

# The Effect of Expectation Confirmation and Perceived Usefulness on Continuance Intention of QRIS Mobile Banking Users: The Mediating Role of Customer Satisfaction

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**Abstract:** This research aims to test the influence of expectation confirmation and perceived usefulness on the continuance intention of QRIS mobile banking users mediated by customer satisfaction. The sample in this study were banking customers who were recorded as actively using QRIS services spread including Jakarta, West Java and East Java involving 300 respondents. The analysis technique used Structural Equation Modelling – Partial Least Squares analysis. The results of the research obtained: perceived usefulness, expectation confirmation, and customer satisfaction has a significant effect on continuance intention; expectation confirmation has an effect on customer satisfaction; and gender demographic factors (control variables) have a significant effect on continuance intention, whereas age and income factors are not significant. The managerial implication is that banking service providers in Indonesia can continue to innovate and develop QRIS, which is not only the development of QRIS MPM, QRIS CPM, and QRIS TTS, but can also answer business challenges and customer needs for QRIS mobile banking services that enable customers to conduct digital financial transactions across countries.

**Keywords:** Expectation Confirmation, Perceived Usefulness, Continuance Intention, Satisfaction

**Abstrak:** Penelitian ini menguji pengaruh expectation confirmation dan perceived usefulness terhadap continuance intention pengguna QRIS mobile banking dimediasi kepuasan nasabah. Sampel dalam penelitian ini adalah nasabah perbankan yang tercatat aktif menggunakan layanan QRIS mobile banking yang meliputi Jakarta, Jawa Barat dan Jawa Timur dengan melibatkan sebanyak 300 responden. Teknik analisis menggunakan analisis Structural Equation Modelling – Partial Least Square. Hasil penelitian diperoleh: perceived usefulness, expectation confirmation dan kepuasan nasabah berpengaruh signifikan terhadap continuance intention; expectation confirmation berpengaruh terhadap kepuasan nasabah; dan faktor demografi gender (variabel kontrol) berpengaruh signifikan terhadap continuance intention, sebaliknya faktor usia dan pendapatan tidak signifikan. Implikasi manajerialnya adalah penyedia layanan perbankan di Indonesia dapat terus melakukan inovasi dan pengembangan QRIS yang tidak hanya pengembangan pada QRIS MPM, QRIS CPM dan QRIS TTS saja tetapi bisa menjawab tantangan bisnis dan kebutuhan nasabah akan layanan QRIS yang memungkinkan nasabah melakukan transaksi keuangan digital lintas negara.

**Kata kunci:** Expectation Confirmation, Perceived Usefulness, Continuance Intention, Satisfaction

## I. INTRODUCTION

Bank Indonesia (BI) reported that as of the second quarter (Q2) of 2025, QRIS mobile banking transactions reached IDR 2,788.31 trillion. The transaction volume was recorded at 2.6 billion in Q1 and 1.12

billion in Q2, marking a 594% increase since 2020 (Bank Indonesia, 2025). This reflects the growing acceptance of QRIS as a practical and efficient payment method. BI has developed QRIS Tap, based on Near

Field Communication (NFC), which allows users to make payments by tapping their smartphone on a payment terminal, eliminating the need to scan a QRIS barcode.

In recent years, QRIS mobile banking transaction growth has reached 226.54%. As of October 2024, the number of users reached 54 million, with 36.57 million participating merchants. Other digital payment systems, such as Real Time Gross Settlement (BI-RTGS) and BI-Fast, have also experienced significant growth. The user preference for more efficient and effective transactions is strongly linked to the concept of perceived usefulness. BI is strengthening the digital payment infrastructure to support sustainable economic growth. The launch of QRIS Tap was accompanied by a policy to reduce the Merchant Discount Rate (MDR) for specific merchants. This policy reduced the MDR for merchants in the Public Service Agency (Badan Layanan Umum) and Public Service Obligation (PSO) categories from 0.4% to 0%, effective March 14, 2025.

Challenges for service providers and the adoption of QRIS mobile banking in the Indonesian banking sector remain focused on several issues. These include unstable internet connections, a frequent user complaint, and QR code scanning errors resulting from poor smartphone camera quality. Furthermore, cases of QRIS sticker forgery by irresponsible parties are often found, and competition exists from non-bank platforms offering QRIS, such as Gopay or Paytren. According to the OJK (2024), 77% of user complaints are related to failed transactions.

Other challenges include security and fraud concerns, transaction value limits, additional transaction fees, and a lack of user understanding regarding QRIS operations, which can lead to usage errors and inconvenience. It is anticipated that the findings of this research will provide managerial recommendations for the banking industry to enhance digital literacy among all customers. For instance, banking management should consider developing

NFC-based QRIS features to overcome scanning issues.

Continuance intention among QRIS mobile banking users in Indonesia is significantly influenced by transaction speed, security, and ease of use. Other factors include the comprehensiveness of QRIS features relative to user needs and benefits such as high effectiveness, which reduces the time customers spend on digital payments. Users frequently perceive gaps between their expectations and the actual performance of the QRIS service, including discrepancies between needs and feature availability, as well as between perception and reality (Lombu & Wardana, 2024).

Perceived usefulness has been shown to influence the continuance intention of QRIS mobile banking users. This relationship is linked to transaction convenience, service effectiveness, user comfort, and digital payment flexibility. The construct of PU is shaped by user experience, technical knowledge, recommendations from peers (friends and family), and references from advertising media (Mariana et al., 2023; Riztyawan et al., 2023).

Expectation confirmation also influences the continuance intention of QRIS mobile banking users in Indonesia (Andrew & Retno, 2022). Information provided by the QRIS service provider can shape user expectations and subsequent continuance intention (Tseng et al., 2022; Ayyoub et al., 2023). Expectation confirmation is determined by user experience; a positive experience fosters the intention for future reuse.

In this research, customer satisfaction is employed as a mediating variable, explaining the variation in the influence of perceived usefulness and expectation confirmation on continuance intention. The satisfaction of QRIS users is constructed from perceptions of ease of use, transaction security, effectiveness, and payment flexibility. The presence of satisfaction impacts the relationship between perceived usefulness, expectation confirmation, and continuance intention (Wu & Norhayati, 2025).

Findings by Wu & Norhayati (2025) and Lombu & Wardana (2024) suggest perceived usefulness is a dominant factor influencing continuance intention. Conversely, other research findings highlight alternative variables, such as perceived enjoyment (Putra et al., 2023), perceived risk (Tandon et al., 2019), perceived trust (Singh & Sinha, 2020), and perceived ease of use (Wilson et al., 2021; Yulisetiari et al., 2024).

Further gaps exist, while several models are employed to predict continuance intention (e.g., ECM, TAM, and UTAUT), a sufficiently accurate or comprehensive model has not yet been developed. A final gap remains, as no researchers have yet explained the impact of continuance intention on business revenue or formulated strategies to enhance the customer experience for QRIS mobile banking users.

The novelty of this research is its statistical testing based on empirical data from QRIS mobile banking users in Indonesia, addressing a persistent gap in prior research. Specifically, it investigates the causal path of expectation confirmation on continuance intention, as mediated by perceived usefulness and customer satisfaction. A second implication is the model's relevance to contemporary issues facing QRIS users; current banking customers demand services that provide tangible, immediate benefits (perceived usefulness) and align with their service usage expectations (expectation confirmation).

To date, few researchers in Indonesia have integrated the Technology Acceptance Model (TAM) and the Expectation-Confirmation Model (ECM) to analyse QRIS mobile banking continuance intention. For instance, Ikhsan et al. (2025) utilized only the TAM to analyse AI adoption in the Indonesian banking sector. Similarly, Gunawan et al. (2022) employed only the ECM to analyse radical and incremental innovation in e-commerce startups. This demonstrates a clear gap, as prior studies have not combined these frameworks. This research is therefore strongly motivated to test the

determinants of continuance intention based on a TAM-ECM integration.

This presents both a challenge and an opportunity to deeply explore the determinant factors influencing QRIS user intention in Indonesia, with a specific emphasis on integrating these two theories into a unified TAM-ECM model. The statement of the gap is thus: this research aims to close the aforementioned research deficiencies by combining these models, and further, by adding demographic control variables to explore the unique characteristics of technology adopters in Indonesia.

## II. RESEARCH METHODOLOGY

Continuance intention refers to a customer's intent to continue using the same service product over a prolonged period (Andrew & Retno, 2022). It represents a customer's willingness to reuse a service, based on their prior experiences (Khotimah & Anas, 2022). This continuance usage intention signifies a situation where an individual possesses a strong desire to use a product or service, offered by a firm, again (Hariguna et al., 2023).

The several key indicators of Continuance Intention include: Intends to continue to apply this specific technology; Intends to continue QRIS in the future; Intends to increase QRIS in the future; Keep using QRIS as regularly; Recommend to family, friends and co-workers to use (Karim et al., 2022; Wang & Yang, 2023; Kurniawan et al., 2024).

Perceived usefulness is defined as a customer's perception regarding how the use of digital payments can alter their transaction methods (Wilson et al., 2021). It is also described as the customer's perception when utilizing digital payment services to complete their digital transactions (Khotimah & Anas, 2022). Furthermore, perceived usefulness represents the degree of a customer's confidence that digital payments will enhance their payment effectiveness (Kurniawan et al., 2024).

The common indicators used to measure the Perceived Usefulness variable in this research include: Work quickly; Useful; Productivity; Easier; Performance (Ayyoub et al., 2023; Yulisetiari et al., 2024; Amin et al., 2024; Keraf et al., 2024).

Expectation confirmation is defined as repurchase intention that is based on customer satisfaction, specifically concerning the confirmation of a product's or service's expected and perceived performance (Khotimah & Anas, 2022). It is also described as customer acceptance of using a service product offered by a firm (Yang et al., 2023). Furthermore, expectation confirmation is defined as the measure (or comparison) between a user's pre-engagement expectations and their actual experience after interacting with a service (Wu & Norhayati, 2025).

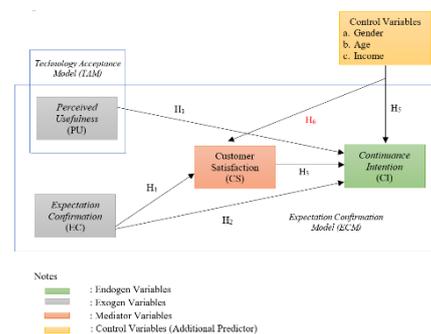
The standard indicators used to measure the Expectation Confirmation variable in this research context: Experience was better than expected; The service level was better than expected; Most of expectations were confirmed (Daneji et al., 2019; Biswas et al., 2019; Tseng et al., 2022; Ayyoub et al., 2023; Wu & Norhayati, 2025).

Customer satisfaction is described as a customer's feeling that arises from an evaluation of a service's performance relative to their expectations (Kotler & Keller, 2021). It is a cognitive or emotional response related to a specific focus, such as expectations, customer experience, or the service itself, used to compare the service received against what was expected (Ashfaq et al., 2019; Ayyoub et al., 2023). It is considered a highly individual assessment that is strongly influenced by personal expectations (Khotimah & Anas, 2022).

The standard indicators used to measure the Customer Satisfaction variable in this research context: QRIS functions well; Use QRIS was a wise one; The right thing by deciding to use QRIS; Feel extremely satisfied about overall experience of using QRIS; Sense of satisfaction with the subscription decision; Satisfied with the characteristics of the QRIS; QRIS is optimal (Daneji et al., 2019; Andrew &

Retno, 2022; Susanto et al., 2023; Kurniawan et al., 2024; Yulisetiari et al., 2024).

The role of customer satisfaction as a mediating variable is deemed capable of explaining the variance in the influence of exogenous variables on the endogenous variable (Lombu & Wardana, 2024; Wu & Norhayati, 2025). Prior research has established the following relationships: Perceived usefulness has a significant effect on continuance intention (Keraf et al., 2024; Lombu & Wardana, 2024; Sun, 2025; Rana et al., 2025; Vanelli et al., 2025). Expectation confirmation has a significant effect on continuance intention (Lee et al., 2023; Binekas & Prawira, 2023; Carissa et al., 2023; Kurniawan et al., 2024; Lee et al., 2025; Liu et al., 2025). Customer satisfaction has a significant effect on continuance intention (Lee & Hui-Chun, 2023; Wang et al., 2023; Mariana et al., 2023; Situmorang et al., 2025; Wu & Norhayati, 2025)). Expectation confirmation has a significant effect on customer satisfaction (Hariguna et al., 2023; Yang et al., 2023; Amin et al., 2024; Ooi et al., 2025; Ante, 2025). The determinant factors of gender, age, and income, as control variables, have a significant effect on continuance intention (Arshad & Sobia, 2021; Putra et al., 2022; Mamun et al., 2025).



**Figure 1. Research Model**  
Source: Davis (1989); Bhattacharjee (2001)

Based on the theoretical framework above, the hypotheses developed in this study are as follows:

**H1:** Perceived Usefulness has a significant effect on Continuance Intention.

**H2:** Expectation Confirmation has a significant effect on Continuance Intention.

**H3:** Customer Satisfaction has a significant effect on Continuance Intention.

**H4:** Expectation Confirmation has a significant effect on Customer Satisfaction.

**H5:** Gender, Age, and Income has a significant partially effect on Continuance Intention.

**H6:** Perceived Usefulness has a significant effect on Continuance Intention moderated by Gender.

This study employs a quantitative method using an explanatory research approach, combined with an associative research design. The objective is to test statistical hypotheses and analyse the direction and existence of causal relationships between exogenous and endogenous variables, including through mediation. The use of explanatory research within a quantitative study is considered highly relevant, as this approach can accurately and comprehensively test both the developed conceptual framework and the theoretical models of TAM and ECM. Associative research is utilized to identify the relational patterns among the study's variables. A significant advantage of employing an explanatory approach with the Partial Least Square (PLS) analysis technique is its ability to explain the causal relationships between latent and manifest variables. Furthermore, it is well-suited for handling complex models involving numerous latent and manifest variables.

Following the recommendation of Hair et al. (2020), the sample size is based on the number of indicators multiplied by five. As this study utilizes 23 indicators, the minimum sample size for this research framework is 115 respondents (23 indicators x 5), while still adhering to the characteristics used for sampling. To ensure a stable and robust maximum likelihood estimation solution, Hair et al. (2020) recommend an appropriate sample size between 100 respondents and 500 respondents. Therefore, this study employs a sample of 300 respondents. This sample

is distributed equally across three provinces, with 100 respondents drawn from Jakarta, 100 respondents from West Java, and 100 respondents from East Java.

This study utilizes both primary and secondary data sources. Primary data was obtained directly from respondent answers using a questionnaire as the research instrument. The questionnaire contained various statements related to the research variables. The measurement scale employed was a five-point Likert-type interval scale. Secondary data was acquired from various published reports from the banking industry, OJK, Bank Indonesia (BI), books, academic journals (both national and international), and scientific articles relevant to the topic under analysis. There are primary rationales for employing a five-point Likert scale, it provides a sufficient range of responses for the respondents. The scale is effectively understood and easily completed by respondents. Visually, a five-point interval scale is more appealing. A five-point interval scale is considered sufficient for observing the consistency of the response distribution, particularly when the sample size exceeds 100 respondents (Sugiyono, 2022)

The data analysis technique used in this study is Partial Least Square (PLS), executed with the assistance of SmartPLS statistical software. PLS is a statistical technique employed to design and test statistical models in the form of causality models. It is a general, linear, and cross-sectional Structural Equation Modelling (SEM) technique. In the context of this research, PLS is used to test the TAM and ECM theories by analysing the relationships between latent and observed (manifest) variables. The researcher employs PLS analysis developed based on components and variance. The PLS technique is advantageous as it permits the use of small sample sizes (even fewer than 100 samples) and does not require the data to be normally distributed or measured in specific proportions (Hair et al., 2020).

### III. RESULT AND DISCUSSION

The outer loadings (measurement model) are analysed to establish convergent validity and test the one-dimensionality of each construct. An indicator's loading factor is considered valid if its value is greater than or equal to the standard threshold of 0.70. The convergent validity results indicate that the outer loadings for all indicators, measuring the latent variables of Perceived Usefulness, Expectation Confirmation, Customer Satisfaction, Continuance Intention, and the demographic factors (Gender, Age, and Income), are greater than 0.70. This can be interpreted to mean that the manifest variables (indicators) effectively and adequately reflect their respective latent variables. Therefore, all indicators used in this study are declared valid.

**Table 1 Average Variance Extracted (AVE) Test**

Variables	Average Variance Extracted (AVE)
Continuance Intention	0.746
Customer Satisfaction	0.699
Expectation Confirmation	0.679
Perceived Usefulness	0.671

Source: Processed with SmartPLS, 2025

Based on Table 1, it can be explained that the variables Perceived Usefulness, Expectation Confirmation, Customer Satisfaction, and Continuance Intention each possess an Average Variance Extracted (AVE) value greater than the confirmatory threshold of 0.50. This indicates that the latent variables employed in this study have excellent discriminant validity.

**Table 2 Composite Reliability Test**

Variables	Composite Reliability (rho_c)
Continuance Intention	0.936
Customer Satisfaction	0.942
Expectation Confirmation	0.894
Perceived Usefulness	0.953

Source: Processed with SmartPLS, 2025

Based on Table 2, it is evident that the Composite Reliability (CR) values for the variables Perceived Usefulness, Expectation Confirmation, Customer Satisfaction, and Continuance Intention are all greater than 0.70. This value exceeds the standard rule of thumb (0.70) for confirmatory research, indicating that all latent variables in this study possess excellent reliability.

**Table 3 R<sup>2</sup> Test**

Variables	R-square
Continuance Intention	0.719
Customer Satisfaction	0.604

Source: Processed with SmartPLS, 2025

Based on Table 3, the R-square (R<sup>2</sup>) value for Customer Satisfaction is 0.604. This is interpreted as the Expectation Confirmation variable explaining 60.40% of the variance in Customer Satisfaction, while the remaining 39.60% is explained by other factors outside the model. Furthermore, the R-square (R<sup>2</sup>) value for Continuance Intention is 0.719. This indicates that the variables Perceived Usefulness, Expectation Confirmation, Customer Satisfaction, and the demographic factors (Gender, Age, and Income) collectively explain 71.90% of the variance in Continuance Intention. The remaining 19.10% is attributed to other variables outside the model and error. Both R<sup>2</sup> values fall within the moderate category of predictive power (being >0.50 and <0.75).

**Table 4 F<sup>2</sup> Test**

Hypothesis	f-Square	Criterion
Age -> Continuance Intention	0.011	Small
Customer Satisfaction -> Continuance Intention	0.503	Big
Expectation Confirmation -> Continuance Intention	0.028	Moderate
Expectation Confirmation -> Customer Satisfaction	1.524	Big
Gender -> Continuance Intention	0.016	Small
Gender x Perceived Usefulness -> Continuance Intention	0.001	Small

Hypothesis	f-Square	Criterion
Income -> Continuance Intention	0.007	Small
Perceived Usefulness -> Continuance Intention	0.055	Moderate

Source: Processed with SmartPLS, 2025

Based on Table 4, the F-square ( $f^2$ ) results can be interpreted. The influence of the Expectation Confirmation variable has a large effect ( $f^2 \geq 0.35$ ) on the Customer Satisfaction variable.

Table 5 Model Evaluation

Ratio	Cut-Off Value	Saturated Model	Evaluation Model
SRMR	< 0.08	0.054	Fit
d_ULS	< 0.95	1.270	Marginal
d_G	< 0.95	0.836	Fit
Chi-square	> 0.05	1344.806	Fit
NFI	> 0.90	0.820	Marginal

Source: Processed with SmartPLS, 2025

Based on Table 5, it is demonstrated that the SRMR, d\_G, and Chi-square values are within their respective *cut-off* thresholds. Conversely, the NFI (Normed Fit Index) value is below the recommended *cut-off* value, although it approaches the suggested threshold. The cause for the NFI value being below the 0.90 standard is attributed to the model being overly complex and the presence of non-significant paths. Despite the researcher increasing the sample size from 250 to 300 respondents, this adjustment did not yield a meaningful improvement in this index. The proposed solution to enhance the model's goodness of fit involves either removing non-significant variables (paths) or adding other relevant variables, such as perceived ease of use or perceived security.

Table 6 Path Coefficients Analysis

Hypothesis	O	M	ST DEV	O/ST DEV	PV	Criterion
Age -> Continuance Intention	-0.059	-0.061	0.035	1.689	0.091	Rejected
Customer Satisfaction -> Continuance Intention	0.693	0.691	0.080	8.679	0.000	Accepted
Expectation Confirmation -> Continuance Intention	-0.178	-0.179	0.089	2.006	0.045	Accepted

Hypothesis	O	M	ST DEV	O/ST DEV	PV	Criterion
Expectation Confirmation -> Customer Satisfaction	0.777	0.778	0.028	27.673	0.000	Accepted
Gender -> Continuance Intention	0.136	0.133	0.065	2.102	0.036	Accepted
Gender x Perceived Usefulness -> Continuance Intention	0.740	0.742	0.035	20.898	0.000	Accepted
Income -> Continuance Intention	0.049	0.050	0.032	1.512	0.131	Rejected
Perceived Usefulness -> Continuance Intention	0.298	0.303	0.097	3.080	0.002	Accepted

Source: Processed with SmartPLS, 2025

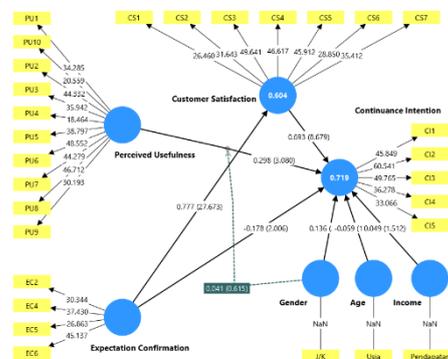


Figure 2. Path Coefficients Analysis  
Source: Processed with SmartPLS, 2025

The statistical test results indicate that the Perceived Usefulness variable has a t-statistic of 3.080, which is greater than the critical ratio of 1.96, and a p-value of 0.002, which is less than the alpha level of 0.05. This is interpreted as Perceived Usefulness having a significant positive effect on Continuance Intention. The path coefficient estimate for this relationship is 0.298. This value signifies that a one-unit increase in Perceived Usefulness is associated with a 0.298-unit increase in Continuance Intention, and vice versa. The indicators reflecting that QRIS mobile banking is easy to use, efficient, and simplifies the digital payment process were the most dominant in reflecting the Perceived Usefulness variable, which explains its variance effect on Continuance Intention. This finding aligns with the literature, confirming that Perceived Usefulness is a primary determinant influencing an individual's intention to use a technology like QRIS mobile banking (Lee et al., 2025). In the

context of QRIS mobile banking, its effectiveness, efficiency, and the numerous benefits it provides to customers foster the intention to continue using it for every digital transaction (Lee et al., 2025; Sun, 2025). Perceived usefulness is a critical determinant of continuance intention for technologies (such as QRIS mobile banking) that are perceived to enhance user performance (Rana et al., 2025; Mamun et al., 2025).

The business strategies implemented are expected to ensure that every customer has an awareness of the practical benefits of using QRIS mobile banking in Indonesia. This, in turn, is intended to foster customer engagement, manifesting as the continuous, long-term utilization of the QRIS application. Service providers must equip QRIS with contemporary security features, such as One-Time Passwords (OTP) and Secure Socket Layer (SSL) encryption technology, to minimize the risks of fraud and financial loss. This recommendation is based on field findings where indicators confirmed that QRIS is perceived as easy to use, efficient, and effective. To further enhance perceived usefulness, it is recommended that QRIS mobile banking providers develop and integrate features like "one-tap payment" (NFC-based), which has the potential to streamline the transaction process by eliminating two steps.

The statistical test results show that the Expectation Confirmation variable has a t-statistic of 2.006 (which is  $> 1.96$ ) and a p-value of 0.045 (which is  $< 0.05$ ). This is interpreted as Expectation Confirmation having a significant effect on Continuance Intention. The estimate for the path coefficient is 0.178. This can be interpreted to mean that if the Expectation Confirmation variable decreases by one unit, the Continuance Intention variable will increase by 0.178 times, and vice versa. Expectation confirmation is defined as the customer's perception of the congruence between their expectations of using the QRIS technology and its actual performance (Liu et al., 2025; Keraf et al., 2024). This finding indirectly validates the

results of several previous researchers who shared the same research interest (Amin et al., 2024; Kurniawan et al., 2024; Ayyoub et al., 2023; Andrew & Retno, 2022; Tseng et al., 2022). This current study indicates that the fulfilment of customer expectations significantly impacts the intention to use QRIS mobile banking (Kurniawan et al., 2024; Ayyoub et al., 2023; Andrew & Retno, 2022). This, in turn, drives their behaviour to continuously reuse the same QRIS service in order to regain the positive experiences they have previously felt (Amin et al., 2024).

QRIS mobile banking providers in Indonesia are advised to manage customer expectations effectively. This can be achieved by providing clear and accurate information regarding the QRIS service products offered. The objective is to ensure that customers form realistic expectations, thereby preventing dissatisfaction that may arise if the actual performance of QRIS does not align with their initial hopes. Furthermore, feedback management strategies must be optimized. Feedback provides valuable information, enabling the banking sector to understand the expectations, needs, and motivations of customers using QRIS mobile banking for digital payments. This recommendation is supported by field findings where indicators showed that the service features meet user needs and the QR code scanner performance is reliable (easy to read). The findings suggest a non-linear or asymmetric relationship; providers must continuously maintain service quality at a level that consistently meets customer expectations.

The statistical test results reveal that the Customer Satisfaction variable has a t-statistic of 8.679 (which is  $> 1.96$ ) and a p-value of 0.000 (which is  $< 0.05$ ). This is interpreted as Customer Satisfaction having a significant positive effect on Continuance Intention. The path coefficient estimate for this relationship is 0.693. This value signifies that a one-unit increase in Customer Satisfaction is associated with a 0.693-unit increase in Continuance Intention, and vice versa. Within the context of the Expectation-Confirmation

Model and the Information Systems Success Model, this finding is coherent. Customers who are satisfied with using QRIS mobile banking for their digital payment transactions tend to perceive its benefits and regard their choice to use it as a correct decision. Consequently, this satisfaction fosters an intention to continuously use QRIS mobile banking services in the future (Situmorang et al., 2025; Ooi et al., 2025; Vanelli et al., 2025).

QRIS mobile banking providers in Indonesia are advised to enhance both the speed and security of QRIS transactions. This includes implementing measures such as two-factor authentication, location verification, data encryption, and transaction limits. Furthermore, providers should develop useful QRIS features that align with customer needs, such as online payment capabilities, low-cost transfers, cash withdrawal/deposit functions (card less transactions), and other digital financial management tools. These recommendations are based on field findings where indicators showed: Customers perceive QRIS as the correct choice for their needs; Customers feel satisfied with the service performance they have received; The overall positive experience during QRIS usage significantly impacts long-term continuance intention. The satisfaction experienced by users has a substantial effect on their intention to use QRIS in the long term.

The statistical test results show that the Expectation Confirmation variable has a t-statistic of 27.673 (which is  $> 1.96$ ) and a p-value of 0.000 (which is  $< 0.05$ ). This is interpreted as Expectation Confirmation having a significant positive effect on Customer Satisfaction. The path coefficient estimate for this relationship is 0.777. This value signifies that a one-unit increase in Expectation Confirmation is associated with a 0.777-unit increase in Customer Satisfaction, and vice versa. This finding suggests that when the service performance of QRIS aligns with or exceeds pre-use expectations, it fosters a desire for continuous usage. This is because the customer perceives QRIS as the most

appropriate and wise solution for their digital transactions (Rana et al., 2025; Ooi et al., 2025; Liu et al., 2025).

QRIS mobile banking providers in Indonesia are advised to improve the User Interface (UI) of the application to enhance the overall customer experience. They should also add features personalized to customer needs and improve network facilities and quality to ensure the reliability of digital banking services. This will enable banks to develop new and innovative services. Furthermore, Bank Indonesia (BI) and OJK have regulated information system security and cybersecurity resilience for payment system operators to enhance digital transaction security in Indonesia. These recommendations are based on field findings where indicators showed that QRIS is perceived as easy to use, efficient, and effective. The performance of the QRIS service is perceived as aligning with user expectations, and the resulting satisfaction reflects a level that exceeds customer expectations.

The statistical test results for the control variables are as follows: The Gender's t-statistic is 2.102 ( $> 1.96$ ) and the p-value is 0.036 ( $< 0.05$ ), this is interpreted as the Gender variable having a significant effect on Continuance Intention. The Age's t-statistic is 1.689 ( $< 1.96$ ) and the p-value is 0.091 ( $> 0.05$ ), this is interpreted as not significant. The Income's t-statistic is 1.512 ( $< 1.96$ ) and the p-value is 0.131 ( $> 0.05$ ), this is interpreted as not significant. The path coefficient estimate for Gender is 0.136. This signifies that a one-unit change in the gender factor is associated with a 0.136-unit increase in Continuance Intention, and vice versa. The findings indicate that gender can influence the design and features of QRIS mobile banking in Indonesia. This is logical, as service providers must adjust their digital service products to align with customer preferences and approximate the nature of customer interactions with the bank (Mamun et al., 2025). The gender factor, as a control variable, is deemed to influence both cognitive and emotional decision-

making in the use of specific QRIS mobile banking services. It is also valuable for understanding the differences in preferences between customer segments (Mamun et al., 2025; Putra et al., 2022). In the context of the TAM, ECM, and TPB theories, examining demographic factors as control variables allows firms to more specifically understand the preferences, expectations, and needs of their service users (Putra et al., 2022; Arshad & Sobia, 2021).

The banking sector must enhance financial literacy, particularly for female customers, to improve their comprehension and use of QRIS mobile banking. Management within the banking industry also needs to consider gender-responsive design for QRIS mobile banking, ensuring it is equally accessible and user-friendly for both female and male customers. Furthermore, the design should be responsive, utilize clear and easily understood language, and incorporate features that can be customized to the distinct needs and preferences of both women and men. The gender factor influences continuance intention, leading to the recommendation that providers develop a responsive, gender-specific User Interface (UI). This could include offering a "dark mode" theme to cater to male gender preferences, while utilizing pastel-coloured notifications to align with female gender preferences.

Statistical testing for the moderating effect of Gender on the relationship between Perceived Usefulness and Continuance Intention (Gender \* Perceived Usefulness) yielded a t-statistic of 20.898 ( $> 1.96$ ) and a p-value of 0.000 ( $< 0.05$ ). This is interpreted as Gender significantly moderating the influence of Perceived Usefulness on Continuance Intention. The path coefficient estimates of 0.740 indicates that a one-unit shift in the gender factor (e.g., from male preference to female preference, or vice versa) will strengthen the influence of Perceived Usefulness on Continuance Intention by 0.740 times. A Multi-Group Analysis (MGA) confirmed that the relationship is significantly positive

for both groups. However, the path was stronger for the female participant group (t-statistic = 21.002) compared to the male group (t-statistic = 12.019) in influencing QRIS selection preferences based on gender.

The customer's gender category is proven to strengthen the perceived benefits of using QRIS mobile banking, which in turn impacts repeated usage intention. This finding indicates a need for management to incorporate demographic factors into the formulation of their business strategy documents. This is particularly relevant as QRIS mobile banking usage is dominated by the female gender category, where it is often applied for recurring payments (e.g., electricity, phone credit, water bills, and other essential utilities). The influence of the gender factor can be further strengthened if management provides stimuli such as discounts or rebates on digital bill payments, which are frequently transacted by female users.

It is recommended that the management of banking service providers in Indonesia continuously pursue innovation and development of QRIS mobile banking to enhance the quality, efficiency, and security of digital financial services. Although many banks have already innovated existing QRIS services, such as MPM (Merchant Presented Mode), CPM (Customer Presented Mode), and QRIS TTS (Cash Withdrawal, Transfer, and Deposit), the Indonesian banking sector must, in the future, address the challenge of cross-border (inter-country) QRIS mobile banking. This will enable customers to conduct digital financial transactions internationally. Further innovations should include integration with tax and financial reporting systems, thereby facilitating enhanced financial transparency for business operators. It is strongly recommended that management continue the implementation of technological innovations such as QRIS Tap (NFC-based). This technology enables customers to transact without needing to manually scan a QR code, thereby increasing effectiveness and efficiency. Furthermore,

providers are expected to integrate QRIS mobile banking with other payment systems, such as BI-RTGS and BI-FAST, to enhance transactional flexibility and convenience via a user-friendly interface. This includes providing clear QRIS usage guides, creating features that are easily understood, and implementing design personalization based on gender preferences.

It is recommended that the management of banking service providers in Indonesia continuously pursue innovation in integrating QRIS mobile banking with other digital payment services, such as e-wallets and investment applications, to enhance transactional flexibility. This strategy must include enhancing transparency and accountability in every QRIS mobile banking transaction to maintain customer trust. Banking management in Indonesia is expected to provide innovative Personal Financial Management (PFM) features, assisting customers in managing expenditures and automating savings. This includes features for setting transaction limits to help customers control their finances, the availability of responsive, toll-free in-application chat support, and the necessary development of NFC-based QRIS features to overcome QR code scanning issues.

#### IV. CONCLUSION

Based on the analysis and discussion in the preceding chapters, the following conclusions are drawn: Perceived usefulness significantly influences continuance intention; Expectation confirmation significantly influences continuance intention; Customer satisfaction significantly influences continuance intention, this finding indicates that customer satisfaction fully mediates the effect of expectation confirmation on continuance intention; Expectation confirmation significantly influences customer satisfaction; The demographic control variable of gender significantly influences continuance intention, whereas age and income do not have a significant impact; The relationship

between perceived usefulness and continuance intention is significantly moderated by gender, this influence was found to be stronger for the female participant group compared to the male participant group, indicating a stronger effect on QRIS usage preferences.

Future studies should adopt alternative theoretical models to capture the phenomenon of digital financial technology adoption in Indonesia more holistically. While the researcher implemented strict criteria during sample collection to minimize data bias, future studies are encouraged to involve the two remaining provinces: North Sumatra and Central Java. It is recommended that future research employ longitudinal or panel data (spanning more than two years and involving banking customers from multiple provinces) to capture a complete and more dynamic phenomenon of QRIS mobile banking adoption in Indonesia. Future researchers are encouraged to develop a more detailed continuance intention measurement model, including the development of new indicators, while maintaining specificity to the context of digital financial service adoption. Future development may include modifications to the continuance intention model to optimize its precision and accuracy in measurement.

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