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QRIS Implementation in Muslim MSMEs: Opportunities and Challenges for Digital Financial Inclusion in Pamekasan

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ABSTRACT

Background: The implementation of Quick Response Code Indonesian Standard (QRIS) has emerged as a strategic initiative to promote digital financial inclusion among micro, small, and medium enterprises (MSMEs) in Indonesia. However, adoption patterns vary significantly across regions, particularly in areas with strong socio-religious identities such as Pamekasan Regency.
Research Gap: While previous studies have examined QRIS adoption from technological and economic perspectives, limited attention has been given to understanding how Islamic ethical values shape technology acceptance among Muslim MSMEs in culturally religious communities. The integration of technology acceptance models with religious and ethical dimensions remains underexplored.
Novelty: This study offers a novel contribution by integrating the Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), and Islamic business ethics principles (amanah, ṣidq, taysīr, maṣlaḥah) to provide a comprehensive framework for understanding QRIS adoption behavior among Muslim MSMEs.
Method: Using a qualitative case study approach, data were collected through in-depth interviews, participant observation, and documentation involving 21 participants selected through purposive sampling. Thematic analysis was conducted using the Miles and Huberman interactive model.
Results: The findings reveal that QRIS adoption is driven not only by perceived usefulness and ease of use but also by Islamic ethical considerations that strengthen trust in digital payment systems. However, challenges persist, including limited digital literacy, cybersecurity concerns, infrastructure instability, settlement delays, and resistance to cashless transactions.
Conclusion: This study underscores the importance of integrating digital literacy programs, institutional support, and Islamic ethical approaches to promote inclusive and sustainable digital financial ecosystems among Muslim communities.

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INTRODUCTION

The advancement of digital technology has significantly transformed patterns of economic interaction, particularly in payment systems. Digital transformation not only delivers faster, more efficient financial services but also expands public access to the formal financial system through various digital payment innovations (Dai et al., 2023; Mavlutova et al., 2023). In Indonesia, one rapidly developing innovation is the Quick Response Code Indonesian Standard (QRIS), a QR code-based payment standard launched by Bank Indonesia to integrate various digital payment services into a single national system (Rafferty & Fajar, 2022). QRIS enables MSMEs and consumers to conduct cashless transactions practically, safely, and efficiently. The adoption of QRIS in Indonesia has shown a significant upward trend. Bank Indonesia noted that the number of QRIS users and merchants continued to increase significantly in 2024, with the majority of merchants coming from the MSME sector (Sutrisno, 2024).

However, implementing QRIS across regions remains challenging, particularly in areas with low digital literacy and a strong cash-based transaction culture, such as Pamekasan Regency. This context is particularly important because the Pamekasan community is characterized by a strong Islamic socio-cultural identity (locally known as Gerbang Salam) (Suhaimi et al., 2023). Accordingly, Islamic ethical values play an important role in shaping how Muslim MSMEs accept and use digital payment technologies such as QRIS.

From an Islamic perspective, economic activity is oriented not only toward material gain but also toward ethical principles such as honesty (ṣidq), trustworthiness (amanah), benefit (maslahah), transparency, and fairness in transactions (Febriyanthi & Mujiatun, 2024). These values form an important foundation for the business behavior of Muslim MSMEs, including their acceptance of digital financial technology innovations. The use of QRIS aligns with Islamic principles of efficiency and convenience (taysīr) because it simplifies transactions, enhances payment security, and reduces the risk of cash loss or misuse. Nevertheless, some Muslim MSMEs remain hesitant about digital payment systems due to concerns about data security, transaction costs, and the perceived compliance of digital systems with Sharia principles. Accordingly, QRIS adoption among Muslim MSMEs is shaped not merely by technological considerations but also by perceptions of how the technology aligns with their Islamic ethical values. Previous research has shown that applying Islamic business ethics influences service quality and the sustainability of Muslim MSMEs (Oktaviany et al., 2025), underscoring the importance of integrating religious values and digital innovation in understanding QRIS adoption behavior.

To explain this technology acceptance behavior, this study uses the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) approaches. The TAM, developed by Davis (1989), explains that technology acceptance is influenced by two main factors: perceived usefulness and perceived ease of use. In the context of QRIS, Muslim MSMEs are likely to adopt digital payment systems if they perceive that QRIS provides tangible benefits for their businesses and is easy to use in daily transactions. Furthermore, the UTAUT theory developed by Venkatesh et al. (2003) extends the study of technology acceptance by identifying four main constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions. This framework is particularly relevant for explaining how the social environment, infrastructure support, and the influence of the religious community in Pamekasan can shape Muslim MSMEs' decisions to use QRIS. Within strongly religious communities, the influence of religious leaders, the business community, and social norms can be important factors in shaping perceptions of digital financial technology. Accordingly, integrating TAM, UTAUT, and Islamic ethical values provides a more comprehensive theoretical framework for understanding QRIS implementation in Muslim MSMEs.

Although various studies on QRIS and digital payments have been conducted, most still focus on the general technological and economic aspects without linking them to the religious and ethical dimensions of Islam in more depth. Previous studies have primarily discussed the benefits of QRIS in improving transaction efficiency, reducing crime risk, and increasing MSME revenue (Alifia et al., 2024; Mustagfiroh & Supriyadi, 2024; Rinaldi et al., 2024). Meanwhile, studies linking the acceptance of digital payment technology to Islamic ethical values, particularly among Muslim MSMEs in areas with a strong religious culture like Pamekasan, are still relatively limited. Furthermore, research on QRIS implementation in semi-urban and rural areas is also minimal, even though disparities in digital infrastructure and low technological literacy are real challenges to the digital financial inclusion process (Putri Darwiyani et al., 2023). This research gap suggests that a technological approach alone is insufficient to understand QRIS adoption behavior among Muslim MSMEs. A more integrative approach encompassing technological, social, cultural, and religious dimensions is therefore required to achieve a more contextual and in-depth understanding.

Based on this description, this study aims to analyze the opportunities and challenges of QRIS implementation for Muslim MSMEs in Pamekasan Regency in supporting digital financial inclusion, considering the influence of Islamic ethical values and technology acceptance factors through the TAM and UTAUT approaches. This study specifically seeks to identify how perceived usefulness, ease of use, social influence, and supporting conditions influence Muslim MSMEs' decisions to adopt QRIS. Furthermore, this study also aims to understand how Islamic ethical values shape MSMEs' perceptions and trust in digital payment systems. The research findings are expected to provide theoretical contributions to the development of religion-based technology acceptance studies and provide practical recommendations for the government, financial institutions, and digital payment service providers in developing QRIS implementation strategies that are more inclusive, contextual, and tailored to the characteristics of the local Muslim community.

METHOD

This study employed a qualitative case study design to explore the implementation of QRIS among Muslim MSMEs in Pamekasan Regency. A case study approach was adopted because the study sought to understand how and why QRIS adoption has evolved in relation to local economic practices, Islamic business values, and digital financial inclusion among Muslim MSMEs (Gunawan, 2014; Sugiyono, 2016). Pamekasan was treated as a bounded case due to its strong Islamic socio-religious identity and its ongoing transition from cash-based transactions to digital financial services. This approach enabled the study to examine the relationship between digital payment adoption, Islamic business values, and financial inclusion practices in daily business activities. Unlike previous research that focused more on the subjective experiences of QRIS users, this study emphasizes the opportunities, challenges, and strategic dimensions of QRIS implementation in strengthening digital financial inclusion among Muslim MSMEs.

The study utilized both primary and secondary data sources. Primary data were obtained through in-depth interviews, participant observation, and documentation, involving 21 participants selected using purposive sampling. Participants were selected according to two criteria: (1) Muslim MSMEs or QRIS users in Pamekasan Regency, and (2) experience using or interacting with QRIS in daily business transactions. The participants represented a range of business sectors and social groups, enabling them to provide a broader picture of the opportunities, challenges, and strategies for implementing QRIS for Muslim MSMEs in Pamekasan.

Table 1. Research Participant Profile

No	Participant Name	Business/Background	Participant Category
1	Desy	Warmindo Mas Zed	Muslim MSME Actor
2	Faisal	Depot Fajar	Muslim MSME Actor
3	Fidya	Apotek Insta Farma	Muslim MSME Actor
4	Hadi	Bakso Lamongan	Muslim MSME Actor
5	Hamilah	Sembako Toko Baru	Muslim MSME Actor
6	Haris	Pandawa Cell	Muslim MSME Actor
7	Hidayatullah	Dani Cell	Muslim MSME Actor
8	Ikrar	Café Balada	Muslim MSME Actor
9	Iqbal	Belikopi Pamekasan	Muslim MSME Actor
10	Joeko	Telor Gulung Andalan Aing	Muslim MSME Actor
11	Lutfi	French Fries Business	Muslim MSME Actor
12	Muzammil	Seblak Sakera	Muslim MSME Actor
13	Novi	Toko Mbak Ulan Sayur	Muslim MSME Actor
14	Rahman	Kanji Goreng (Jigor)	Muslim MSME Actor
15	Rahmat	Seblak Pedas Jelettot	Muslim MSME Actor

16	Ranian	Siomay Prasmanan	Muslim MSME Actor
17	Sela	Cafe Cikopian	Muslim MSME Actor
18	Andi Saputra	Local Community Member	QRIS User
19	Mayang Permatasari	Local Community Member	QRIS User
20	Rina Pratiwi	Local Community Member	QRIS User
21	Siti Nurhaliza	Local Community Member	QRIS User

Source: Researchers' field data (2025).

Data were analyzed using the interactive model of Miles and Huberman (2014), which includes data condensation, data display, and conclusion drawing/verification. The analysis was conducted thematically by identifying key patterns related to opportunities, challenges, and strategies for strengthening QRIS implementation among Muslim MSMEs in Pamekasan. To maintain the credibility of the findings, this study employed triangulation of sources and methods by comparing data from interviews, observations, and documentation. Data collection continued until thematic saturation was achieved, at which point additional interviews no longer yielded significant new information.

RESULTS AND DISCUSSION

Opportunities in Promoting QRIS Implementation for Muslim MSMEs in Pamekasan

The findings indicate that QRIS has evolved beyond a conventional digital payment instrument for Muslim MSMEs in Pamekasan. Within the socio-religious context of the Pamekasan community, known for its strong adherence to Islamic values in daily economic activities, QRIS use is perceived not only as a technological innovation but also as part of more practical, transparent, and responsible muamalah practices. Its adoption allows businesses to manage transactions more efficiently while strengthening trusting relationships with customers. This pattern suggests that digital transformation in the MSME sector in Pamekasan is taking place not only at the technological level but also at the social and cultural levels. This argument aligns with research by Mavlutova et al. (2023) and Dai et al. (2023), which confirms that digital payment systems can expand financial access while improving the operational efficiency of small businesses.

Perceived ease of use emerged as one of the primary drivers of QRIS adoption. As a pharmaceutical business owner who handles a high volume of daily transactions, Fidya explained that QRIS is "not complicated at all, it can be used immediately." Similarly, Rahmat, the owner of the culinary business Seblak Pedas Jelettot, said that transactions are faster because traders no longer have to provide change. A similar experience was shared by Muzammil, the owner of Seblak Sakera, who stated that the QRIS registration process is fast and simple, making it easy for small business owners to adapt. On the user side, Mayang Permatasari revealed that QRIS makes the payment process more practical than cash transactions. These findings support the central premise of the Technology Acceptance Model (TAM), namely that perceived ease of use and perceived usefulness are important determinants of technology acceptance (Davis, 1989). Within this context, the perception of convenience for Muslim MSMEs in Pamekasan is not only understood technically, but also interpreted as a form of taysīr or making things easier for others. Consequently, transaction efficiency is perceived as both an economic and a moral value.

Interestingly, QRIS adoption patterns varied across business sectors. Culinary businesses like Rahmat and Muzammil tended to be quicker to adopt QRIS due to their greater interaction with young consumers accustomed to digital payments. Conversely, some traditional businesses and the general public still hesitate to adopt cashless payment systems. These differences in experience demonstrate that business characteristics, customer segmentation, and the intensity of daily interaction with the digital ecosystem strongly influence QRIS acceptance.

Beyond operational efficiency, some participants viewed QRIS as part of a broader set of ethical business practices. Desy Anggraini explained that using QRIS helps customers transact more conveniently and, in her view, reflects the value of religious observance in transactions. Meanwhile, Hidayatullah, the owner of Dani Cell, believes that QRIS promotes honesty because payment amounts are automatically recorded, reducing the risk of manipulation. This finding broadens previous studies that tended to frame digital payment adoption solely within a utilitarian framework, without considering the religious dimensions and Islamic business ethics (Febriyanthi & Mujiatun, 2024). In Pamekasan's

Muslim community, which strongly adheres to religious values, the principles of amanah (trust), ṣidq (honesty), and transparency are crucial foundations for legitimizing QRIS use among Muslim MSMEs.

Social influence also plays a significant role in accelerating QRIS adoption. Joeko explained that consumers are increasingly requesting digital payment options, while Novi observed that even older customers are becoming accustomed to using QRIS. These findings are reinforced by Iqbal, a cashier at the Belikopi MSME in Pamekasan, who noted that although some customers still prefer cash or debit card payments due to familiarity with older methods, QRIS use is slowly increasing, especially among younger consumers. This pattern reflects the social influence dimension of UTAUT, in which changes in social norms and collective behavior influence technology adoption decisions (Venkatesh et al., 2003). In the Pamekasan community, this behavioral change is also influenced by the increasing penetration of smartphones and social media, which has accelerated the diffusion of digital payment culture among urban and semi-urban Muslims.

In addition to improving transaction efficiency, QRIS also strengthens MSMEs' financial governance. The automatic recording feature and real-time transaction notifications help merchants monitor daily income more systematically and accountably. From an Islamic economic perspective, such transparency is crucial for reducing gharar (uncertainty) in business transactions. More broadly, the findings demonstrate that QRIS not only strengthens digital financial inclusion but also encourages more professional and transparent business practices.

Table 2. Opportunities for QRIS Adoption among Muslim MSMEs in Pamekasan

Themes	Participants' Insights	Analytical Interpretation	Islamic Ethical Dimension
Ease of use and efficiency	Fidya, Rahmat, and Muzammil emphasized that QRIS is practical, fast, and easy to operate.	QRIS simplifies transactions and improves service efficiency for MSMEs.	Taysīr (facilitating ease)
Ethical business practices	Desy Anggraini and Dani Cell highlighted transparency and honesty in QRIS-based transactions.	QRIS is perceived as supporting ethical and transparent commercial practices.	Amānah and ṣidq
Social acceptance	Joeko, Novi, and Iqbal observed increasing customer familiarity with digital payments.	Social interaction and changing consumer behavior accelerate QRIS adoption.	Community adaptation
Financial transparency	MSMEs appreciated automatic transaction records and real-time notifications.	QRIS strengthens bookkeeping practices and business accountability.	Avoiding gharar
Affordable transaction costs	Rahman considered QRIS transaction fees affordable and beneficial for MSMEs (Rahman, 2025).	Low transaction costs encourage wider adoption among small businesses.	Maṣlaḥah (economic benefit)
Cross-border opportunities	Participants viewed QRIS as potentially useful for migrant remittances.	QRIS may expand financial inclusion among migrant communities.	Ethical ṣarf transactions

Substantively, Table 2 shows that the interaction between technological benefits and religious values shapes QRIS adoption among Muslim MSMEs. Transaction efficiency, payment transparency, relatively affordable transaction costs, and social acceptance are interconnected with Islamic ethical principles that emphasize honesty, trustworthiness, and ease of transactions. This finding suggests that technology acceptance among Muslim communities tends to be more contextual than a purely economic approach to technology adoption.

This research also identified new opportunities for developing cross-border QRIS. Given the strong culture of migration among Madurese, particularly to Malaysia and other Southeast Asian countries, cross-border QRIS has the potential to facilitate remittances and reduce international transaction costs. However, this development also poses challenges regarding exchange rate transparency and Sharia compliance in digital currency conversions. In an Islamic economy, ṣarf transactions must avoid elements of gharar (unlawful activity) and excessive speculation (Chowdhury, 2015).

Challenges in QRIS Implementation for Muslim MSMEs in Pamekasan

Although QRIS is increasingly accepted, its implementation in Muslim MSMEs in Pamekasan still faces several structural and socio-technological barriers. One of the main challenges relates to limited digital literacy, especially among business owners who were previously unfamiliar with digital financial services. Given the local characteristics of Pamekasan, where some businesses still rely on traditional cash-based transactions, the transition to digital payments is gradual and not always easy. Hamilah admitted that it took a long time to understand QRIS because she had never used mobile banking before. Desy Anggraini also assessed that QRIS is easier to understand for users who are already familiar with smartphones and digital applications.

This condition is reinforced by Andi Saputra's experience, who admitted to not yet having sufficient knowledge of QRIS usage. Rina Pratiwi also expressed similar concerns, stating that she was hesitant to use QRIS because she was unfamiliar with the digital payment system. Lutfi, the owner of a French Fries business, even expressed concern about his inability to manage QRIS payments effectively. Interestingly, the difference in adaptation rates was quite clear between businesses actively engaging with young consumers and traditional businesses whose customer base was still dominated by cash transactions. This observation highlights that the transition toward digital payments is not occurring homogeneously among Muslim MSMEs in Pamekasan. The results of this study also strengthen the argument that digital literacy is a critical factor in determining the success of digital financial inclusion (Astari et al., 2024; Fadli et al., 2024).

Another significant concern relates to trust in the security of digital transactions. In the initial stages of use, several participants expressed doubts about the clarity of the fund flow and the security of the digital payment system. Rahmat, for example, was initially concerned about not knowing where transaction funds were going until he better understood the QRIS mechanism. Hamilah expressed similar concerns, fearing fraud and account hacking. Furthermore, Siti Nurhaliza expressed fear of online transactions and concerns regarding the misuse of personal data in digital transactions. In a Muslim society that places strong emphasis on trust and security in transactions, skepticism about digital systems poses a social challenge inherent to the adoption of technology. These findings are consistent with the study by Dusuki and Abdullah (2007), which emphasized that transparency and fairness are the main foundations of an Islamic-based financial system.

Cybersecurity threats also emerged as a major challenge in QRIS implementation. The phenomenon of quishing, or fraud using QR codes, has begun to raise concerns among the public due to the potential for data theft and draining user balances. Regarding this social situation, Ikrar, a waiter at Cafe Balada, explained that some customers were initially hesitant to use QRIS but began to accept it after receiving education and direct examples of its use. This condition demonstrates that the educational process and the formation of social trust at the community level strongly influence the acceptance of digital technology.

Limited digital infrastructure also remains a real challenge. Several merchants explained that internet and electricity network disruptions frequently disrupt QRIS transactions, forcing them to revert to cash payments. This finding supports the argument of Putri Darwiyani et al. (2023), who stated that the disparity in digital infrastructure remains a major obstacle to the adoption of digital payments in semi-urban and rural areas. Therefore, the success of digital payment adoption is determined not only by user readiness but also by the readiness of the supporting technology ecosystem.

In addition to technical factors, MSMEs also face liquidity issues due to the H+1 settlement system. Several participants explained that transaction funds can only be used the following day, impacting the flexibility of daily business capital. On the other hand, some merchants consider the Merchant Discount Rate (MDR) fees quite burdensome, especially for businesses with high transaction volumes. This condition reflects the dilemma between expanding digital financial inclusion and the sustainability of digital payment services. From an Islamic economic perspective, the principle of ʿadl (justice) requires a balance between the affordability of services for MSMEs and the sustainability of the digital payment system.

Table 3. Challenges in QRIS Implementation among Muslim MSMEs in Pamekasan

Challenges	Participants' Insights	Analytical Interpretation	Islamic Perspective
Low digital literacy	Hamilah, Andi Saputra, Rina Pratiwi, and Lutfi expressed difficulties in understanding QRIS technology.	Unequal digital capability limits QRIS adoption among MSMEs.	Taʻlīm (education)
Security concerns	Rahmat, Hamilah, and Siti Nurhaliza worried about fraud and misuse of personal data.	Trust becomes a crucial factor in digital financial transactions.	Amānah
Resistance to digital payment adoption	Some customers still preferred cash transactions due to habitual payment behavior.	Social adaptation toward digital payment remains gradual.	Behavioral transition
Quishing and cyber fraud	Ikrar explained that customers accepted QRIS after receiving transaction security education.	Digital security awareness is essential for strengthening adoption.	Consumer protection
Infrastructure instability	Participants experienced internet and electricity disruptions during transactions.	QRIS adoption depends heavily on infrastructure readiness.	Transaction certainty
Settlement delays (H+1)	MSMEs highlighted delayed fund disbursement into their accounts.	Delayed liquidity reduces operational flexibility for small businesses.	Financial justice
MDR sustainability	Some merchants perceived MDR fees as burdensome.	Balance is needed between affordability and service sustainability.	ʿAdl

The findings in Table 3 collectively indicate that the challenges of QRIS implementation are not solely technological but also involve building trust, infrastructure readiness, and the sustainability of digital payment services. In other words, digital financial transformation for Muslim MSMEs requires a more holistic approach to prevent technological innovation from creating new forms of exclusion for groups with limited digital capabilities.

Strategies to Strengthen QRIS Adoption for Digital Financial Inclusion

The findings suggest that strengthening QRIS adoption among Muslim MSMEs requires a strategy that integrates digital literacy, institutional support, and an Islamic values-based approach. In the Pamekasan context, which has a strong socio-communitarian character, a community-based strategy is more relevant than a one-way formal education approach. Digital literacy emerged as a key priority because most participants acknowledged that limited technological understanding remains a barrier to QRIS use. This finding supports the research of Kass-Hanna et al. (2022), which positions digital literacy as the primary foundation for expanding digital financial inclusion.

However, this study also shows that technology education will be more effective when linked to the local community's cultural and religious values. Several participants linked QRIS use to the values of honesty, service, and blessings in business. Faisal, for example, viewed QRIS as part of a service because it helps customers transact more easily, while Haris assessed that QRIS supports more transparent buying and selling practices. This pattern suggests that technology acceptance among Muslim communities tends to be stronger when digital innovation is understood as part of ethical transaction practices rather than simply as an economic instrument. A similar approach can also be found in Malaysia's sharia fintech literacy initiatives, which combine digital financial education with Islamic ethical principles to strengthen public understanding and increase trust in sharia-compliant financial technology services (Malaysia Digital Economy Corporation (MDEC), 2020).

Hidayatullah also emphasized that some MSMEs in Pamekasan still require direct assistance regarding the use of QRIS and digital transaction management. He believes that formal outreach alone is insufficient, as many business owners understand technology more easily through hands-on practice and community-based assistance. Interestingly, this need for assistance is felt more by traditional small businesses than by MSMEs accustomed to using social media or digital platforms in their business activities. This dynamic indicates that strengthening digital literacy among Muslim MSMEs requires a more context-specific, sustainable, and participatory approach. In this context, community-based education functions not only to improve users' technical skills but also to strengthen business owners' confidence and readiness to adapt to the digital payment ecosystem.

In addition to strengthening literacy, institutional support also plays a crucial role in building user trust. Hadi, the owner of Bakso Lamongan, hopes for broader outreach regarding digital data security and phishing prevention in QRIS transactions. Meanwhile, several MSMEs, such as Ranian and Sela, have participated in educating customers about QRIS transaction security and the importance of being vigilant against digital fraud. Within the socially cohesive Pamekasan community, the involvement of MSMEs as agents of social education is crucial to accelerating the adoption of digital payment technology more inclusively and sustainably.

Table 4. Strategies to Strengthen QRIS Adoption among Muslim MSMEs

Strategic Focus	Participants' Insights	Recommended Strategy	Expected Impact
Digital literacy	Participants emphasized broader QRIS education and direct mentoring for MSMEs.	Expand community-based digital literacy and practical assistance programs.	Increased adoption readiness
Integration of Islamic ethics	Faisal and Abd. Haris associated QRIS with honesty and customer service values.	Integrate Islamic ethical values into digital financial education.	Stronger public trust
Digital security enhancement	Hadi, Ranian, and Sela emphasized transaction security and anti-phishing awareness.	Strengthen cybersecurity education and consumer protection programs.	Safer payment ecosystem
Infrastructure improvement	MSMEs complained about network disruptions and settlement delays.	Improve internet quality and payment system infrastructure.	More stable transactions
Institutional collaboration	Participants appreciated support from banks during QRIS registration and implementation.	Strengthen collaboration among banks, fintech providers, government, and MSME communities.	A more supportive digital ecosystem

A reading of Table 4 indicates that successful QRIS implementation cannot rely solely on technological innovation. Strengthening digital literacy requires a social, cultural, and religious approach that aligns with the characteristics of local Muslim communities. Therefore, QRIS development strategies should be directed not only at increasing technology use but also at building trust, strengthening community capacity, and creating a fair and sustainable digital payment ecosystem.

CONCLUSION

This study demonstrates that QRIS implementation in Muslim MSMEs in Pamekasan Regency has significant opportunities to promote digital financial inclusion by improving transaction ease, payment efficiency, and financial transparency. QRIS adoption is influenced not only by technological aspects as described in TAM and UTAUT, but also by Islamic ethical values such as amanah, ṣidq, taysīr, and maṣlaḥah. Nevertheless, QRIS implementation still faces several challenges, including low digital literacy, concerns about transaction security, limited infrastructure, and issues with costs and settlement systems. The findings indicate that digital payment transformation in Muslim MSMEs is gradual and heavily influenced by the local community's social, cultural, and religious characteristics.

Theoretically, this study enriches the study of technology acceptance by integrating the TAM and UTAUT perspectives with Islamic business ethics values to understand digital payment behavior in the

Muslim community. Practically, the findings provide important implications for regulators and Islamic financial institutions, particularly the National Sharia Council (DSN-MUI) and Bank Indonesia, to strengthen Islamic-based digital financial literacy, enhance digital transaction security education, and strengthen consumer protection regulations and Sharia compliance in the development of QRIS, including cross-border QRIS schemes. Moreover, collaboration among regulators, financial institutions, local governments, and MSME communities is crucial in building a more inclusive, secure, and sustainable digital payment ecosystem for the Muslim community.

This study is limited to Muslim MSMEs in Pamekasan Regency, so the results cannot be generalized to other regions with different social characteristics. Furthermore, the qualitative case study approach emphasizes an in-depth understanding rather than statistical measurement of relationships between variables. Therefore, further research is recommended to conduct comparative studies in other Muslim-majority regions or employ a mixed-methods approach to gain a broader understanding of the influence of religiosity, digital literacy, and trust on QRIS adoption. Future studies on cybersecurity, the sustainability of Islamic payment services, and the implementation of cross-border QRIS based on Sharia principles are also important areas for future research.

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AUTHOR CONTRIBUTION STATEMENT

Khotibul Umam served as the lead researcher, responsible for conceptualizing the research framework, designing the methodology, coordinating data collection, and leading the analysis and interpretation of findings. Umarul Faruq contributed significantly to the literature review and theoretical framework development, particularly in integrating the Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), and Islamic business ethics perspectives. Syahda Adita was primarily involved in data collection through in-depth interviews and participant observation, as well as managing documentation and data organization. Nadya Apriza Azizi contributed to data analysis using the Miles and Huberman interactive model and participated in the thematic coding process. Halimi Husayn provided critical insights into the Islamic ethical dimensions of the study, contributed to the discussion section, and assisted with manuscript revision and refinement. All authors reviewed and approved the final manuscript before submission.

AI DISCLOSURE STATEMENT

The researchers utilized Grammarly, an AI-assisted language support tool, to enhance grammar, sentence structure, and overall language clarity during the preparation of this manuscript. The tool was employed solely for language refinement purposes to improve readability and ensure grammatical accuracy. However, all intellectual content, including the research idea, study design, data collection procedures, analysis, interpretation of findings, discussion, and conclusions, was entirely developed by the researchers based on original field research. The AI tool did not contribute to the generation of ideas, data analysis, or any substantive aspects of the research. The manuscript was carefully reviewed and revised by all authors to ensure accuracy, authenticity, and originality. The researchers assume full responsibility for all aspects of this publication, including its content, interpretations, and conclusions.

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CONFLICTS OF INTEREST

The researchers declare that there are no conflicts of interest associated with this research or its publication. No financial, personal, professional, or institutional relationships exist that could have inappropriately influenced the research design, data collection, analysis, interpretation, or presentation of findings. All authors have maintained objectivity and scientific integrity throughout the research process. The researchers affirm that the study was conducted with full transparency and that no competing interests have affected the outcomes or conclusions presented in this manuscript. Any potential influences have been disclosed to ensure the credibility and reliability of the research findings.

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