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Research Article

QRIS ADOPTION IN RELIGIOUS ORGANIZATIONS: EXTENDED UTAUT2 WITH GEOGRAPHIC MODERATION

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Abstract
This study examines the determinants of Quick Response Code Indonesian Standard (QRIS) mobile payment usage within religious organizations by applying an extended Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) framework. The model integrates perceived risk, perceived security, and exposure to innovation, while testing geographic location as a moderating variable. Using a quantitative approach, a survey was conducted among 4,516 congregants of the Huria Kristen Batak Protestan (HKBP) Church across 32 districts in Indonesia, and the data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. The results indicate that performance expectancy, facilitating conditions, habit, perceived security, and exposure to innovation significantly influence QRIS usage, with habit emerging as the most dominant predictor. In contrast, effort expectancy and perceived risk do not show significant effects, suggesting that ease of use has become standardized and institutional trust mitigates perceived risk in this context. Geographic location significantly moderates the effects of effort expectancy, facilitating conditions, and habit, highlighting the role of regional digital infrastructure disparities. The model explains 74.7% of the variance in QRIS usage. This study contributes to the literature by extending UTAUT2 into a trust-based non-profit institutional context and introducing geographic moderation in digital payment adoption research, while providing practical insights for policymakers and religious institutions to design more inclusive and infrastructure-sensitive digital financial strategies.

Keywords: Digital Divide; Geographic Moderation; Mobile Payment; PLS-SEM; QRIS Adoption; Religious Organizations; UTAUT2

INTRODUCTION

The rapid expansion of digital financial services has transformed payment ecosystems globally, particularly in emerging economies (Kapoor & Dwivedi, 2022; Dwivedi & Rana, 2020). Mobile payment systems have become central to financial inclusion strategies and cashless society initiatives (Liébana-Cabanillas et al., 2017; Oliveira et al., 2016). In Indonesia, the implementation of the Quick Response Code Indonesian Standard (QRIS) by Bank Indonesia represents a significant milestone in standardizing

digital transactions across financial platforms. While prior studies have examined mobile payment adoption in commercial settings (Tam et al., 2020; Soodan & Rana, 2020), limited research has explored its diffusion within non-profit and faith-based institutions. While QRIS adoption has been widely studied in commercial settings such as retail consumers, micro and small enterprises, and banking services (Nurendra et al., 2025; Sajili, 2025), limited attention has been given to its implementation in non-profit and religious institutions. Religious organizations represent a distinct institutional environment in which financial transactions are embedded within collective trust, moral accountability, and social responsibility. Unlike commercial contexts, digital payment adoption in religious institutions is closely related to congregational trust and institutional credibility. Churches, for example, manage congregational funds and offerings that increasingly require transparent and efficient financial systems.

The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) remains one of the most robust frameworks for explaining consumer technology adoption (Venkatesh et al., 2012). The model has been widely applied in mobile banking and mobile wallet research across different cultural contexts (Raza et al., 2019) (Alalwan et al., 2017; Merhi et al., 2019). However, scholars argue that financial technologies require additional trust-based constructs, particularly perceived risk and perceived security, due to the inherent uncertainty in digital transactions (Pal & Herath, 2020; Featherman & Pavlou, 2003) (Li, 2020).

In financial technology research, perceived risk and perceived security are frequently incorporated to explain user hesitation and trust in digital transactions (Apau et al., 2025; Soodan & Rana, 2020). In many commercial contexts, perceived risk acts as a substantial barrier to adoption. However, within trust-based institutions such as churches, the presence of strong institutional credibility may mitigate perceived risk concerns. The interaction between institutional trust and risk perception in digital payment usage remains underexplored, particularly in religious settings. Another underexplored dimension is geographic heterogeneity. Prior studies highlight that digital infrastructure disparities and regional digital divides significantly influence technology adoption (Deursen & Dijk, 2019; Hilbert, 2016) (Sun, 2021). In emerging economies, infrastructure readiness may moderate the effects of effort expectancy and facilitating conditions (Pick, 2020; Oliveira et al., 2016). However, limited empirical research integrates geographic moderation into UTAUT-based fintech adoption models.

Moreover, geographic disparities in digital infrastructure may shape technology adoption behavior. QRIS usage depends on internet connectivity, smartphone accessibility, and digital literacy, which vary across regions. Differences between urban and semi-rural areas may influence perceptions of ease of use, facilitating support, and habitual behavior. Although digital divide literature acknowledges infrastructure inequality, the moderating role of geographic location in QRIS adoption has rarely been empirically tested. In the context of the Huria Kristen Batak Protestan (HKBP) Church, several operational challenges highlight the relevance of digital payment adoption. Manual cash counting during worship services may lead to delays, errors, damaged banknotes, and security risks for treasurers responsible for holding funds before bank deposits. Although QRIS provides a more transparent and efficient alternative, not all congregations have adopted it, partly due to differences in infrastructure readiness and openness to innovation.

Although previous studies have extensively applied UTAUT2 in mobile payment and digital financial services contexts (Venkatesh et al., 2012; Slade et al., 2015; Oliveira et al., 2016), limited research has examined QRIS adoption within religious organizations, particularly by incorporating geographic context as a moderating variable. Existing studies largely focus on individual consumers in commercial environments, leaving institutional and faith-based settings underexplored. Furthermore, prior research has rarely integrated the digital divide perspective into UTAUT2 to explain contextual disparities in technology adoption. Therefore, this study addresses two main gaps: (1) the contextual gap related to religious organizations as institutional adopters of QRIS, and (2) the theoretical gap concerning the moderating role of geographic digital divide factors in the UTAUT2 framework.

Despite the extensive application of UTAUT2 in commercial fintech environments, its extension into trust-based, non-profit institutional contexts remains underexplored. Religious organizations operate within high-trust social structures where institutional credibility may reduce perceived technological risk (Lin & Wang, 2020; Luo, 2021). Moreover, habit formation in repetitive religious practices may play a stronger role compared to conventional retail settings (Tam et al., 2020). Therefore, existing models may not fully capture digital payment behavior in faith-based communities. To address these gaps, this study extends the UTAUT2 framework by incorporating perceived risk, perceived security, and exposure to innovation, while simultaneously testing geographic location as a moderating variable. Using data from 4,516 HKBP congregants across 32 districts, this study provides a context-sensitive understanding of

QRIS mobile payment usage within a non-profit, trust-based institutional setting. Accordingly, this study aims to extend UTAUT2 by incorporating geographic moderation effects to better explain QRIS adoption behavior in religious organizations.

RESEARCH METHOD

This study employed a quantitative research design using a cross-sectional survey approach. The target population consisted of congregants of the Huria Kristen Batak Protestan (HKBP) Church across Indonesia. HKBP is administratively organized into districts; therefore, data were collected from 32 districts and one preparatory district to ensure broad geographic representation. A total of 5,000 questionnaires were distributed through both online (Google Form link and QR barcode) and offline (paper-based) formats. After data screening, 4,516 responses were deemed valid and eligible for analysis. A total of 474 questionnaires were excluded because respondents did not meet the inclusion criteria, namely being registered HKBP congregants and having familiarity with QRIS transactions.

Data were collected using a structured questionnaire distributed both online and offline to administrators of religious organizations that have experience or exposure to QRIS implementation. A purposive sampling approach was employed to ensure that respondents had relevant knowledge regarding digital payment usage within their institutions. Snowball sampling was considered appropriate for this study because:

1. The population was geographically dispersed across multiple districts.
2. Access to a complete sampling frame was limited.
3. The study aimed to obtain a large and diverse sample efficiently.

Although non-probability sampling limits generalizability, the large sample size (n = 4,516) enhances statistical robustness and supports structural equation modeling analysis. The statistical power of the study was evaluated based on the minimum sample size requirement for PLS-SEM using the "10-times rule" and power analysis recommendations (Hair et al., 2022). Given the maximum number of structural paths directed at a single construct, the sample size exceeded the minimum threshold, indicating adequate statistical power to detect medium effect sizes at a 5% significance level.

This study extends the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) framework by incorporating perceived risk, perceived security, exposure to innovation, and geographic location as moderating variables. The measurement instrument was developed based on validated scales from prior studies (Venkatesh et al., 2012; Slade et al., 2015) and adapted to the QRIS context. All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

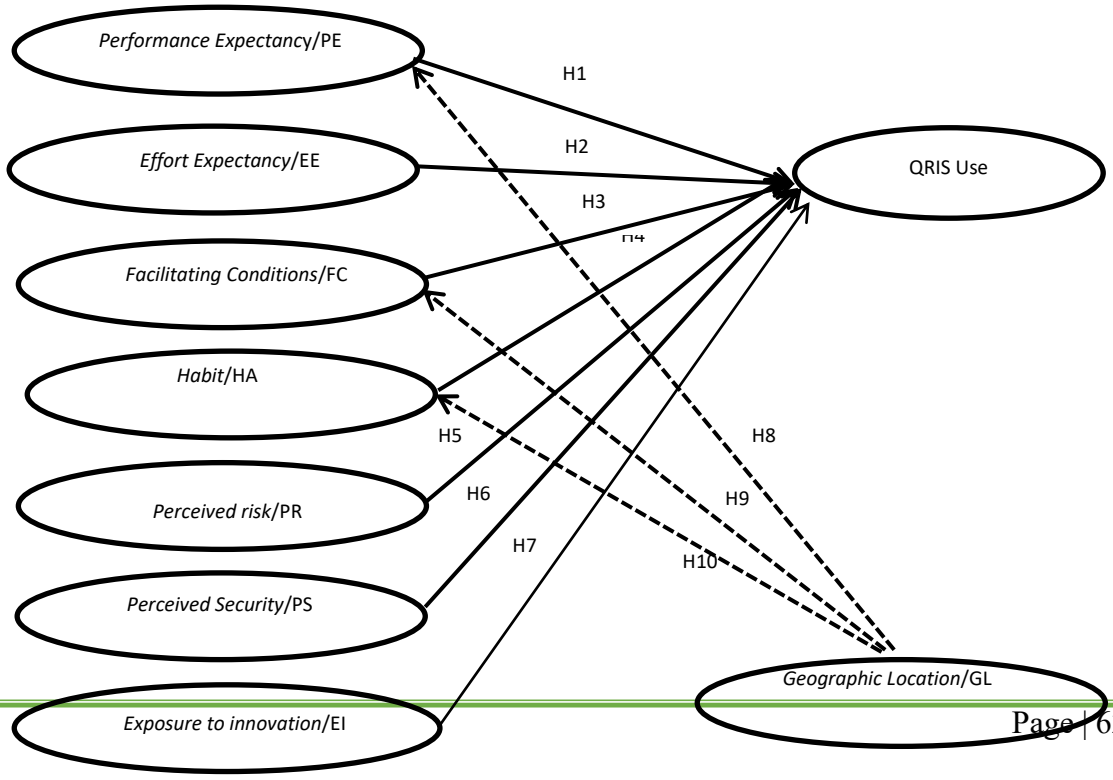

Figure 1. The Conceptual Framework of Each Variable

Measurement items were adapted from prior UTAUT2, perceived risk, and diffusion of innovation studies and contextualized to reflect religious institutional settings. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software. The analysis followed a two-stage approach:

1. Measurement Model Evaluation
   a. Indicator reliability (outer loadings > 0.70)
   b. Internal consistency reliability (Cronbach's Alpha and Composite Reliability > 0.70)
   c. Convergent validity (Average Variance Extracted > 0.50)
2. Structural Model Evaluation
   a. Path coefficients
   b. T-statistics and p-values (bootstrapping with 5,000 subsamples)
   c. Coefficient of determination (R^2)
   d. Moderation effects of geographic location

Thus, SmartPLS was deemed appropriate for estimating both direct and moderating relationships within the extended UTAUT2 framework. Instrument validation was conducted through the evaluation of convergent validity, internal consistency reliability, and structural model assessment.

1. All indicator outer loadings exceeded 0.70, indicating satisfactory indicator reliability.
2. Cronbach's Alpha and Composite Reliability values for all constructs were above 0.70, demonstrating strong internal consistency.
3. Average Variance Extracted (AVE) values exceeded 0.50, confirming convergent validity.

Bootstrapping results (5,000 resamples) were used to test the statistical significance of path coefficients at a 95% confidence level ($t > 1.96$). The R^2 value for QRIS usage was 0.747, indicating that approximately 74.7% of the variance in usage behavior is explained by the model, which can be categorized as substantial predictive power.

RESULTS AND DISCUSSION

The findings confirm that performance expectancy remains a dominant predictor of QRIS adoption, consistent with previous UTAUT2-based studies (Oliveira et al., 2016; Raza et al., 2019). However, the moderating role of geographic context highlights that regional digital disparities influence institutional technology adoption, extending prior consumer-focused findings.

The results are presented in accordance with the PLS-SEM analysis procedure, beginning with measurement model evaluation followed by structural model assessment to answer the research questions. Before testing the structural relationships, the measurement model was evaluated to ensure that all constructs met the required standards of reliability and validity. Following the guidelines of Hair et al. (2022) used indicator reliability, internal consistency reliability, and convergent validity. Indicator reliability was examined through outer loadings, while internal consistency was assessed using Cronbach's Alpha and Composite Reliability (CR). Convergent validity was evaluated using the Average Variance Extracted (AVE).

Table 1. Summary of Data Validity and Reliability

Variabel	Item	Outer Loading	Cronbach's Alpha	Composite Reliability	AVE
Performance Expectancy (X1)	X1.1	0.902	0.942	0.956	0.811
	X1.2	0.911			
	X1.3	0.909			
	X1.4	0.879			
	X1.5	0.902			
	X2.1	0.890	0.949	0.960	0.798

Variabel	Item	Outer Loading	Cronbach's Alpha	Composite Reliability	AVE
Effort Expectancy (X2)	X2.2	0.888			
	X2.3	0.899			
	X2.4	0.907			
	X2.5	0.880			
	X2.6	0.896			
Facilitating Conditions (X3)	X3.1	0.840	0.943	0.953	0.746
	X3.2	0.878			
	X3.3	0.889			
	X3.4	0.816			
	X3.5	0.894			
	X3.6	0.850			
	X3.7	0.875			
Habit (X4)	X4.1	0.902	0.942	0.956	0.813
	X4.2	0.910			
	X4.3	0.872			
	X4.4	0.915			
	X4.5	0.909			
Perceived Risk (X5)	X5.1	0.932	0.926	0.953	0.870
	X5.2	0.934			
	X5.3	0.933			
Perceived Security (X6)	X6.1	0.875	0.938	0.952	0.800
	X6.2	0.883			
	X6.3	0.913			
	X6.4	0.908			
	X6.5	0.893			
Exposure to Innovation (X7)	X7.1	0.897	0.957	0.965	0.822
	X7.2	0.919			
	X7.3	0.917			
	X7.4	0.899			
	X7.5	0.903			
	X7.6	0.906			
Geographical Location (M1)	M1.1	0.891	0.931	0.948	0.784
	M1.2	0.918			
	M1.3	0.883			
	M1.4	0.905			
	M1.5	0.826			
Digital Payment QRIS Use (Y)	Y1.1	0.922	0.956	0.966	0.850
	Y1.2	0.921			
	Y1.3	0.933			
	Y1.4	0.928			
	Y1.5	0.906			

As shown in Table 1, all constructs met the recommended thresholds for reliability and validity. The outer loadings of all indicators exceeded 0.70, indicating that each item sufficiently represented its underlying construct. Cronbach's alpha values were above 0.70, confirming acceptable internal consistency reliability. Similarly, composite reliability values exceeded the recommended minimum threshold of 0.70, suggesting strong construct reliability. Furthermore, all constructs demonstrated an average variance extracted (AVE) value above 0.50, indicating adequate convergent validity. This implies that each construct explains more than 50% of the variance of its indicators, as recommended in the partial least squares structural equation modelling literature (Hair et al., 2018; Henseler et al., 2016). Overall, these results confirmed that the measurement model was statistically sound and suitable for subsequent structural model analysis. Therefore, hypothesis testing and path analysis could be conducted with confidence in the robustness of the measurement instruments (Henseler et al., 2016; Schermelleh-Engel et al., 2003).

After confirming the adequacy of the measurement model, the structural model was evaluated to examine the explanatory power of the proposed framework. One of the key indicators in partial least squares structural equation modeling (PLS-SEM) is the R-squared (R^2), which represents the proportion of variance in the endogenous construct explained by its predictor variables. According to Hair et al. (2022), R^2 values of 0.75, 0.50, and 0.25 can be described as substantial, moderate, and weak, respectively, in behavioral research.

Table 2. R-Square

Variabel	*R-Square*
Performance Expectancy	0.500
Habit	0.629
Facilitating Conditions	0.526
Digital Payment QRIS Use	0.747

As shown in Table X, the R^2 value for QRIS Usage is 0.747. This indicates that 74.7% of the variance in QRIS usage behavior is explained by performance expectancy, effort expectancy, facilitating conditions, habit, perceived risk, perceived security, exposure to innovation, and geographic location. Based on the classification suggested by Hair et al. (2022), this value can be considered substantial, demonstrating the strong explanatory power of the proposed model. This finding suggests that the extended UTAUT2 framework, combined with trust-related and contextual variables, effectively captures the key determinants of QRIS adoption within religious institutions. The high R^2 value indicates that the model has strong predictive relevance and supports the robustness of the theoretical integration proposed in this study.

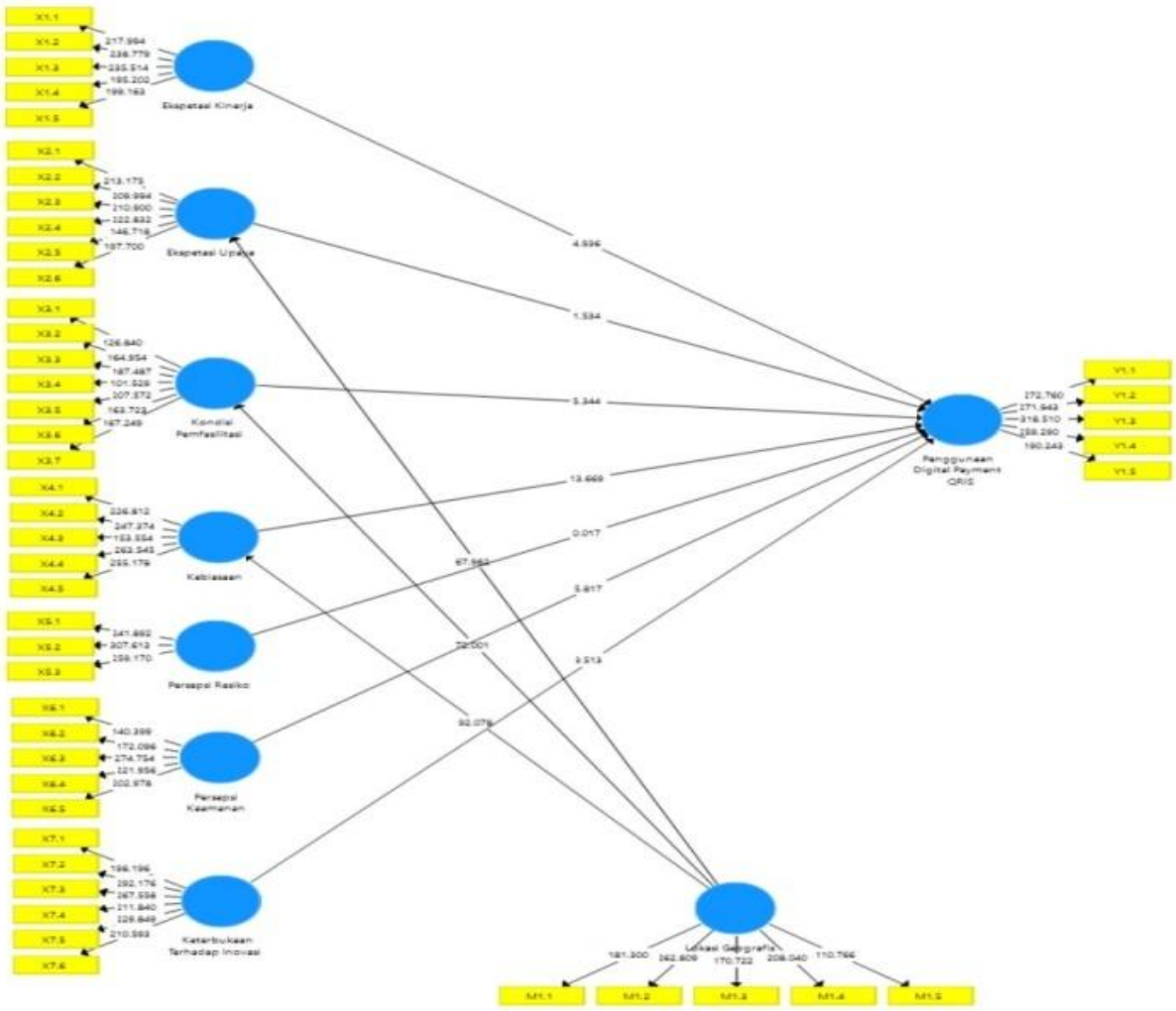

Figure 2. PLS Bootstrapping

After confirming the adequacy of the measurement and structural model through reliability and R^2 evaluation, hypothesis testing was conducted by examining the standardized path coefficients, t-statistics, and p-values obtained from the bootstrapping procedure (5,000 resamples). The path coefficient (β) represents the strength and direction of the relationship between the constructs, while the p-value indicates statistical significance. According to (Hair et al., 2022), a t-value greater than 1.96 ($p < 0.05$) indicates statistical significance at the 5% level.

Table 3. Path Coefficient

Hypothesis	*Original Sample*	*T Statistics*	*P Values*	Description
Performance Expectancy > Digital Payment QRIS Use	0.109	4.936	0.000	Accepted
Effort Expectancy > Digital Payment QRIS Use	0.034	1.534	0.126	Rejected
Facilitating Conditions > Digital Payment QRIS Use	0.117	5.344	0.000	Accepted
Habit > Digital Payment QRIS Use	0.362	13.669	0.000	Accepted
Perceived Risk > Digital Payment QRIS Use	0.000	0.017	0.986	Rejected
Perceived Security > Digital Payment QRIS Use	0.082	5.817	0.000	Accepted
Exposure to Innovation > Digital Payment QRIS Use	0.241	9.513	0.000	Accepted
Geographical Location > Effort Expectancy	0.707	67.982	0.000	Accepted
Geographical Location > Habit	0.793	92.078	0.000	Accepted
Geographical Location > Facilitating Conditions	0.725	72.001	0.000	Accepted

As shown in Table 6, several constructs significantly influence QRIS usage. Habit demonstrates the strongest effect ($\beta = 0.793$, $p < 0.001$), indicating that repeated exposure and routine usage substantially shape digital payment behavior. This finding confirms the consumer extension of UTAUT2, which posits that habitual behavior becomes a dominant predictor in the post-adoption stages (Venkatesh et al., 2012). The result also aligns with recent fintech research highlighting the critical role of behavioral automaticity in mobile payment continuance (Tam et al., 2020). Performance expectancy also showed a significant positive effect ($\beta = 0.109$, $p < 0.05$), suggesting that congregants are more likely to use QRIS when they perceive it as enhancing transaction efficiency and transparency. This is consistent with the utilitarian foundation of UTAUT2 and prior digital payment studies in emerging markets (Koenig-Lewis et al., 2015; Patil et al., 2020; Slade et al., 2015).

Facilitating conditions significantly affect QRIS usage ($\beta = 0.117$, $p < 0.05$), indicating that infrastructure readiness, internet access, and institutional support play an important enabling role. This supports the findings from mobile wallet adoption research, which emphasizes the importance of technological support systems (Raza et al., 2019). Perceived security also has a significant positive influence ($\beta = 0.082$, $p < 0.05$). This suggests that confidence in system security strengthens adoption decisions. In contrast, perceived Risk does not significantly affect QRIS usage ($\beta = 0.000$, $p > 0.05$).

While traditional perceived risk theory posits risk as a barrier (Singh et al., 2019; Fatimah et al., 2024), the insignificance in this context may be explained by strong institutional trust within the religious organization, which buffers uncertainty perceptions. Similarly, effort expectancy does not significantly influence QRIS usage ($\beta = 0.109$, $p > 0.05$). This may reflect the "standardization of ease" phenomenon, in which QRIS interfaces have become sufficiently familiar and uniform that ease of use is no longer a differentiating factor (Patil et al., 2020) Exposure to innovation shows a significant positive effect ($\beta = 0.241$, $p < 0.05$), supporting the Diffusion of Innovation theory (Rogers et al., 2003). Individuals with greater openness to technological experimentation demonstrate stronger adoption tendencies. Overall, the results indicate that behavioral and institutional factors (habit, security, and facilitating conditions) exert a stronger influence than cognitive complexity considerations (effort expectancy) or abstract uncertainty perceptions (perceived risk).

Critical Analysis of Rejected Hypotheses

The findings of this study surprisingly indicate that Effort Expectancy (EE) does not significantly impact the use of QRIS among the HKBP congregation. Although the path coefficient is positive, this variable did not emerge as a primary determinant of usage behavior (Al-Saedi et al., 2020). This phenomenon can be explained through the mechanism of "standardization of ease."

In Indonesia's current digital payment ecosystem, QRIS operational procedures—ranging from opening the app and scanning the code to transaction confirmation—have become a uniform and intuitive sequence of actions for users. When a technology reaches a specific level of maturity, and the user interface (UI) is standardized across various platforms (e.g., GoPay, m-banking), the variation in perception between "easy" and "difficult" becomes marginal. Consequently, effort expectancy loses its statistical discriminatory power because respondents perceive this ease as a basic requirement rather than a motivational driver. In a religious context, congregants prioritize functional benefits and transparency over technical operational considerations, which are now considered commonplace.

Perceived Risk and the Institutional Trust Buffer

Similarly, perceived risk (PR) was found to have no significant impact on QRIS usage. Theoretically, financial and privacy risks often serve as primary barriers to the adoption of innovation. However, in the context of religious organizations, an "institutional trust buffer" effectively mitigates these concerns.

Congregants typically maintain a high level of trust in church authorities. When the church officially adopts QRIS as a channel for offerings, congregants perceive the system as verified and secure. Furthermore, the status of QRIS as a national standard regulated by Bank Indonesia provides a sense of systemic security that outweighs individual anxiety. Concerns regarding data breaches or transaction failures remain abstract and are not potent enough to alter behavior already driven by established habits and a multi-layered sense of security. This confirms that in trust-based communities, risk factors are often secondary to the credibility of the adopting institution

The results show that performance expectations have a beneficial and substantial impact on QRIS use. This relationship is logical because performance expectations act as a benefit calculator. When QRIS is perceived to speed up transactions, reduce errors, and streamline the payment process, the cognitive cost of choosing QRIS becomes lower than the perceived benefits. Consequently, the decision to use QRIS is no longer driven by mere curiosity but becomes a rational choice, repeated because the benefits are tangible in daily transactions and offerings.

Performance expectations shape the belief that using QRIS (Quick Response Code Indonesian Standard) can improve transaction efficiency and quality. These findings indicate that the stronger the perceived benefits of QRIS, the greater the likelihood of QRIS use. These findings are in accordance with the UTAUT/UTAUT2 framework, which positions performance expectancy as the primary driver of technology adoption because utilitarian benefits directly drive use intentions and behavior (Granić, 2024). Similarly, empirical findings in the QRIS context also indicate that performance expectancy plays a significant role in driving QRIS intention and use across various respondent segments (Hamzah Muchtar et al., 2024). This aligns with research findings suggesting that performance expectancy is a key determinant of behavioral intention in adopting emerging technologies, and that the benefits users derive from technology can significantly predict use intention (Puspitasari & Salehudin, 2022).

Effort expectancy refers to the perceptions of the ease of use of a technology. In general, technology perceived as easy to use tends to be quicker to use. However, in this study, although the coefficient for effort expectancy was positive, its influence did not emerge as a primary determinant of QRIS use. The procedure of opening the app, scanning the code, and confirming the transaction was perceived as a natural sequence of steps, as easy as handing over cash.

This condition can be explained by the mechanism of ease of standardization. When technology is commonplace and procedures are uniform (open app, scan, confirm), the variation in perceptions of ease versus difficulty becomes small. If nearly all respondents rate the process as fairly easy, effort expectancy loses its statistical discriminatory power and no longer appears as a primary driver of use. In the church context, use decisions also tend to be driven by more weighty factors, such as performance benefits (record-keeping and transparency), facilitating support, and familiarity, rather than technical considerations, which are considered commonplace. These results contradict some previous findings that place effort expectations as a driver of adoption (Abikari et al., 2023). In practice, QRIS is not perceived as requiring significant effort to understand.

Facilitating conditions are crucial for encouraging QRIS use because they include support that facilitates smooth transactions, such as stable internet access, compatible devices, and assistance or guidance for users who need it. When these supporting elements are available, user confidence tends to increase, making QRIS more reliable. In worship settings, facilitating conditions are evident in the placement of easily accessible and clearly scannable QR codes, adequate network quality, and committees ready to assist new congregants.

When the environment is perceived as supportive through adequate infrastructure and assistance, technology use tends to increase (Ganar et al., 2021). In practice, a positive experience not only encourages repeat use but also builds a positive image that church transaction management can be carried out more orderly and adaptively. Thus, facilitating conditions are not merely a technical factor but also act as a trigger for the formation of new habits in digital transactions. Habit emerged as the most dominant factor in the model. This means that the stronger a person's digital payment routine, the higher the likelihood of QRIS use. In UTAUT2, habit is understood as the tendency to act automatically due to repetition and comfort. In the QRIS context, habits are formed through repeated experiences in various transaction situations, so that use becomes reflexive and no longer relies on lengthy rational deliberation.

Habit has the strongest and most significant influence on QRIS use (Hussain et al., 2018). After repeated QRIS transactions result in a problem-free experience, the decision to use no longer requires a benefit-risk evaluation each time. Consequently, QRIS becomes the default option that comes to the user's mind first. In the church context, once a digital routine has been established in daily transactions, scanning a QR code for offerings becomes a continuation of the same behavior, therefor adoption does not depend on weekly persuasion but is maintained by routine. These results are consistent with UTAUT2, which includes habit as a determinant of use behavior in the consumer context. Recent QRIS findings also indicate that habit is a key factor driving QRIS intention and use (Koenig-Lewis et al., 2015)

Risk perception had a negative effect; however, the difference was not statistically significant. This means that concerns about risks such as data breaches or transaction failures did not emerge as a major barrier to QRIS use in this study (Slade et al., 2015, p. 863). Risk perception refers to anxiety about potential losses, such as data misuse, process failures, or the leakage of personal information. While many innovations often hinder adoption, QRIS has been implemented in a different context. Risk perception showed a negative effect, but it was not significant. When QRIS became a national standard with regulatory oversight, risk was perceived as something controllable and rarely experienced in real life by users (Johnson et al., 2017, p. 119) (Slade et al., 2015, p. 863). If daily transaction experiences were more frequent and normal, risk became an abstract concern that was not strong enough to influence behavior. In the church context, increased trust in the church institution can also minimize the risk, allowing other variables (habits, facilities, and security) to become more dominant in explaining use behavior. Consistent findings have been found in several QRIS studies in Indonesia, which report that perceived risk is not always significant in explaining QRIS intention/use, especially when the service is already considered official and widely used (Koenig-Lewis et al., 2015, p. 544) (Liébana-Cabanillas et al., 2014, p. 472) (Yang et al., 2011, p. 138).Perceived security has a positive and significant effect on QRIS use. Security functions as a "psychological license" to conduct digital transactions. When data protection, privacy, and transaction security are trusted, psychological barriers are lowered, trust increases, and use becomes more daring and frequent. Security also breaks the chain of worry: not only does it reduce fear, but it also strengthens the belief that transactions will be completed without loss, thus increasing repeat use and fostering habits. These results align with empirical QRIS findings showing that perceived security influences QRIS intention/use, including in the context of MSMEs and the younger generation (M. Rahman & Islam, 2006). In churches, security is also perceived through the belief that funds are deposited into church accounts and properly recorded. Trust in regulators and religious institutions creates a layered sense of security that strengthens use decisions.

Exposure to innovation has a positive and significant effect on QRIS adoption. More open individuals tend to experiment more quickly, are more resilient to minor errors, and are more proactive in seeking solutions to overcome obstacles. This finding aligns with evidence from QRIS studies that incorporate innovativeness/personal innovativeness as a driver of QRIS adoption intention, indicating that exposure to new technology strengthens acceptance of QR-based payments. Exposure to innovation reflects a willingness to accept and experiment with new technologies. A positive attitude toward innovation makes QRIS more readily accepted, enabling educational and promotional strategies to expand adoption. Open individuals tend to view innovation as an opportunity rather than a threat, accelerating the adaptation process.

The geographic location moderator explains the differences in the strength of the influence of effort expectancy, facilitating conditions, and habits on QRIS use. The test results show that geographic location significantly influences effort expectancy, habits, and facilitating conditions (Hussain et al., 2018, p. 376; Slade et al., 2014, p. 222). Regions with better internet connectivity, higher device access, and wider exposure to QRIS merchants will create a smoother transaction experience (Oliveira et al., 2016, p. 407; Patil et al., 2020, p. 102152). This explanation is in line with the literature that places infrastructure availability and internet access quality as differentiating factors in the adoption of digital services between regions (Harun & Yigitcanlar, 2025) ; Liébana-Cabanillas et al., 2014; Shankar & Datta, 2018). Thus, acceptance of H8–H10 can be justified as follows: location determines the quality of infrastructure and experiential opportunities, experience determines the practical ease of use, ease and facilities increase successful use, and repeated success forms habits that ultimately lead to more stable QRIS use (Hayes & Macleod, 2006; Liébana-Cabanillas et al., 2017, p. 32).

The study extends UTAUT2 by incorporating contextual digital divide dimensions as moderating variables, contributing to a more context-sensitive adoption framework. This study provides important policy insights for Bank Indonesia and financial regulators to accelerate digital payment adoption. The findings reveal that adoption mechanisms are geographically heterogeneous, indicating that uniform nationwide strategies may generate uneven outcomes. Consequently, policymakers should adopt place-based digital financial inclusion strategies that reflect differences in infrastructure readiness, digital literacy, and ecosystem maturity. The strong influence of facilitating conditions confirms that the adoption of QRIS is fundamentally infrastructure-dependent; therefore, reliable internet access, device affordability, interoperability, and technical ecosystem development must be treated as core policy priorities rather than complementary initiatives. In addition, the significance of perceived security — despite the insignificance of perceived risk — suggests that visible regulatory oversight, consumer protection mechanisms, and clear security communication function as critical trust-building signals in early and transitional adoption environments. From an institutional and behavioral perspective, the results highlight that habit represents the most dominant predictor of QRIS usage, implying that digital payment adoption should be understood as a behavioral stabilization process rather than a one-time acceptance decision. Institutional environments, including religious organizations and community-based settings, act as behavioral accelerators by embedding digital payments into routine activities, thereby increasing repetition and reducing cognitive friction. Institutional endorsement strengthens legitimacy and perceived security, while transparent communication regarding transaction monitoring and data protection enhances trust formation. Moreover, localized technical facilitation — such as providing real-time assistance and trained volunteers helps convert intention into sustained usage, particularly in regions where digital readiness remains uneven.

Based on these findings, policy recommendations should shift from expansion-oriented policies toward adoption quality and behavioral persistence. Policymakers should implement tiered regional QRIS acceleration programs, formally integrate payment policies with national digital infrastructure agendas, and prioritize observable security governance through standardized security labels, fraud protection communication, and transparent dispute resolution mechanisms. Furthermore, community institutions should be strategically leveraged as adoption multipliers through assisted onboarding programs and digital ambassador initiatives. Finally, given the central role of habit, regulators should introduce behavioral policy instruments including recurring digital payment programs, default digital payment options in community contexts, and small incentives for repeated usage to promote long-term stabilization of digital payment behavior rather than short-term adoption growth. This study is limited by its cross-sectional design and geographically bounded sample, which may limit generalizability. Future research should employ longitudinal approaches and comparative regional analysis to validate the extended framework.

CONCLUSION

The study demonstrates that performance expectancy, facilitating conditions, habit, perceived security, and exposure to innovation positively and significantly influence the use of QRIS within the HKBP church context. Among these factors, habit is the most dominant predictor, highlighting the critical role of routine and repeated experiences in shaping congregational digital payment behavior. This finding indicates that sustained exposure and regular use are essential for stabilizing digital financial practices in religious settings. In contrast, Effort Expectancy and perceived risk do not show a significant effect,

suggesting that although QRIS is generally perceived as easy to use and risk considerations exist, these factors are not the primary drivers of usage decisions.

Furthermore, geographic location functions as a significant moderating variable that strengthens or weakens several adoption relationships. In urban areas where users are more familiar with digital technologies, expectancy of effort exerts a stronger influence, whereas in locations with stronger digital infrastructure, facilitating conditions become more effective. In addition, the impact of habit is amplified in communities that are already accustomed to digital transactions, indicating cumulative behavioral effects over time. Overall, these findings confirm that QRIS adoption in religious institutions is shaped by an interaction between behavioral factors, infrastructure readiness, and spatial context, emphasizing the importance of contextualized digital payment strategies. This study is limited by its cross-sectional design and geographically bounded sample, which may limit generalizability. Future research should employ longitudinal approaches and comparative regional analysis to validate the extended framework.

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AUTHOR CONTRIBUTIONS

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CONFLICTS OF INTEREST

The author(s) declare no conflict of interest.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

The authors declare that no artificial intelligence (AI) tools were used in the generation, analysis, or writing of this manuscript. All aspects of the research, including data collection, interpretation, and manuscript preparation, were carried out entirely by the authors without the assistance of AI-based technologies.

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