction Efficiency	Transactions with QRIS accelerate payment process rather than cash.	60	25	5	0	0	415
4	Transaction Efficiency	QRIS is very effective because I don't have to think about or wait for physical change.	65	20	5	0	0	420
C Security Level Indicator								
5	Security Level	I feel safe transacting with QRIS because the payment nominal is clearly stated before the PIN is entered.	40	42	6	2	0	390
6	Security Level	The auto-recorded transaction history makes my spending control more secure and monitored.	45	35	8	2	0	393
D System Reliability Indicators & Constraints								
7	System Reliability & Constraints	Process Snoop Do and Verification QRIS payments are always successful without errors from the system.	40	22	18	8	2	342
8	System Reliability & Constraints	Payment using fixed QRIS smooth despite the condition of the internet network is less stable.	25	20	25	10	10	270

Source: Data Processed

Tabel 2. presents the descriptive analysis of students' perceptions regarding the effectiveness of QRIS based on four indicators: Ease of Access, Transaction Efficiency,

Security Level, and System Reliability and Constraints. Overall, the results indicate that students perceived QRIS positively as a digital payment method. The highest scores were obtained for the Transaction Efficiency indicator, where Statement 4 achieved a total score of 420 (93.33%), followed by Statement 3 with 415 (92.22%), both categorized as Highly Effective. Similarly, the Ease of Access indicator also received high evaluations, with Statement 1 obtaining 410 (91.11%) and Statement 2 reaching 401 (89.11%), indicating that respondents considered QRIS easy to use and effective in simplifying payment transactions across different applications.

DISCUSSION

The findings indicate that students generally perceive QRIS as an effective digital payment instrument because it supports faster, simpler, and more convenient financial transactions (Andriyani et al., n.d.). From the perspective of the Technology Acceptance Model (TAM), these findings demonstrate that perceived usefulness and perceived ease of use play important roles in shaping positive user perceptions. According to , users are more likely to accept and continuously use a technology when they believe that it improves their performance and requires minimal effort to operate. In this study, QRIS was perceived as beneficial because it reduced transaction time, minimized dependence on cash, and simplified payment procedures through the use of a standardized QR code across different merchants. These findings suggest that students evaluate QRIS not only based on the frequency of use but also on the practical benefits experienced during daily financial transactions. Consequently, the high effectiveness score obtained in this study reflects positive user experiences that strengthen students' willingness to continue using QRIS as their preferred payment method (Amini et al., n.d.).

The results of this study are also consistent with previous research examining digital payment adoption among young consumers. Al-Fatih et al. (2021) reported that transaction efficiency is one of the strongest factors encouraging the younger generation to adopt QRIS because it enables faster payment completion and reduces waiting time during purchasing activities. Likewise, Putrantona et al. (2024) found that university students generally possess high levels of digital literacy, making them more receptive to financial technology innovations than other population groups. These findings reinforce the present study, where students rated transaction efficiency as the highest effectiveness indicator. Compared with conventional cash transactions, QRIS eliminates the need to prepare exact cash or wait for physical change, allowing students to complete transactions more efficiently. Therefore, the practical advantages offered by QRIS explain why respondents considered it an effective payment method for supporting their daily academic and personal activities.

Another important finding concerns the ease of access provided by QRIS. Respondents agreed that the standardized QR code significantly simplified payment procedures because they were able to use different mobile banking and electronic wallet applications without changing payment methods at different merchants. This interoperability represents one of the primary advantages of QRIS as a national payment standard developed by Bank Indonesia. The availability of a unified payment system

reduces transaction complexity and increases user convenience, thereby encouraging wider adoption across various business sectors(R Gochhwal, 2017). These findings support the Technology Acceptance Model, which argues that technologies perceived as easy to use are more likely to be accepted and continuously utilized by users. Accordingly, the positive perceptions regarding QRIS accessibility demonstrate that system standardization contributes substantially to improving users' transaction experiences.

Despite the generally positive findings, this study also reveals that technical barriers remain significant challenges affecting the effectiveness of QRIS implementation. Respondents reported that unstable internet connections, weak cellular signals, and occasional application failures frequently interrupted transaction processes. These obstacles become particularly apparent in locations with limited network coverage, such as campus basement areas or crowded public spaces. Under such conditions, students are often forced to postpone transactions or temporarily return to cash payments. This finding indicates that the effectiveness of QRIS is influenced not only by the quality of the payment system itself but also by supporting technological infrastructure. In line with Yusuf et al. (2023) inadequate network stability may reduce users' confidence in digital payment systems despite recognizing their practical advantages. Therefore, improving internet infrastructure and enhancing application reliability are essential to ensuring the sustainability of QRIS adoption.

The security aspect also deserves particular attention because trust is an important determinant of digital payment adoption. The relatively high scores obtained for transaction security indicate that students generally believe QRIS provides adequate protection through authentication mechanisms such as PIN verification and transaction confirmation before payment completion. These security features reduce concerns regarding unauthorized transactions and enhance users' confidence in conducting cashless payments. Previous studies have consistently demonstrated that perceived security significantly influences users' willingness to adopt and continue using digital financial services. Therefore, maintaining high security standards should remain a priority for payment service providers to preserve public trust and support the continued growth of digital payment ecosystems.

Overall, the findings of this study provide both theoretical and practical implications. Theoretically, the results support the Technology Acceptance Model by demonstrating that perceived usefulness(Care, 2018), perceived ease of use, transaction efficiency, and transaction security collectively contribute to positive perceptions regarding QRIS effectiveness among university students. In addition, the study extends previous research by evaluating QRIS effectiveness from an operational perspective rather than focusing solely on behavioral intention or technology adoption. Practically, the findings provide useful information for Bank Indonesia, financial institutions, digital payment providers, and universities in improving the implementation of QRIS. Strengthening internet connectivity, enhancing application performance, increasing transaction security, and expanding digital financial literacy programs are expected to improve user satisfaction and encourage broader adoption of QRIS. Ultimately, these improvements will contribute to the development of a more inclusive, efficient, and sustainable cashless society within

higher education environments and Indonesian society as a whole.

CONCLUSION

ased on the descriptive analysis of 90 student respondents, this study concludes that the use of the Quick Response Code Indonesian Standard (QRIS) as a digital payment method is perceived to be highly effective, achieving a perceived effectiveness index of 84.47%. Students generally viewed QRIS positively because it offers greater transaction efficiency, ease of application use, and practical cashless payments without the need for physical change. These findings indicate that QRIS has become a convenient payment alternative that supports students' daily financial activities. Nevertheless, respondents also perceived that the effectiveness of QRIS remains closely dependent on stable internet connectivity and the reliability of payment service provider applications, which may affect transaction continuity in certain situations.

Despite these findings, the results should be interpreted within the scope of the study. The conclusions reflect students' perceptions rather than objectively measuring the actual performance of QRIS. Furthermore, the study was limited to 90 respondents from a single population using a descriptive quantitative approach without comparative analysis of other digital payment methods. Therefore, the findings cannot be generalized to all user groups. Future research is recommended to involve larger and more diverse samples, apply analytical or comparative approaches, and examine additional factors influencing digital payment adoption. Such studies are expected to provide a broader understanding of QRIS implementation while offering practical recommendations for improving digital payment services in higher education and other sectors.

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