



## Game Changer in Payment Method: Factors Influencing Users Intention to Use QRIS

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### ABSTRACT

Payment system has undergone continuous changes, and the evolving landscape shows how QRIS (Quick Response Code Indonesia Standard) is changing Indonesian society preference of payment. The study explores the driving factors of users' intention to adopt the QRIS through the lens of modified UTAUT framework to see whether users' emotions correlate toward their Intention. Analysis is done through quantitative descriptive approach using PLS-SEM, with data collected from 109 QRIS users in the Greater Jakarta (*Jabodetabek*) area using a non-probability convenience sampling technique. The results show that Behavioral Intention has a significant effect on Intention to Use and bridges (mediates) the relationships between Social Influence, Effort Expectancy, and Performance Expectancy toward Intention to Use. In contrast, direct effects from Social Influence, Effort Expectancy, and Performance Expectancy have limited significance on Intention to Use. These findings suggest that QRIS adoption operates as a behavioral-driven process, highlighting the importance of strengthening users' Behavioral Intentions to accelerate digital payment adoption. The study contributes to the digital payment literature by positioning QRIS as a transformative innovation in Indonesia's payment system.

**Keywords:** QRIS; Digital Payment System; UTAUT; Behavioral Intention; PLS-SEM

### INTRODUCTION

The payment system has undergone continuous evolution alongside the development of the forms and functions of money, influenced by a myriad of factors including technological innovation, business models, social traditions, and government policy (Boel, 2019). Although payment systems were initially simplistic, they possessed fundamental limitations, particularly regarding value matching, often referred to as the double coincidence of wants, and the availability of goods or services desired by transacting parties. In the nascent phases of economic development, the payment system was predicated on the barter mechanism, defined as the direct exchange of goods and services without the use of a monetary medium of exchange (Uyan, 2017). However, the inherent constraints of the barter system necessitated the utilization of specific commodities as media of exchange, such as salt, shells, and precious metals, which were deemed to possess relatively stable value and broad acceptability.

With the advancement of civilization, the utilization of money as a medium of exchange was adopted more systematically due to its superior efficiency and practicality. The first standardized coins were minted by the Lydians in the Anatolia region circa 600 BC, marking a significant milestone in the history of payment systems (Kuijpers & Popa, 2021). During the Middle Ages, payment systems became increasingly organized with the introduction of non-

cash instruments, such as checks and promissory notes, including credit notes; these instruments aimed to facilitate long-distance transactions and mitigate the risks associated with the transport of physical cash (Postan, 2009; Alavi, 2016). Subsequently, the Industrial Revolution of the 18th and 19th centuries catalyzed significant changes through innovations in minting machinery and the development of commercial banking, resulting in the widespread proliferation of checks, while the nascent forms of electronic payment systems began to emerge in the late 19th century (Challoumis & Eriotis, 2025; Geva, 2019).

Entering the 21<sup>st</sup> century, advancements in information and communication technology have fundamentally revolutionized payment systems through the advent of the internet and mobile technology. These developments have enabled the emergence of various digital payment methods, such as credit cards, electronic wallets (e-wallets), and cryptocurrencies, which are accessible rapidly, widely, and relatively securely by the global society (Do et al., 2022; Kumari & Devi, 2022; Asif et al., 2023; Adjasi et al., 2023). The digitalization of payment systems not only simplifies transaction processes but also enhances efficiency and security, while simultaneously fostering financial inclusion. This trajectory demonstrates that payment systems continue to adapt to the zeitgeist and societal needs, evolving from cash-based systems toward a fully digitalized financial technology (fintech) ecosystem (Griffiths, 2021; Putra, 2021; Adjasi et al., 2023). Furthermore, data from We Are Social indicates that Indonesia possesses robust potential for future digitalization, as evidenced by the continuous increase in social media usage and online transaction volumes (Kemp, 2024).



Figure 1. Potential of digitalization of Indonesia Society

Source: Kemp (2024)

In the Indonesian context, the Quick Response Code Indonesian Standard (QRIS) represents as the digital technological innovation catalyzed to create significant changes within the financial sector, particularly in the payment gateway system. Data on QRIS transaction volumes indicate a rapid rate of adoption over the past three years, with transaction values reaching IDR 226 trillion in 2023. Java Island, specifically the provinces of Jakarta, West Java, and Banten, is recorded as the largest domicile QRIS merchants are based from. This finding is corroborated by the increase in the East Ventures Digital Competitiveness Index (EV DCI) score, which rose from 27.92% in 2019 to 32.05% in 2020, reflecting the robust absorption capacity of the digital economy in the region (Katadata Insight Center, 2021). Furthermore, the Greater Jakarta (*Jabodetabek*) area possesses a substantial population base, comprising Jakarta (11.1 million), Bekasi (2.5 million), Tangerang (1.9 million), Depok (1.9 million), and Bogor (1.1 million) as of the first half of 2024 (Badan Pusat Statistik, 2024). These conditions position *Jabodetabek* as a potential base for accelerating the adoption of digitalization, particularly within payment systems. The high utilization rate of QRIS in this region indicates its role as a "game changer," driving fundamental shifts in payment processes, thereby necessitating a stronger explanation of the key drivers influencing consumer intention to adopt QRIS. (Andriani & Damayanti, 2023; Prawitasari et al., 2024)

There are several sources that state or implicate that the Unified Theory of Acceptance and Use of Technology (UTAUT) shown a strong statistical explanation as a theoretical framework for elucidating patterns of new technology adoption intention, capable of explaining majority of the variance in technology usage intention, compared to eight other technology adoption (Sari et al., 2016; Venkatesh et al., 2003; Handayani & Sudiana, 2017; Chauhan & Jaiswal, 2016; Jadil et al., 2021; Tuli, 2023). In the context of digital payment system such as QRIS, the integration of electronic payment architectures is significantly influenced by a triad of UTAUT constructs: performance expectancy (PE), effort expectancy (EE), and social influence (SI), which collectively serve as stable predictors of user acceptance. Performance Expectancy reflects the belief that using technology will enhance transaction efficiency and productivity (Trianto et al., 2025; Xu et al., 2025), has been proven to significantly influence digital payment adoption (Camilleri, 2024; Saputri et al., 2022). Effort Expectancy defined as users' perceptions of technology ease of use, also demonstrates a significant impact toward the intention to adopt mobile-based payment systems (Chao, 2019; Linge et al., 2023). Acceptance from social environments (Social Influence) also plays a pivotal role in shaping technology adoption decisions (Kurniawan et al., 2022), as also demonstrated in studies by Jung et al. (2020) on United States consumers and Hsu and Lu (2003) regarding new technology adoption.

Although a number of prior studies have analyzed QRIS adoption and demonstrated the significant influence of PE, EE, and Social Influence (SI) on the Intention to Use digital payments (Paramita & Cahyadi, 2024; Saputri et al., 2022; Muchtar et al., 2024; Kamal et al., 2023), these studies have not explicitly linked QRIS adoption with its specific role as a game changer, transforming traditional payment systems into a digital ecosystem. Therefore, this study adopts a distinct approach by differentiating between Behavioral Intention and Intention to Use as two separate constructs. Behavioral Intention (BI) represents an individual's general intention toward QRIS technology, whereas Intention to Use (ITU) reflects the individual's readiness and concrete plans to utilize QRIS as a primary payment method.

To capture this fundamental transition process, this study employs two analytical approaches. First, it examines the influence of Performance Expectancy, Effort Expectancy, and Social Influence as independent latent variables on Behavioral Intention and Intention to Use to understand the individual contribution of each factor. Second, it combines PE, EE, and SI into a single composite variable that influences BI, which subsequently serves as a mediating variable for ITU. This approach allows the research to provide a sophisticated view on how QRIS functions as a game changer in transforming the digital payment system in Indonesia, particularly in the *Jabodetabek* region. Specifically, this study aims to examine whether: (1) social influence (SI) have a significant effect on the intention to use (ITU) QRIS among users in the *Jabodetabek* region; (2) effort expectancy (EE) have a significant effect on the intention to use (ITU) QRIS among users in the *Jabodetabek* region; (3) performance expectancy (PE) have a significant effect on the intention to use (ITU) QRIS among users in the *Jabodetabek* region; and (4) whether behavioral intention (BI) mediates the influence of SI, EE, and PE on the intention to use QRIS.

### **Payment system**

Payment system can be defined as an integral component of a nation's financial and banking system, encompassing a set of rules, contracts, operational facilities, and technical mechanisms utilized for the transmission, validation, and settlement of payment instructions (Subari & Ascarya, 2003). At the most fundamental level, Ugolini (2017) elucidates that a payment system constitutes an agreed-upon method for transferring value between buyers and sellers within an economic transaction. Furthermore, Athanassiou (2020) asserts that payment systems involve various institutions, such as banks, clearing houses, and central banks, which play a pivotal role in ensuring that the value exchange process occurs securely, efficiently, and reliably.

Advancements in technology have had a highly beneficial impact on society, providing ease and fluidity to all activities, which in turn influences societal behavior (Kim et al., 2021; Mensah et al., 2022). The banking sector is challenged to balance the services provided to the public in alignment with technological developments. In the digital era, almost all physical devices are digitally connected, meaning that, inadvertently, all digital activities leave a detailed footprint. The highly rapid development of digitalization will enable increased development and innovation of technological infrastructure, which will, in turn, increase the participation of community groups that have not yet been reached by banking services (Srikaningsih, 2020; Tuli, 2023).

Digital innovation provides an increase in time efficiency and budgeting, and also influences and transforms social interactions toward economic democratization, where economic agents will possess augmented capabilities to access and utilize information technology. Efficiency in economic activities also becomes an advantage for economic agents, as it encourages the widespread dissemination of information. These existing benefits will be key in reducing existing economic exclusion (Srikaningsih, 2020).

In Indonesia, Bank Indonesia (BI) serves as the central authority tasked with regulating and ensuring the stability, security, and efficiency of this system (Undang-Undang No. 23, 1999; Undang-Undang No. 6, 2009). Over time, technological advancements have catalyzed a significant transformation in payment methodologies, shifting consumer and business behaviors away from traditional cash, or currency, transactions toward electronic and digital

payment architectures. To facilitate this transition securely, BI continually modernizes critical infrastructures, such as the BI-RTGS for real-time settlements and Payment-versus-Payment (PvP) services to mitigate foreign exchange settlement risks (Bank Indonesia, 2020a).

The rapid advancement of technology has made payment systems undergone a continuous transformation toward more digital and integrated forms (Putri, 2021). Bank Indonesia explicitly encourages payment system innovation through the Indonesia Payment System (SPI) Blueprint 2025, which is designed to support the integration of the national digital economy and finance, while simultaneously maintaining a balance between innovation, financial system stability, and consumer protection (Bank Indonesia, 2020a). BSPI 2025 announced a pivot from conventional cash payments toward non-cash instruments, particularly Card-Based Payment Instruments (APMK) and rapidly expanding server-based electronic money, driven by continuous technological innovation designed to meet evolving societal needs (Bank Indonesia, 2020a).

### **Quick Response Code Indonesian Standard (QRIS)**

To address the fragmentation of digital payment modalities in Indonesia, Bank Indonesia, in partnership with the Indonesian Payment System Association (ASPI), inaugurated the Quick Response Code Indonesian Standard (QRIS) in 2019. Defined by Bank Indonesia (2020b) as a standardized framework for QR-based transactions, QRIS leverages the Shared Delivery Channel (SDC) model to consolidate disparate Payment System Service Providers (PSP) into a unified interface protocol. Through this structural integration, the initiative seeks to establish a financial ecosystem characterized by interoperability, operational efficiency, and broad-based financial inclusion.

QRIS represents a pivotal shift toward a unified digital payment ecosystem in Indonesia, designed to mitigate the inefficiencies of fragmented proprietary systems (Prawitasari et al., 2024; Trianto et al., 2025; Muchtar et al., 2024). Developed by Bank Indonesia (BI) and the Indonesian Payment System Association (ASPI), the standard is anchored in the EMVCo international protocol, ensuring cross-platform, cross-instrument, and cross-border compatibility (Bank Indonesia, 2020b). The architecture is fundamentally bifurcated into Shared Delivery Channels (SDC); which include communal infrastructure like ATMs, Electronic Data Capture (EDC) terminals, and standardized QR codes; and Proprietary Channels, comprising institution-specific platforms such as mobile and internet banking. By leveraging the SDC model, QRIS enables a singular interface to process transactions from a heterogeneous array of Payment System Service Providers (PJSP), effectively democratizing access to digital financial services for both consumers and merchants.

Operationalization of this system involves a complex value chain and specific interaction models that ensure systemic stability and flexibility. The processing of QRIS transactions is supported by a network of issuers, acquirers, switching institutions, and merchant aggregators, all governed by the National Merchant Repository. Stakeholders interact through two primary modalities: Merchant Presented Mode (MPM), where the consumer scans a merchant's display, and Customer Presented Mode (CPM), where the merchant scans a code generated by the user's application. These modalities are further categorized by their technical display; Static QR Codes utilize fixed physical media requiring manual input of transaction values, while Dynamic QR Codes are generated in real-time via EDC terminals with embedded transaction data. This technological versatility allows QRIS to accommodate a wide spectrum

of retail environments, from micro-merchants to large-scale enterprises.

Beyond its technical specifications, QRIS is guided by the "UNGGUL" strategic philosophy, which serves as a catalyst for national economic progress. This framework emphasizes a system that is Universal (compatible with all apps), *Gampang* (simplifying user workflows to a "scan and click" process), *Untung* (reducing merchant costs through account consolidation), and *Langsung* (enabling real-time processing and immediate notification). This value proposition is reinforced by dynamic regulatory oversight; for instance, Bank Indonesia adjusted the transaction ceiling from Rp10 million to Rp20 million in 2022 to incentivize household consumption (Burhan, 2022). By integrating these functional advantages with robust policy support, QRIS transcends its role as a mere payment tool, functioning instead as a foundational element for financial inclusion and the broader trajectory of Indonesia's national economic recovery.

### **Unified Theory of Acceptance and Use of Technology (UTAUT)**

To analyze the adoption of QRIS payment technology, this study employs the Unified Theory of Acceptance and Use of Technology (UTAUT) framework developed by Venkatesh et al. (2003) as stated by Sari et al. (2016) that UTAUT is a statistically robust model to explain the phenomenon of digital payment acceptance. The UTAUT model explains ITU through three main internal and external aspects, that is perceived performance of a technology (PE), perceived ease of use when using a technology (EE), and social influences of wide spread technology acceptance (SI) (Jadil et al., 2021; Jena, 2022). These aspects are the representative of eight prior technology acceptance theories and models aimed at explaining the intention to use (Behavioral Intention) and actual usage behavior of a technology.

The social aspect within UTAUT is accounted for through the SI construct, which outlines how much a person thinks that significant others expect them to adopt the new technology (Venkatesh et al., 2003). Research by Kadir et al. (2022) indicate that SI, as an external factor, significantly affects e-wallet adoption. These findings suggest that individuals tend to adopt digital payment technologies when there is positive influence from their social environment. The findings also suggest that widespread adoption influence a positive trust within society, a crucial point for high risk tech such as digital payments. Based on this explication, the following hypothesis is formulated:

### **Social influence affects the intention to use QRIS (H1)**

Furthermore, Effort Expectancy (EE) pertains to the level of convenience linked to utilizing the system (Venkatesh et al., 2003; Ventakesh et al., 2012). Venkatesh et al. (2003) found that EE positively influences Intention to Use, indicating that the perception of ease of use enhances an individual's intention to adopt technology. Research by Lai (2017) also demonstrates similar results, where Effort Expectancy exerts a positive and significant influence on the Intention to Use information systems. Based on these findings, the following hypothesis is formulated that social influence affects the intention to use QRIS.

### **Effort expectancy affects the intention to use QRIS (H2)**

Performance Expectancy (PE) is the extent to which a person believes that utilizing the system will assist them in achieving improvements in job performance (Venkatesh et al., 2003). Research by Venkatesh et al. (2003) indicates that PE is the strongest predictor of ITU in the UTAUT model. Chen et al. (2012) also found that PE positively affects the intention to use e-

learning platforms. Additionally, Chao (2019) and Al-Saedi et al. (2020) assert that PE possesses strong predictive capability regarding Intention to Use. Based on this explication, the proposed hypothesis is that effort expectancy affects the intention to use QRIS.

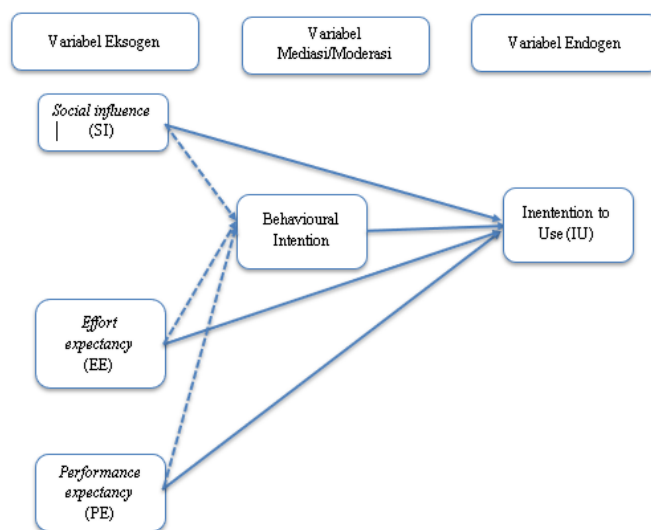
**Performance expectancy affects the intention to use QRIS (H3)**

In this study, Behavioral Intention is positioned as a mediating variable. Fishbein and Ajzen (1975) explain that Behavioral Intention represents an individual's conscious plan to perform a specific behavior in the future, thus playing a critical role in bridging the influence of psychological and social factors on actual usage behavior. Behavioral Intention represents the individual's readiness and tendency to perform a specific behavior, which in this study is the use of QRIS. In technology acceptance models, Behavioral Intention is often positioned as a mediating variable bridging the influence of perceptual factors on actual usage behavior.

Theoretical constructs such as SI, EE, and PE are posited to influence technology adoption not merely through direct impact, but by first modulating an individual’s internal intention. As established by Pavlou and Fygenson (2006) in the context of e-commerce, social determinants and technological attitudes serve as critical precursors to Behavioral Intention, which subsequently dictates actual usage behavior. Within this framework, BI is conceptualized as the primary psychological mediator that translates the cumulative effects of SI, EE, and PE into a concrete Intention to Use QRIS. Consequently, based on these theoretical foundations and established empirical evidence, the following hypothesis is formulated, that performance expectancy affects the intention to use QRIS.

**Behavioral intention mediates the influence of social influence, effort expectancy, and performance expectancy on the intention to use QRIS (H4)**

To clarify the structural relationships of the research, the following research framework serves as the basis for hypothesis testing in this study where behavioral intention mediates the influence of social influence, effort expectancy, and performance expectancy on the intention to use QRIS



**Figure 2. Research Framework**

Source: Author (2026)

**METHOD**

This study employs a quantitative research design with a descriptive approach. The data utilized comprises both primary and secondary data. Primary data was obtained through the dissemination of questionnaires to respondents, whereas secondary data was collected through documentation studies and surveys of relevant sources. The quantitative approach was selected due to its capability to objectively and systematically measure the relationships between variables (Cresswell & Creswell, 2018).

The population of the study encompasses all QRIS users within the Jakarta metropolitan area. The calculation of total sample size was conducted using Slovin's formula to obtain a representative sample size. The sampling technique employed is non-probability sampling with a convenience sampling method, which entails the selection of respondents based on accessibility and availability at the time the research was conducted.

$$n = \frac{N}{[N(d)^2 + 2]}$$

Explanation:

- n : Total Sample
- N : Total Population
- d : Precision Value (90% atau sig.o.1)

The total sample of this research is then:

$$n = \frac{5,700,000}{[5,700,000(0.10)^2 + 2]}$$

$$n = 99.99 \approx 100 \text{ samples}$$

This study utilizes a structured questionnaire as the primary research instrument to evaluate five core variables. The model incorporates three exogenous constructs: SI, EE, and PE, BI, and ITU. Primary data collection was conducted through the digital administration of instruments via the Google Forms. The criteria for respondents in this study are individuals who are users of the Quick Response Code Indonesian Standard (QRIS) and are domiciled in the Greater Jakarta (*Jabodetabek*) region. The psychometric evaluation of the questionnaire items was conducted using a six-point Likert scale. The selection of a six-point configuration is informed by prior scholarly findings suggesting that even-numbered scales enhance discriminatory power and yield more robust statistical significance by eliminating the neutral midpoint (Chomeya, 2010; Djaelani & Darmawan, 2021).

**Table 1. Likert Scale**

Description	Likert Scale (Score)
Totally Disagree	1
Disagree	2
Fairly Disagree	3
Fairly Agree	4
Agree	5

Description	Likert Scale (Score)
Totally Agree	6

Source: Chomeya (2010)

To operationalize the research variables into empirically measurable forms, this study utilizes a research instrument consisting of 19 indicators representing the constructs of PE, EE, SI, BI, and ITU. This instrument was adopted from prior validated studies to ensure the reliability and validity of the measurement items used (Davis, 1989; Moore & Benbasat, 1991; Hu et al., 1999; Kumar et al., 2016). The details of the indicators used in this study are presented in Table 2.

**Table 2. Variable Operationalization**

Variable	Indicator	Item Reference
Social Influence	SI1: "People who are important to me saying that it is better for me to use QRIS."	People who are important to me think that I should use mobile internet. (Venkatesh et al., 2012)
	SI2: "People whose opinion I value, invite me to use QRIS."	People who influence my behavior think that I should use mobile internet. (Venkatesh et al., 2012)
	SI3: "People who are important to me (i.e.: family members, close friends, and colleagues) support me in using QRIS."	People whose opinions that I value prefer that I use mobile Internet. (Venkatesh et al., 2012)
Effort Expectancy	EE1: "Learning QRIS is easy for me."	Learning how to use mobile Internet is easy for me. (Venkatesh et al., 2012)
	EE2: "It is easy for me to getting used to and master using QRIS."	It is easy for me to become skillful at using mobile Internet. (Venkatesh et al., 2012)
	EE3: "Instruction available for using QRIS is clear and easy to understand."	My interaction with mobile Internet is clear and understandable. (Venkatesh et al., 2012)
	EE4: "It was easy for me to learn to use QRIS."	My experience with mobile payment is straightforward and understandable. (Hongxia et al., 2011)
Performance Expectancy	PE1: "QRIS is very useful for my daily life."	I find mobile Internet useful in my daily life. (Venkatesh et al., 2012)
	PE2: "QRIS improves the efficiency in doing transaction."	The use of mobile payment raises my hopes of achieving actions that are vital to me. (Hongxia et al., 2011)
	PE3: "QRIS speeds up my transaction."	Relying on mobile payment helps me accomplish things very quickly. (Qasim & Abu-Shanab, 2016)

Variable	Indicator	Item Reference
	PE4: "QRIS increases my productivity."	Using mobile Internet increases my productivity. (Ventakesh et al., 2012) The use of mobile payment drives my productivity. (Qasim & Abu-Shanab, 2016)
Intention to Use	IU1: "I will use QRIS for purchase or payment transaction." IU2: "I will be using QRIS for my transactions in the near future." IU3: "I intend to use QRIS as often as possible."	Determinants of Intention to Use autonomous vehicles: Findings from PLS-SEM and ANFIS (Foroughi et al. , 2023)
Behavioural Intention	BI1: "I intend to use QRIS in the future."  BI2: "I hope that I will use QRIS in my daily life."  BI3: "I plan to use QRIS often."	I plan to use mobile payment any moment in the future. (de Luna et al., 2019)  I will always try to use mobile payment in my daily life. (de Luna et al., 2019)  I plan to continue to use mobile Internet frequently. (Venkatesh et al., 2012)

As mentioned earlier, the ways people use QRIS for transactions have seen quick growth each year, especially in the Java area. Therefore, this research looks at QRIS users in the Greater Jakarta (*Jabodetabek*) region. The study uses several key factors such as Social Influence, Effort Expectancy, and Performance Expectancy as outside factors; Behavioural Intention as a middle factor; and Intention to Use as an inside factor. The goal of this research is to explore how Social Influence, Effort Expectancy, and Performance Expectancy affect the Intention to Use QRIS among people in *Jabodetabek*, while also examining how Behavioural Intention plays a role in connecting these outside factors to the Intention to Use QRIS.

This research employs the Partial Least Squares Structural Equation Modelling (PLS-SEM) method for analysing and processing data. The SEM approach allows researchers to include hidden factors that cannot be directly seen, which are evaluated through multiple measurable indicators. The PLS-SEM analysis takes place in three main steps: assessing the measurement model (outer model), examining the structural model (inner model), and testing the hypotheses.

The evaluation of the measurement model (outer model) seeks to determine how effectively the indicators correspond to the underlying concepts they are intended to represent. For models that represent measurement, the evaluation standards consist of convergent validity, discriminant validity, cross-loadings, and Average Variance Extracted (AVE), in addition to examining composite reliability. Construct validity is assessed by examining the outer loading values, which are expected to be significant. A score of .70 is preferred as it demonstrates a higher degree of validity, with the minimum threshold according to Hair et al. (2017) is  $\geq 0.50$ . A value for AVE equal to 0.50 or more demonstrations indicate that the concept can account for more than 50% of the variation in its indicators (Hair et al., 2017). Furthermore,

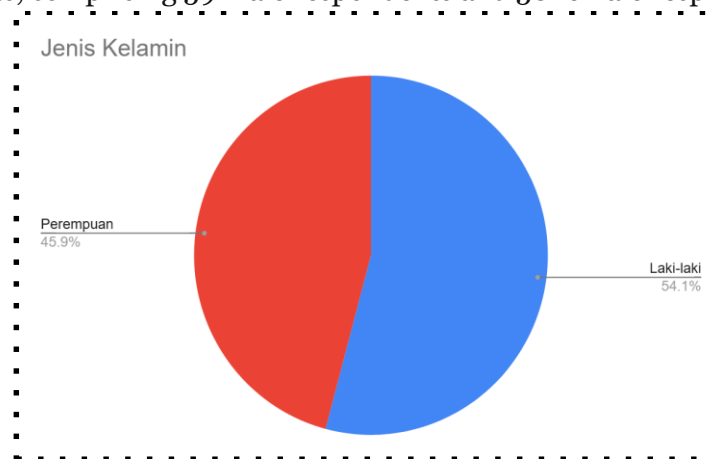
a cross-loading analysis is performed to verify that the loading value of each indicator on its assigned construct exceeds its loading on other constructs, thus ensuring the accurate measurement of the latent construct (Hair et al., 2017).

## RESULT

### Research Object Profile

Transaction methods utilizing QRIS have experienced rapid annual growth, particularly on Java Island. The focal object of this research constitutes QRIS users in the Greater Jakarta (*Jabodetabek*) area. The variables employed in this study are Social Influence, Effort Expectancy, and Performance Expectancy as exogenous variables; Behavioural Intention as a mediating variable; and Intention to Use as an endogenous variable. This study is conducted to ascertain whether the variables of Social Influence, Effort Expectancy, and Performance Expectancy exert an influence on the Intention to Use among QRIS users in *Jabodetabek*, and whether the Behavioural Intention variable can mediate the relationship between Social Influence, Effort Expectancy, and Performance Expectancy toward the Intention to Use among QRIS users in *Jabodetabek*.

Regarding the respondent profile concerning gender, the QRIS user base comprises males and females from diverse backgrounds in terms of age, education, and profession. Male respondents actively utilize QRIS for daily transactions in both physical and online stores, demonstrating robust adaptation to technological advancements as well as trust in the security and convenience offered. Female respondents, hailing from various professions and social statuses, also exhibit significant usage of QRIS. They frequently utilize QRIS for a variety of transactions, such as purchasing daily necessities, bill payments, and online shopping, reflecting confidence in the efficiency and convenience of this digital payment system. The percentage results presented in the following diagram reflect calculations derived from a total of 109 respondents, comprising 59 male respondents and 50 female respondents.

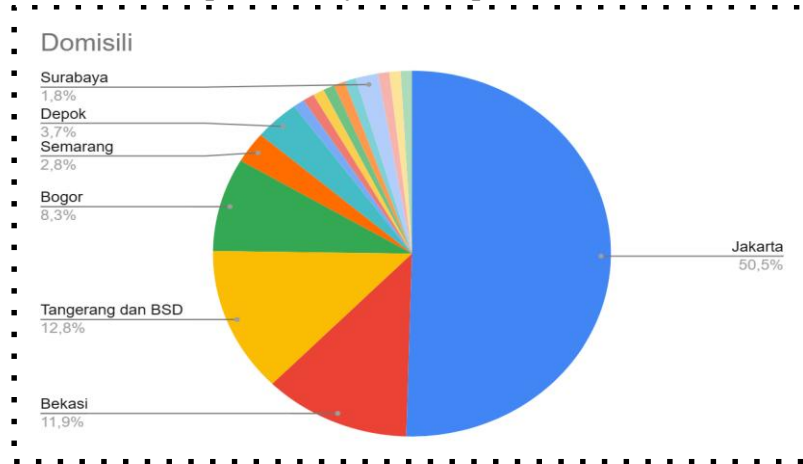


**Figure 3. Respondent Gender Profile**

Source: Author (2025)

Furthermore, respondents residing in Jakarta, Bogor, Depok, Tangerang, and Bekasi originate from a diverse array of professional backgrounds, encompassing office workers, entrepreneurs, university students, civil servants, merchants, educators, administrative personnel, factory workers, homemakers, private sector employees, and self-employed individuals. These individuals utilize QRIS for a multitude of daily transactions, including food

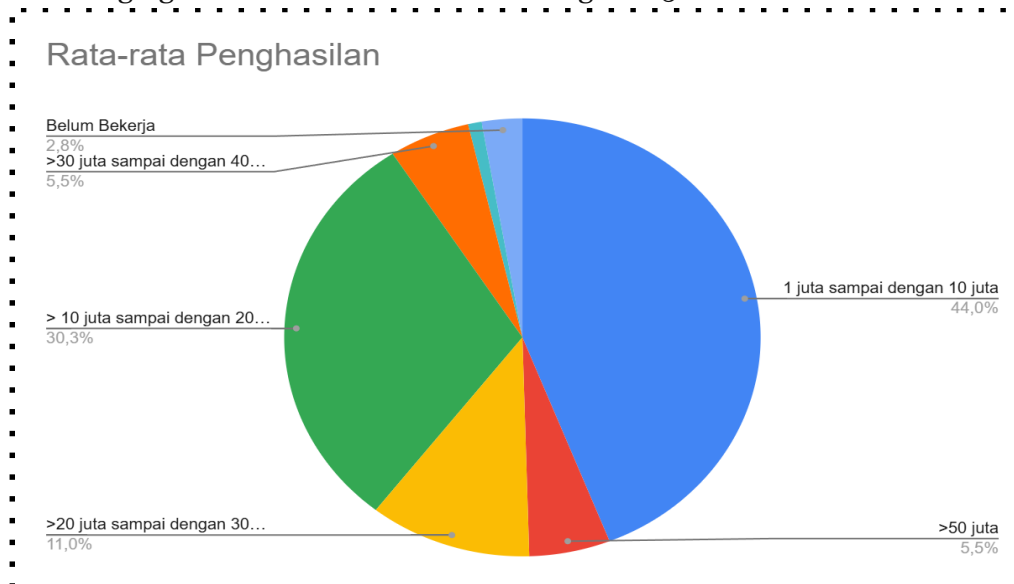
and beverage purchases, bill payments, retail shopping, and transportation. The high utilization rate of QRIS in these regions reflects a high level of technology acceptance and robust adaptation to digital payment methods, observable across metropolitan, urban, and suburban areas. QRIS offers convenience, efficiency, and security, attributes acknowledged by respondents from various social strata and professions. The percentage calculation process presented is derived from the total respondent dataset of 109 individuals, cross-referenced with the domicile information provided by each respondent.



**Figure 4. Respondent Domicile Profile**

Source: Author (2025)

Subsequently, QRIS usage has permeated evenly across all income brackets, indicating widespread acceptance and perceived benefits across various societal strata. The primary rationales for QRIS adoption include ease of use, time efficiency, transaction security, and the facilitation of expenditure tracking. Even for individuals without a fixed income, QRIS has become an essential tool in supporting daily financial activities in a practical and modern manner. The income data required by the researchers was categorized using an interval mechanism ranging from IDR 1 million to exceeding IDR 50 million.

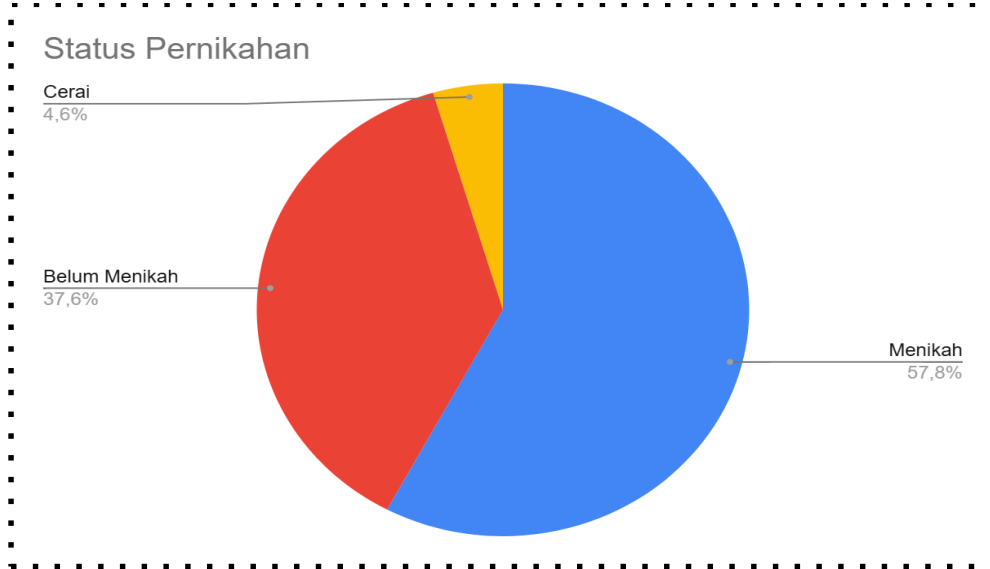


**Figure 5. Respondent Income Profile**

Source: Author (2025)

QRIS is widely accepted as a payment method across various societal segments, irrespective of marital status, demonstrating the successful penetration of financial technology. QRIS

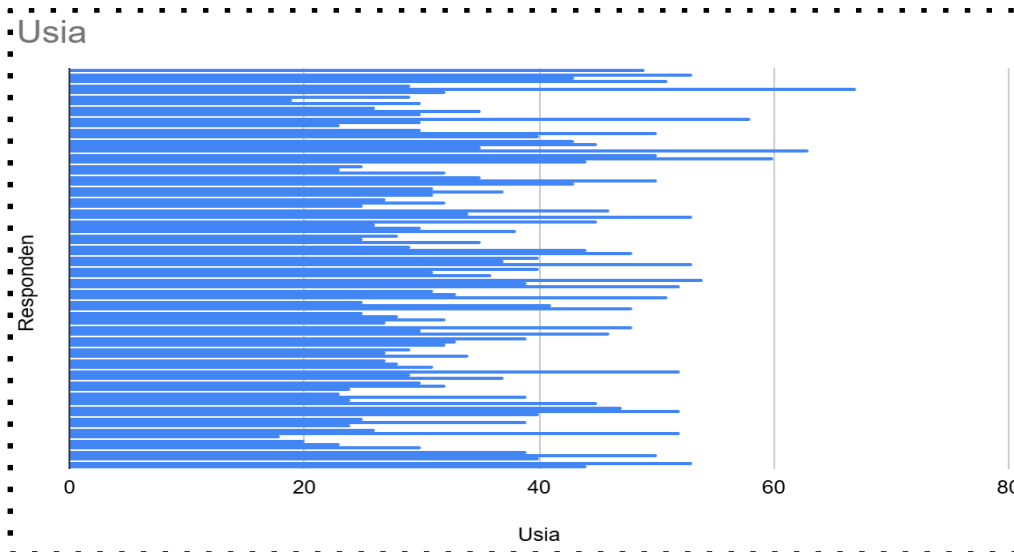
offers transactional convenience and security, which are pivotal factors for all groups, addressing both personal and familial needs. Understanding QRIS usage patterns based on marital status can assist service providers in developing more targeted features or promotions, such as family loyalty programs or discounts for household necessities. To further enhance adoption, education regarding the benefits and usage mechanics of QRIS requires continuous intensification, particularly for groups with limited technological exposure.



**Figure 6. Respondent Marriage Status**

Source: Author (2025)

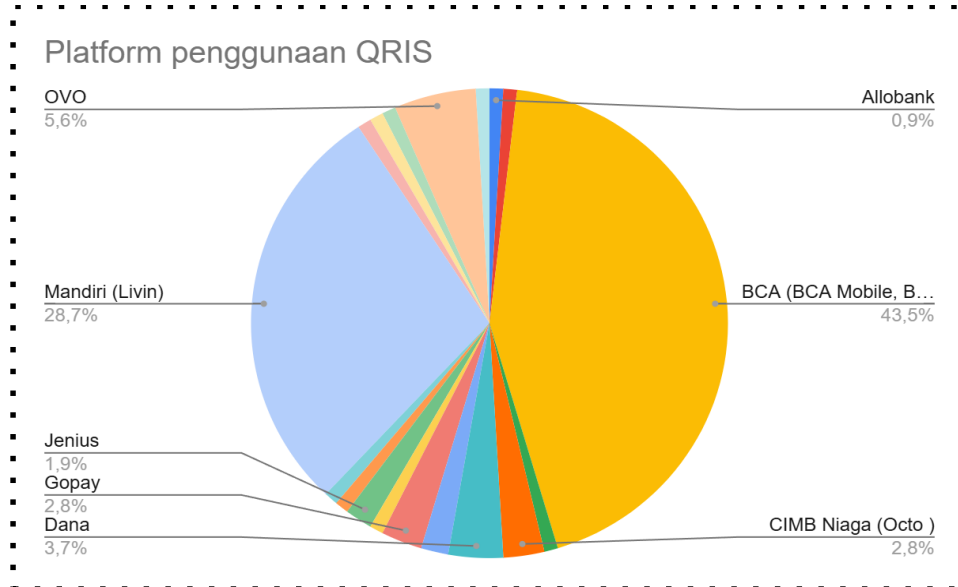
QRIS has also received positive reception across all age cohorts due to the convenience, security, and transactional efficiency it offers, with the younger generation serving as the primary drivers and the older generation increasingly following this trend due to educational efforts. Education concerning the benefits and operationalization of QRIS is critical, particularly for groups less familiar with technology, and can be disseminated through communities, places of worship, or frequently accessed media. The user-friendly interface and simplified features ensure inclusivity and accessibility for all ages, while the emphasis on QRIS security features enhances trust and encourages broader usage, especially among older age groups.



**Figure 7. Respondent Age Profile**

Source: Author (2025)

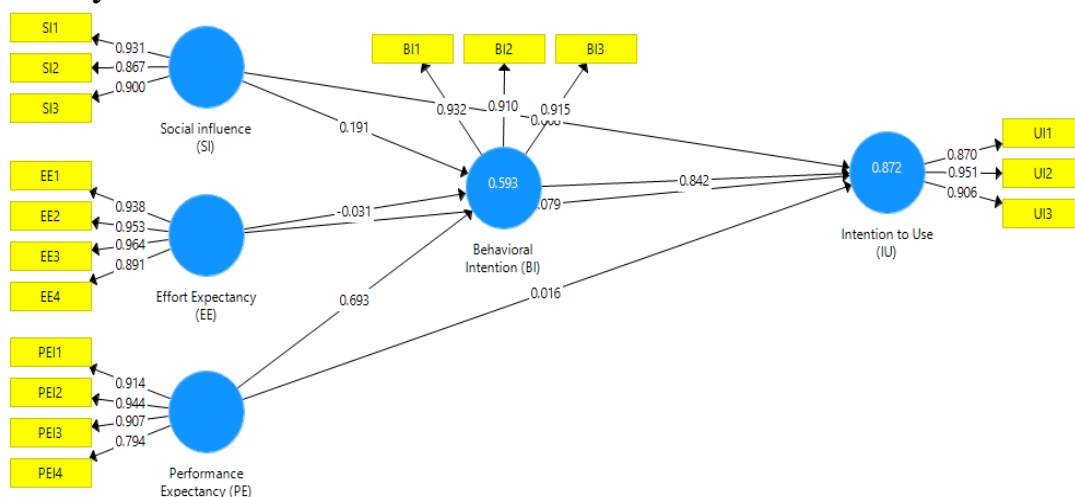
The majority of respondents have adopted QRIS in their daily transactions. Their preference between utilizing QRIS via Banking applications or E-Wallets is contingent upon individual needs and convenience. Banking application users opt for QRIS due to the desire for direct integration with savings accounts and trust in banking institutions. Conversely, E-Wallet users are more attracted to the convenience, transaction speed, and various promotional offers available.



**Figure 8. Respondent QRIS Platform Use Behavior**  
Source: Author (2025)

In conclusion, the respondent profile in this study is diverse, ranging from gender and domicile to the platforms utilized for QRIS transactions. This elucidates that QRIS adoption is indeed significantly practiced by residents in the Jabodetabek region. Subsequently, to ascertain the relationship of factors influencing QRIS adoption, data analysis is conducted to explicate the patterns of QRIS acceptance within the context of the Jabodetabek region.

**Data Analysis**



**Figure 9. Research Model**  
Source: Author (2025)

To assess the robustness and overall performance of the research model, the model path is structured as illustrated in Figure 1. In this model, SI, EE, and PE are modeled as exogenous variables influencing two constructs: Behavioral Intention and Intention to Use. Furthermore,

Behavioral Intention is positioned as a mediating variable that simultaneously bridges the influence of Social Influence, Effort Expectancy, and Performance Expectancy on the Intention to Use.

The initial phase of model robustness evaluation is conducted by testing whether the utilized constructs meet the required reliability and validity criteria.

**Table 3. Construct Validity Test**

<b>Variable</b>	<b>Indicator</b>	<b>Loading Factor</b>
SI	SI1	.931
	SI2	.867
	SI3	.900
EE	CL1	.938
	CL2	.953
	CL3	.964
	CL4	.891
PE	PEI1	.882
	PEI2	.904
	PEI3	.887
	PEI4	.852
BI	BI1	.932
	BI2	.910
	BI3	.915
ITU	IU1	.870
	IU2	.951
	IU3	.906

Construct validity in the measurement model with individual indicators can be evaluated through outer loading values. In reflective measurement models, the evaluation of internal consistency also encompasses the testing of Average Variance Extracted (AVE) (Hair et al., 2017). Each indicator is expected to possess a statistically significant outer loading value, indicating that the indicator adequately represents the latent construct it measures.

Although in empirical practice high outer loading values are not always achieved, latent constructs must still be capable of explaining a substantial proportion of the variance in each indicator. The general rule for an acceptable outer loading value is above 0.55, particularly during the instrument development stage. However, in the majority of research, an outer loading value above 0.70 is preferred as it demonstrates a stronger level of construct validity.

Consistent with the principles of outer loading evaluation, an AVE value of 0.50 or higher indicates that, on average, the latent construct explains more than half of the variance of its indicators. Based on the test results presented in Table 3, all variables in this study exhibit factor loading values above 0.70; thus, it can be concluded that the measured constructs have met the validity criteria and are statistically significant.

The subsequent stage in model evaluation is reliability testing for the variables utilized in the research model.

**Table 4. Reliability Test**

<b>Indicator</b>	<b>Cronbach's Alpha</b>	<b>rho_A</b>	<b>Composite Reliability</b>	<b>Average Variance Extracted (AVE)</b>
BI	.908	.908	.942	.844
EE	.953	.956	.966	.878
ITU	.895	.901	.935	.827
PE	.913	.924	.939	.795
SI	.883	.901	.927	.810

Reliability testing aims to examine the reliability values generated by each indicator of the constructs that form them. A variable is deemed to have satisfied the reliability test if the AVE value is  $\geq 0.5$ , Composite Reliability  $\geq 0.7$ , and Cronbach's Alpha value  $\geq 0.6$  (Abdillah & Jogiyanto, 2015). Based on the test results in Table 4 above, it is evident that the values of each indicator meet the established criteria, specifically, AVE  $\geq 0.5$ , CR  $\geq 0.7$ , and Cronbach's Alpha  $\geq 0.6$  (Abdillah & Jogiyanto, 2015). Consequently, the next step is to measure the discriminant validity of the research model.

**Table 5. Cross Loading Test**

<b>Indicator</b>	<b>BI</b>	<b>EE</b>	<b>PE</b>	<b>SI</b>	<b>ITU</b>
BI1	.932	.512	.697	.414	.866
BI2	.910	.497	.770	.448	.839
BI3	.915	.467	.665	.428	.852
EE1	.473	.938	.612	.466	.510
EE2	.539	.953	.680	.381	.579
EE3	.463	.964	.645	.381	.513
EE4	.523	.891	.720	.290	.521
PEI1	.763	.730	.914	.390	.742
PEI2	.692	.658	.944	.340	.668
PEI3	.620	.669	.970	.340	.575
PEI4	.596	.436	.794	.458	.630
SI1	.480	.460	.426	.931	.458
SI2	.349	.380	.393	.867	.370
SI3	.419	.365	.312	.900	.481
UI1	.766	.515	.639	.477	.870
UI2	.887	.525	.711	.461	.951
UI3	.872	.512	.645	.431	.960

Discriminant validity test is conducted to ensure that the design of each indicator correctly explains their own latent variables. To validate this, an indicator must possess a stronger correlation value for its own latent variable than its correlation with other latent variables. Discriminant validity testing in SEM-PLS can be conducted using two tests, through Fornell-Larcker criterion and Cross Loading. Cross Loading measures validity in the indicator level, while the Fornell-Larcker test is focused on determining that discriminant validity is also established in the variable level. Fornell-larcker test is utilized to examine the coefficient value of an indicator, while Cross Loading is used to test the indicator value against its latent variable. According to the Cross Loading value analysis in Table 5, it is demonstrated that each indicator clearly explains its respective variable, thereby establishing discriminant validity for

these indicators. To further reinforce this validity, table 6 highlights the results of Fornell-Larcker test.

**Table 6. Fornell Larcker Test**

<b>Indicator</b>	<b>BI</b>	<b>EE</b>	<b>ITU</b>	<b>PE</b>	<b>SI</b>
<b>BI</b>	.919				
<b>EE</b>	.535	.937			
<b>ITU</b>	.928	.568	.910		
<b>PE</b>	.751	.706	.732	.891	
<b>SI</b>	.468	.404	.500	.418	.900

Table 6 displays the values from the Fornell-Larcker analysis. The results of the Fornell-Larcker analysis in this study indicate that the values meet the specified requirements. Each correlation between the individual indicators and their latent variables possesses the highest value compared to the correlation of those indicators with other latent variables. Thus, discriminant validity is established in the level of indicator and variable, reinforcing validity of research instrument employed. Therefore, it can be concluded that there is no Fornell-Larcker lag in the data above, and further analysis may proceed.

**Table 7. R-Square (R<sup>2</sup>) Test**

<b>Indicator</b>	<b>R<sup>2</sup></b>	<b>R<sup>2</sup> Adjusted</b>
BI	.593	.581
ITU	.872	.867

In Table 7, the model shows an R<sup>2</sup> value for the Behavioral Intention variable of 0.593 or 59.3%. This implies that the Behavioral Intention variable is explained by the variables examined in this study, namely SI, EE, and PE, while the remaining 40.7% is influenced by other variables not examined in this study. Furthermore, ITU exhibits an R<sup>2</sup> value of 0.872 or 87.2%, meaning that the Intention to Use can be explained by SI, EE, and PE, through the behavioral intention build up from these exogenous variables by 87.2%. The remaining 12.8% of the variance is attributed to other variables that were not included in this study. According to Ghazali (2014), the R<sup>2</sup> value reflects how well the structural model explains each dependent variable.

Internal model evaluation requires path coefficient testing because the results of this test reveal the direction of the exogenous variables toward the endogenous variables. A relationship is termed positive if the resultant figure is positive, and conversely, a relationship is termed negative if the resultant figure is negative, as explained in Table 8:

**Table 8. Path Coefficient Analysis**

<b>Indicator</b>	<b>BI</b>	<b>EE</b>	<b>ITU</b>	<b>PE</b>	<b>SI</b>
<b>BI</b>			.842		
<b>EE</b>	-.031		.079		
<b>ITU</b>					
<b>PE</b>	.693		.016		
<b>SI</b>	.191		.068		

Based on the path coefficient results, it is observable that BI has the strongest influence on the intention to use, with a path coefficient of 0.842. This indicates that Behavioral Intention is

the primary and highly significant predictor of the intention to use within the research model. Meanwhile, the other independent variables show relatively small direct influences on the intention to use, with EE having a path coefficient of 0.079, SI of 0.068, and PE only 0.016. These findings suggest that the direct influence of these three independent variables on the intention to use is relatively weak, and their influence is likely mediated through behavioral intention.

The analysis results indicate that PE is the strongest factor that shapes Behavioral Intention (path coefficient=0.693). This indicates that user perception regarding the performance benefits of the technology/system under study has a very strong influence on their BI. SI demonstrates a moderate effect on BI with a path coefficient of 0.191, indicating that social factors also play a role in shaping user BI, although not as strongly as PE. Meanwhile, EE shows a negative but very weak relationship with BI, with a path coefficient of -0.031, suggesting that ease of use is not a driving factor for BI in the context of this study and may even have a reverse effect, albeit a very minor one.

Behavioral Intention acts as a very robust mediator between the independent variables and the dependent variable Intention to Use, evidenced by the high path coefficient between BI and IU (0.842). The analysis demonstrates a significant mediation effect, particularly for Performance Expectancy, which has a small direct effect on IU (0.016) but a substantial indirect effect through BI ( $0.693 \times 0.842 = 0.583$ ). Similarly, Social Influence has a mediation effect through BI ( $0.191 \times 0.842 = 0.161$ ) that is larger than its direct effect on IU (0.068). Meanwhile, Effort Expectancy, despite having a negative effect on BI (-0.031), has a positive direct effect on IU (0.079), indicating a complex relationship pattern and possibly reflecting a suppression effect in the research model. Overall, these results confirm the role of Behavioral Intention as the primary mediating construct in the technology adoption model studied. To further examine the significance of each exogenous variable on Intention to Use, hypothesis testing is conducted with the following results:

**Table 9. Hypothesis Testing**

Description	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
SI -> ITU	.069	.069	.040	1.708	.088
EE -> ITU	.079	.073	.064	1.228	.220
PE -> ITU	.017	.037	.094	.180	.857
SEP (SI, EE, PE Combined) -> BI -> ITU	.602	.604	.062	9.721	.000
BI -> ITU	.841	.825	.066	12.692	.000

## DISCUSSION

### Social Influence affects the Intention to Use QRIS

The impact of the Social Influence (SI) on Intention to Use (ITU), as hypothesis 1, shows a p-value of 0.088, which is above 0.05. Based on this results, it can be determined that SI couldn't directly impact significantly the Intention to Use QRIS. This finding opposes the study

conducted by Ayaz and Yanartaş (2020), which claimed that Social Influence impacts the Intention to Use. On the other hand, this research is consistent with the results of Al-Saedi et al. (2020), which stated that SI in certain cases does not significantly affect ITU directly. This suggests that the community is not entirely susceptible by outside factors when it comes to using complex technology such as QRIS. Currently, society has also conformed with the use of card based transactions, solely relying on social influence to drive QRIS acceptance could be deemed not enough as loyalty of users is stronger in previous payment systems. Therefore, it can be concluded that Hypothesis 1 is not supported.

### **Effort Expectancy affects the Intention to Use QRIS**

According to the observation, the effect of the Effort Expectancy (EE) variable on Intention to Use (ITU) as hypothesis 2 shows a p-value of 0.220, which is higher than 0.05. On these grounds, it can be concluded that the Effort Expectancy factor does not have a significant impact on the Intention to Use factor. This discovery is in opposition to the results obtained by Chao (2019), Rumangkit et al. (2023), and Hewawasam et al. (2023). In 2023, it was shown that Effort Expectancy significantly influences the Intention to Use. Nonetheless, a study by Ayaz and Yanartaş (2020) backs up the findings of this hypothesis test, indicating that Effort Expectancy was not strong enough to clarify the Intention to Use. This can be explained by the observation that residents of *Jabodetabek* are likely familiar with payment methods like online transfers or debit card transactions. Therefore, when they use QRIS, they do not notice a considerable rise in effort since they are already at ease with these technologies from their previous experiences. Therefore, it can be concluded that Hypothesis 2 is not supported.

### **Performance Expectancy affects the Intention to Use QRIS**

The direct effect of the Performance Expectancy (PE) on the Intention to Use, as hypothesis 3, shows a p-value of 0.857, which is greater than 0.05. Based on this figure, PE does not have a direct significant impact on the Intention to Use of QRIS in users. This result is in conflict with the findings of Hewawasam et al. (2023) and Mahastanti & Utoyo (2022). According to the findings from Hewawasam et al. (2023), PE is identified as the most significant factor affecting the Intention to Use, whereas Mahastanti & Utoyo (2022) finds it meet the performance expectancy in a form of business value. Nonetheless, there are various instances that suggest PE does not have a strong impact on the Intention to Use, especially among groups with high technological skills and favoured payment options like online transfers (Saputri et al., 2022; Odelia and Ruslim, 2023). Therefore, it can be concluded that Hypothesis 3 is rejected.

### **Behavioural Intention mediates the influence of Social Influence, Effort Expectancy, and Performance Expectancy on the Intention to Use QRIS**

Based on the testing results, Behavioural Intention (BI) serves as a strong mediator between Social Influence (SI), Performance Expectancy (PE), and Effort Expectancy (EE) toward Intention to Use (ITU) with p-value of 0.000 and The t-statistic value is 12.692, signalling a very strong statistical significance. This explains that in the context on Indonesia society, positive general intention positively constructs ITU, in which is influenced indirectly by SI, PE, and EE. This finding also suggests that for the people in Indonesia to adopt QRIS for everyday payments, QRIS has to effectively address SI, EE, and PE to foster a positive BI towards QRIS. The improvement to life quality (performance and ease of use) that QRIS bring are essential as the main purpose of why people should use it, with social influence fosters the necessary trust in society that the technology is reliable and can be used anywhere. The simultaneous effect of these variables builds a positive BI that is crucial for promoting the use

of QRIS in the community. Therefore, Hypothesis 4 is supported which is in line with the result or previous research by Ladkoom & Thanasopon (2020).

### **Managerial Implication**

The shifting trend in Indonesia's payment systems from the utilization of debit cards and ATM transfers toward QRIS indicates that business practitioners and payment system providers are necessitated to satisfy user expectations, particularly regarding operational reliability, ease of use, and widespread adoption within the user's social environment. Based on the findings of this study, QRIS usage is influenced by Performance Expectancy, Effort Expectancy, and Social Influence, which operate simultaneously through the formation of Behavioural Intention. Based on these findings, the managerial implications derived from this study are as follows: (1) Development of Reliable QRIS System, where QRIS providers must ensure the development of a reliable system characterized by a high level of operational efficiency, thereby enabling transactions to be executed rapidly, stably, and securely. System reliability serves as a crucial factor in maintaining user trust and supporting the sustainability of QRIS adoption. (2) User-Centric QRIS System Design, where management needs to prioritize, featuring an intuitive interface and a simplified transaction flow. This approach aims to minimize usage barriers and enhance the perception of ease in transacting with QRIS. (3) QRIS Marketing and Promotion Strategies, where QRIS providers are advised to intensify marketing and promotional activities to augment adoption rates within the community. These strategies may encompass enhancing public awareness regarding the benefits and features of QRIS, providing usage incentives, and strengthening integration with business entities and institutions that possess high interaction intensity with the public. (4) Management and Monitoring of QRIS System Performance, in which QRIS providers need to conduct continuous monitoring and management of system performance to ensure stability, security, and service quality. Continuous performance evaluation enables early detection of potential system disruptions and the sustainable improvement of service quality. (5) Collaboration with Regulators and Stakeholders, where QRIS need to strengthen, particularly in enhancing public literacy regarding QRIS usage and ensuring compliance with applicable regulations. Although the monetary authority responsible for QRIS is Bank Indonesia, synergy with other institutions, including the Financial Services Authority (OJK), remains necessary to support a healthy and sustainable digital payment ecosystem.

### **CONCLUSION & RECOMMENDATION**

This study analysed data from 109 respondents and discovered that Social Influence, Effort Expectancy, and Performance Expectancy individually do not exert a significant influence on the Intention to Use QRIS among the *Jabodetabek* community. These findings indicate that the decision to adopt QRIS is not solely influenced by social environmental factors nor individual perceptions regarding the ease and performance of the technology. One plausible explanation is the relatively high maturity level of digital payment technology adoption in the *Jabodetabek* region, such that perceptions of these individual factors no longer serve as primary determinants in shaping usage intention.

Nevertheless, the research results demonstrate that Behavioral Intention plays a significant mediating role in the relationship between Social Influence, Effort Expectancy, and Performance Expectancy toward the Intention to Use QRIS. This finding confirms that these

three exogenous variables need to operate simultaneously in forming a positive Behavioral Intention, which subsequently encourages user intention to adopt QRIS. Thus, the QRIS adoption mechanism is more indirect in nature and relies on the formation of user behavioral readiness.

Although this study contributes to expanding the understanding of digital payment technology acceptance, several limitations must be acknowledged. First, the research model only tests a relatively limited number of variables, leaving opportunities to include other variables, such as customer engagement or customer experience, to obtain a more comprehensive understanding of QRIS adoption behavior. Second, the sample size and population scope in this study remain limited, where the number of respondents only meets the minimum requirements and has not reached the optimal standard of  $n \times 10$  recommended by Hair et al. (2010) for PLS-SEM analysis. This condition potentially affects the level of generalizability and robustness of the research findings.

Based on these limitations, this study recommends several directions for future research development. First, developing and testing a more comprehensive research model by adding relevant variables to yield richer and more accurate findings. Second, expanding the research scope with a larger sample size and involving various service sectors, thereby enhancing the generalizability of research results. Third, focusing the analysis on respondents from the Generation Z cohort to obtain a deeper understanding regarding the low direct influence of UTAUT variables on QRIS usage intention in this group. Fourth, narrowing the respondent age range to ensure a more measurable and homogeneous sample distribution, thereby enabling specific and in-depth analysis of user behavior and preferences based on specific age group.

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N/A.

## DECLARATION

By submitting this manuscript to JRBT, the authors declare that there are no actual or potential conflicts of interest related to this work.

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