

SWOT Analysis of QRIS (Quick Response Code Indonesian Standard) Adoption for MSME Sales Enhancement: A Strategic Framework for Digital Payment Integration

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Abstract

This research presents a comprehensive analysis of the adoption of Quick Response Code Indonesian Standard (QRIS) by Micro, Small, and Medium Enterprises (MSMEs) in Indonesia, with a focus on increasing sales and digital payment integration. The research also uses SWOT analysis enriched with the Technology-Organization-Environment (TOE) and Unified Theory of Acceptance and Use of Technology (UTAUT) theoretical frameworks to identify internal and external factors that influence adoption. Findings show that while QRIS offers significant advantages in transaction efficiency and financial inclusion, MSMEs face challenges such as low digital literacy and cultural preference towards cash transactions. A strategic framework is proposed, which details Strength-Opportunity (SO), Weakness-Opportunity (WO), Strength-Threat (ST), and Weakness-Threat (WT) strategies to guide MSMEs and stakeholders. The report also highlights the uniqueness of the Indonesian context and discusses the transferability of the framework to other emerging economies.

Keywords

QRIS, MSMEs, Digital Payments, SWOT Analysis, Strategic Framework

1. Introduction

Digital transformation has become a global driving force that is reshaping economic outlooks around the world, with the impact particularly pronounced in developing countries. In Indonesia, Micro, Small and Medium Enterprises (MSMEs) are the backbone of the national economy, contributing significantly to Gross Domestic Product (GDP) and

employment. Therefore, digitization of MSMEs is not just an option, but a strategic imperative to improve competitiveness and drive inclusive economic growth. In this context, Bank Indonesia (BI) has introduced Quick Response Code Indonesian Standard (QRIS), a national digital payment system designed to unify various QR Code-based payment methods the aim is to facilitate faster, safer, and more efficient transactions (Rofingatur et al., 2024). QRIS is seen as a "game changer" in driving financial inclusion and improving cross-border payment connectivity. The system is designed with the principles of "UNGGUL" (Universal, Easy, Profit, Direct) or "PAKAI" (Practical, Safe, Current, Reliable, Inclusive), which emphasizes convenience, security, and accessibility for users and merchants (Bank Indonesia, 2022).

Although the development of QRIS shows rapid progress, reflected in the increase in the number of merchants using QRIS from 3.6 million in 2021 to 7.2 million in 2022 (Rofingatur et al., 2024), the adoption of this technology by MSMEs still faces various obstacles. Some of the main barriers identified include low financial and digital literacy, people's preference for cash, and doubts about the security of digital systems (Pratiwi, 2025). Interestingly, although the understanding of QRIS is quite high among businesses, this is not always directly proportional to the interest in adopting it. This shows that perceptions of benefits and convenience alone are not enough to encourage consistent and widespread use. The importance for MSMEs to adopt digital payments, such as QRIS, lies not only in increased operational efficiency and reduced transaction time, but also in improved financial record keeping, accountability, and transaction security, ultimately contributing to business growth. However, to achieve this full potential, a comprehensive strategic framework is required to guide MSMEs in effectively integrating digital payments, overcoming existing challenges, and capitalizing on available opportunities.

The phenomenon of QRIS adoption by MSMEs in Indonesia shows an interesting complexity. The significant increase in the use of digital payments in recent years, especially from 2020 to 2023, with an increase in transactions of 47.36% in 2021 compared to 2020, 28.59% in 2022, and 14.14% in 2023 (Amri et al., 2025), is not only driven by Bank Indonesia policies. The emergence of the COVID-19 pandemic simultaneously acted as a disruptive factor that substantially accelerated the use of contactless payments (Thanigan et al., 2025). This suggests a complex interplay between policy drivers and external catalysts, which makes it difficult to separate the direct impact from the effectiveness of the policy itself. This understanding is important for assessing the sustainability of post-crisis adoption and designing strategies that can convert crisis-induced usage into sustainable behavior. The latest data based on Bank Indonesia (BI) Governor Perry Warjiyo said that "QRIS transactions grew 226.54 percent *year on year* (yoy), with the number of users reaching 50.50 million and the number of merchants 32.71 million," in a press conference on the results of the BI Board of Governors Meeting (RDG) in Jakarta .(2024).

In addition, there is a stark difference between the understanding of QRIS and the willingness to adopt it. While MSMEs may have a good understanding of QRIS, they are not always inclined to switch to digital payments. This indicates that perceived benefits and ease of use, as described in the Technology-Organization-Environment (TOE) and Unified Theory of Acceptance and Use of Technology (UTAUT) frameworks, may not be the only drivers. Deep-seated issues such as trust issues, fear of fraud, and deep-rooted cash-based habits may be more significant barriers (Thanigan et al., 2025). Therefore, communication strategies and adoption programs should go beyond simple information dissemination and actively address perceived risks, build trust, and demonstrate clear and personalized benefits for MSMEs.

2. Literature Review

2.1 Digital Payment and MSMEs in Indonesia

MSMEs play a vital role in the Indonesian economy, with substantial contributions to GDP and job creation. This central role makes digital transformation of MSMEs a strategic imperative to improve competitiveness, productivity, innovation, and customer engagement, especially in the wake of external shocks such as the COVID-19 pandemic. However, MSMEs often lag behind large enterprises in adopting advanced technologies due to resource limitations, skills gaps and other inherent barriers.

However, the adoption of digital payment technologies such as QRIS (Quick Response Code Indonesian Standard) shows significant progress. Based on data from Bank Indonesia summarized by Databooks Katadata per year (2020), more than 3.82 million MSMEs have adopted QRIS. Visual data from the total merchants shows that the micro business segment dominates the adoption of QRIS, amounting to 2.6 million merchants, followed by small (685 thousand), medium (333 thousand), and large businesses (190 thousand). This indicates that despite their small

business scale, MSMEs, especially micro, have a high responsiveness to digital innovations based on daily transaction needs (Figure 1).



Figure 1. Total Merchants Adopt Quick Response Code Indonesia Standard (QRIS)

QRIS, as a digital payment solution, is designed to address some of these challenges. The system serves as Bank Indonesia's initiative to unify various QR Code-based payment methods. QRIS offers core features that emphasize practicality, security, modernity, reliability, and inclusiveness (PAKAI), as well as universality, convenience, benefits, and speed (UNGGUL) as stated by Bank Indonesia(2022) . These benefits apply to both consumers and merchants, facilitating seamless transactions and even supporting cross-border transactions. Nonetheless, the adoption of QRIS by MSMEs is still faced with various obstacles such as reluctance to use because they are not used to using it. Common challenges faced by MSMEs include low financial and digital literacy, perceived cost burden, lack of understanding of the full potential benefits, widespread security concerns (e.g., fraud, fake QR codes), and deep-rooted cultural preference towards cash transactions (Muhammad et al., 2024).

The literature review shows a fundamental shift in the way digital payments are viewed. Initially, digital payments were often simply considered as a transactional tool that offered convenience. However, growing evidence suggests that digital payments, specifically QRIS, have the potential to become a strategic asset for MSMEs. QRIS adoption can significantly improve the efficiency of financial record keeping and accountability of financial statements. Furthermore, digital payments play an important role in retaining customers (Minarni, 2025) and show a positive and significant relationship with overall firm performance (Aprisca & Aligarh, 2024). This evolution shows that the benefits of QRIS go beyond the immediate point of sale, encompassing the transformation of *back-office* operations, the provision of valuable data for decision-making, and the direct contribution to a company's profitability and competitive advantage. Therefore, a strategic framework for digital payment integration should emphasize not only the customer-facing aspects, but also the internal operational improvements enabled by QRIS, pushing MSMEs from simply "using" the technology to strategically "leveraging" it (Aliyev, 2025).

2.2 Theoretical Framework for Technology Adoption

2.2.1 Technology-Organization-Environment (TOE) Framework

The Technology-Organization-Environment (TOE) framework, originally developed by Tornatzky (1990), is a powerful model to explain the adoption of technological innovations (Aprisca & Aligarh, 2024) . This framework analyzes adoption in three different contexts: Technology, Organization, and Environment. TOE is considered more comprehensive than other models such as Diffusion of Innovation (DOI) due to the inclusion of the

environmental context (Pramudito et al., 2023). In the context of QRIS adoption by MSMEs, the TOE framework can be applied as follows:

- **Technological Context:** Focus on the intrinsic characteristics of the QRIS itself. This includes the perceived benefits (Relative Advantage), ease of use (Complexity), and compatibility with existing MSME operations, business processes, and owner/employee lifestyles. For example, the QRIS attribute "Practical, Safe, Current, Reliable, Inclusive" (PAKAI) is directly related to relative advantage and compatibility. The higher the relative advantage that users perceive, the faster they will adopt information technology. Compatibility, i.e. how well information technology fits with users' lifestyles, values, beliefs, habits and experiences, is an important component of information technology adoption (Bank Indonesia, 2022).
- **Organizational Context:** Examines internal factors specific to MSMEs. These include organizational competencies (managerial capabilities of MSME owners/managers), the critical role of top management support (owner commitment), and the availability and effectiveness of training and education for MSME employees. This context also addresses the observed weakness of limited human resources experienced in digital marketing (Gumilang et al., 2024). Support from top management is considered crucial for organizational transformation to accommodate employees, and training and education are shown to affect employee performance.
- **Environmental Context:** Analyzing the external factors that influence MSMEs' decision to adopt QRIS. This includes competitive pressure from other businesses, direct and indirect government support and regulation (Bank Indonesia's role in QRIS development and promotion), and support received from trading partners or payment service providers. Competitive pressures can influence the use of information technology to better compete and serve consumers.

2.2.2 Unified Theory of Acceptance and Use of Technology (UTAUT) / UTAUT2

The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) is a popular model for evaluating technology adoption (Maksum et al., 2025). This model predicts user acceptance based on Performance Expectations, Effort Expectations, Social Influences, and Facilitating Conditions. UTAUT2 extends this model by including additional variables such as Hedonic Motivation, Habit, and Perceived Value, providing a more comprehensive understanding of consumer adoption (Saadullah et al., 2024). The application of UTAUT/UTAUT2 to the adoption of QRIS by MSMEs is as follows:

- **Performance Expectation (PE):** The extent to which MSME owners/employees believe that using QRIS will help them improve business performance, such as increasing sales, improving operational efficiency, or simplifying financial management. It was found that PE has a positive and significant effect on Behavioral Intention (BI) to adopt digital payment systems.
- **Expected Effort (EE):** The perceived ease of use of a QRIS, including how easy it is to learn and operate the system. The "Easy" aspect of QRIS is directly relevant here. EE positively and significantly influences BI to adopt digital payment systems.
- **Social Influence (SI):** The degree to which MSME owners/employees are influenced by their peers, community leaders, industry associations, or social trends to adopt a QRIS. SI can have a significant negative impact on the BI for digital payment adoption in some contexts, mainly due to cultural factors and the personal nature of financial transactions.
- **Facilitating Conditions (FC):** The perceived availability of resources and support required for QRIS implementation, including technical support, access to hardware (smart phones), software, and training. Individuals with access to the necessary resources and support are more likely to feel that the use of this system is within their control.
- **Hedonic Motivation (HM):** The pleasure or enjoyment derived from using a QRIS, such as the perception of being modern or tech-savvy, or the pure convenience it offers. HM has a positive and significant effect on BI to adopt digital payment systems, suggesting that the enjoyable aspects of these systems drive adoption.
- **Habit (HB):** The extent to which the use of QRIS becomes an automatic behavior through repeated use, seamlessly integrated into daily business operations. HB has a significant positive impact on BI for adopting digital payment systems, suggesting that existing habits (e.g., smart phone usage) can extend to digital payments.
- **Perceived Value (PV):** The overall value perceived by MSMEs from using QRIS, including both monetary and non-monetary benefits.

Trust is also an important factor beyond the UTAUT2 model, especially regarding concerns about security, fraud and data integrity. This is crucial in developing countries and needs to be built through system security assurance and data protection. In addition, when compared to the TOE (Technology-Organization-Environment) framework, UTAUT/UTAUT2 provides a micro view (individual level), while TOE looks at the macro side (organizational capacity and external pressures). Both complement each other in understanding technology adoption by MSMEs.

2.3 SWOT Analysis in Strategic Management

SWOT analysis is a widely recognized and systematic method used in strategic management to identify and categorize an organization's internal strengths and weaknesses, as well as external opportunities and threats (Mashuri & Nurjannah, 2020). Its fundamental purpose is to provide a structured framework for strategy formulation, which aims to maximize strengths and opportunities while simultaneously minimizing weaknesses and threats. SWOT analysis facilitates the comprehensive integration of internal and external factors, enabling the development of accurate and effective strategies in a dynamic and rapidly changing business environment. Its usefulness lies in providing a holistic view necessary for strategic decision-making.

2.4. Previous Studies on QRIS Adoption and Digital Transformation of MSMEs

A recent literature review (e.g., 2020-2025) on digital transformation strategies and challenges in Small and Medium Enterprises (SMEs) points out their crucial role in the global economy, but also their tendency to lag behind larger enterprises in adopting advanced technologies due to common barriers such as resource constraints, skills gaps, and lack of strategic capacity. SMEs often approach digital change gradually and pragmatically.

Specifically regarding QRIS adoption in Indonesia, academic research has identified its significant impact on financial recording efficiency and accountability. Identified challenges include the lack of public understanding and strong cultural preference for cash, as well as the influence of behavioral factors such as habit and hedonic motivation on adoption intention (Pratiwi, 2025). In addition, the role of central bank policy and pandemic risk have also been identified as variables that strongly influence the intention to use QRIS.

An important theme that emerges from previous studies is the interaction between top-down policy initiatives and bottom-up market dynamics. Some studies strongly highlight the role of central bank policies (Badrawani, 2025) and regulatory interventions as catalysts for adoption (Thanigan et al., 2025). In contrast, others emphasize market-driven factors such as increasing consumer preference for digital payments, high smartphone penetration, and internet access. This suggests that successful and sustainable digital payment integration requires a two-pronged approach that effectively combines regulatory push with market pull.

Studies conducted in various emerging markets (e.g., India, Pakistan, Indonesia) on factors influencing digital payment adoption generally include perceived ease of use, social norms, perceived risk, level of financial and digital literacy, and presence of facilitating conditions. The Indian demonetization case provides an important lesson: forced or rapid adoption during a crisis may not automatically lead to sustained use if underlying barriers (such as perceived costs, lack of understanding of long-term benefits, or trust issues) are not adequately addressed (Badrawani, 2025). This understanding is particularly relevant for Indonesia, given the surge in digital payment usage observed during the COVID-19 pandemic (Thanigan et al., 2025). This highlights the important distinction between early adoption (often driven by external pressures or novelty) and sustained use (driven by perceived value, habit and trust). Strategic frameworks should focus on transforming crisis-induced trial use into long-term adoption driven by value and habit for MSMEs.

3. Methods

This research uses a qualitative-analytical approach to develop a strategic framework for QRIS adoption among MSMEs. The research process went through systematic stages, starting from conceptual synthesis with secondary data collection, content analysis, to the use of the TOE framework and UTAUT/UTAUT2 model for understanding factors affecting adoption. Using the TOWS matrix, the research results in four strategic categories (SO, WO, ST, WT) that are tailored to the real conditions and capabilities of MSMEs, making a practical and comprehensive strategic plan in QRIS implementation. The research also identified recurring themes, success strategies, key barriers, and mapped the landscape of digital payment adoption by MSMEs using SWOT analysis. In essence, this methodology prioritizes a

layered approach that considers all relevant aspects to ensure the resulting strategy is truly practical and sustainable (Figure 2).

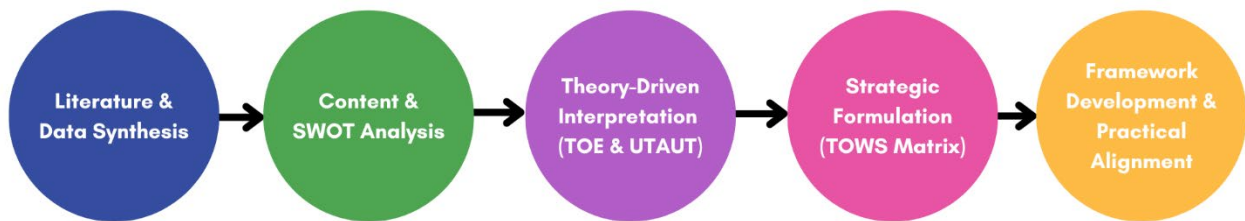


Figure 2. Methods

4. Data Collection

Data collection in this study was conducted through the following methods:

4.1 Official Document Study

Data was collected systematically through analyzing reports and publications from key institutions such as Bank Indonesia, the Ministry of Cooperatives and SMEs, and the Indonesian News Portal. In addition, academic journals relevant to the topic of technology adoption by MSMEs were used. This approach aims to gain a comprehensive picture of the current state, challenges and best practices in QRIS implementation.

4.2 Content Analysis

Data from documents and literature were systematically reviewed and synthesized to identify key themes, recurring challenges, proven effective strategies and key factors influencing digitization and QRIS adoption in the MSME sector

4.3 SWOT Analysis

Findings from the content analysis were categorized into strengths, weaknesses (internal factors), and opportunities and threats (external factors) to the adoption of QRIS by MSMEs. This analysis provides a strategic basis for designing relevant and contextualized interventions.

4.4 Application of the Theoretical Framework

The SWOT factors are then further examined using the TOE (*Technology-Organization-Environment*) framework and the UTAUT/UTAUT2 model. This approach helps to understand more deeply the influence of organization, external environment, and individual behavior in the technology adoption process.

4.5 Strategy Formulation and Framework Development

The final step involves formulating strategies using the SWOT matrix, namely SO, WO, ST, and WT strategies. The result is a comprehensive and applicable strategic framework, which can be used by MSMEs and stakeholders (such as Bank Indonesia, PSPs, and local governments) to accelerate QRIS adoption and drive sustainable growth.

5. Results and Discussion

This stage presents the findings of the SWOT analysis by carefully categorizing and discussing the internal and external factors that influence the adoption of QRIS by MSMEs. Each point is thoroughly supported by evidence from research sources and interpreted through the lens of the TOE and UTAUT/UTAUT2 theoretical frameworks.

5.1 SWOT Analysis of QRIS Adoption for MSMEs in Indonesia

Table 1. Analisis SWOT Adopsi QRIS untuk UMKM di Indonesia

STREANGHT	WEAKNESS
Government and Central Bank Support. QRIS is developed and fully supported by Bank Indonesia, creating a high sense of security, legitimacy and trust. (Environment - TOE)	Low Digital and Financial Literacy Many MSME players have difficulty understanding the benefits or how to use QRIS. (Effort Expectancy & Facilitating Conditions - UTAUT)
Easy and Practical to Use. The "scan and pay" feature facilitates transactions for MSME actors and consumers. (Effort Expectancy - UTAUT)	Limited Human Resources and Technical Skills The lack of trained manpower hinders digitalization. (Organization - TOE)
Universal and Inclusive. QRIS can be used by various payment platforms. (Relative Advantage - TOE)	Cultural Preference for Cash Transactions Cash transactions are still a strong habit in society. (Habit - UTAUT)
Improves Operational and Financial Efficiency Simplify transaction recording and increase accountability. (Performance Expectation - UTAUT)	Security and Fraud Concerns Fear of fake QR codes and risk of digital fraud. (Trust - critical factor of UTAUT+ and TOE)
Potential to Increase Sales and Market Reach Attracting <i>digital-savvy</i> consumers, including Gen Z. (Performance Expectation - UTAUT)	Inconsistent Digital Promotion Strategy Some MSMEs have not been consistent in managing digital promotions, resulting in fluctuating results.
OPPORTUNITY	THREAT
High Usage of Mobile and Internet Opens up great opportunities for digital payment adoption. (Facilitating Conditions - UTAUT)	Competition from other payment methods MSMEs must continue to innovate to stay competitive. (Environment - TOE)
Post-Pandemic Behavior Change. The pandemic has encouraged people to become more accustomed to digital payments.	Fast Changing Consumer Trends and Preferences MSMEs need to be adaptive to market dynamics.
Utilization of User-Generated Content (UGC) UGC from customers can be utilized for branding and promotion.	Cyber Security Threats The risk of cyberattacks and digital fraud can reduce trust.
Digital Payment Ecosystem Support The presence of various PSPs makes it easier for MSMEs to choose the appropriate solution.	Digital Infrastructure Gap There are still many areas that do not support optimal digitalization.

Based on the results of the SWOT analysis of QRIS adoption for MSMEs in Indonesia shown in Table 1, it can be concluded that QRIS has major strengths in strong support from the government (Bank Indonesia), ease of use, universal nature, and the potential to increase operational and sales efficiency. This is in line with the TOE (Technology, Organization, Environment) and UTAUT (Unified Theory of Acceptance and Use of Technology) frameworks, where environmental aspects and user expectations are significant driving factors. The ease of use of QRIS (effort expectancy) and perceived benefits (performance expectancy) drive the behavioral intention of MSMEs to adopt it, especially in the midst of an increasingly strong digitalization push.

However, there are still major challenges that hinder the optimization of QRIS adoption. Internal weaknesses such as low digital and financial literacy, limited human resources, and dominant cash transaction habits are the main obstacles in the organizational and individual context. On the external side, threats such as competition from other payment methods, changing consumer preferences, and digital security risks require MSMEs to continuously adapt and improve their capabilities. Therefore, an appropriate strategy must be designed by considering the existing strengths and opportunities, while anticipating the weaknesses and threats, for effective and sustainable QRIS implementation among Indonesian MSMEs.

5.2 Strategic Framework for Digital Payment Integration (SO, WO, ST, WT Strategies)

Based on the SWOT analysis, the following strategic framework is proposed to guide MSMEs in integrating QRIS digital payments to increase sales and efficiency. These strategies are designed to capitalize on strengths, address weaknesses, take advantage of opportunities, and mitigate threats (Table 2).

Table 2. Strategic Framework for QRIS Adoption by MSMEs (SO, WO, ST, WT)

Internal Factors	Streghths (Streghths-S)	Weakness (Weakness-W)
	QRIS is fully supported by the government and Bank Indonesia, increasing trust and legitimacy. QRIS is also universal and inclusive because it can be used on all payment platforms.	Low digital and financial literacy, limited skilled human resources, and a culture that still relies on cash are the main obstacles for MSME players in adopting the QRIS system.
Eksternal Factors	The use of QRIS increases the efficiency of financial records and accountability through the "scan and pay" feature, making transactions fast and practical for MSMEs. Thus reaching more consumers such as Gen-Z.	Concerns over transaction security and the risk of QR code fraud, plus inconsistent digital promotions, hinder the optimization of the benefits of digital payment technology for MSMEs.
Oppoportunities (Opportunities-O)	Strategy SO	Strategy WO
High smartphone usage and post-pandemic changes in consumer habits create ideal conditions for MSME adoption of digital payments.	Take advantage of government support and the user-friendly nature of QRIS to expand digital-based education through social media.	Improve digital & financial literacy of MSME players through mobile-based online training.
The development of digital payments and the potential of UGC for branding opens MSME access to formal financial services.	Use the popularity of QRIS and the growth of internet users to develop UGC-based financial inclusion campaigns.	Empower local communities & business associations as facilitators of QRIS adoption.
Threats (Threats-T)	Strategy ST	Strategy WT
Competition from other digital payment methods and demand for adaptation to rapidly changing consumer trends.	Utilize QRIS advantages (universal & practical) to highlight differentiation from other payment methods in promotional materials.	Provide short-term technical assistance in areas with weak infrastructure.
Cybersecurity threats and infrastructure gaps in remote areas hinder QRIS adoption and trust.	Strengthen BI's security image and support to counteract negative perceptions of digital security.	Collaborate with digital platforms (e.g. marketplaces and e-wallets) so that MSMEs are not left behind by consumer trends.

Based on the SWOT matrix analysis, it can be identified that MSMEs have significant strengths, especially in government support and the legitimization of QRIS as a universal payment system. However, they are still faced with fundamental weaknesses, such as low digital-financial literacy and high dependency on cash transactions. The application of which strategy is also applied by previous research (Gandhy et al., 2024) so that it is divided into several quadrants, namely:

- **SO (Strengths-Opportunities) strategy:** This strategy utilizes internal strengths to capture external opportunities. In the context of QRIS, the SO strategy emphasizes the importance of capitalizing on the post-pandemic digitalization momentum, especially by increasing digital-based education and mobile training. This aims to address the digital-financial literacy gap of MSMEs and empower local communities to act as facilitators of QRIS adoption.
- **WO (Weakness-Opportunities) Strategy:** A WO strategy focuses on improving internal weaknesses by capitalizing on external opportunities. Further for MSMEs, this means addressing low literacy and cash dependency through training that leverages digitization opportunities to increase adoption.

- **ST (Strengths-Threats) Strategy:** The ST strategy uses internal strengths to deal with external threats. In the face of competing digital payment methods and cybersecurity threats, utilizing the universal and practical advantages of QRIS is key to differentiation. This allows MSMEs to remain competitive and protected from potential threats.
- **WT (Weakness-Threats) Strategy:** The WT strategy aims to minimize internal weaknesses to avoid external threats. Facing access inequality in remote areas and security threats, strengthening technical infrastructure as well as collaboration with digital platforms is necessary. This helps MSMEs overcome accessibility limitations and cybersecurity risks.

Overall, the strategy outlined integrates technology, education, and partnership aspects to ensure sustainable and inclusive adoption of QRIS for the entire MSME ecosystem.

5.3 Uniqueness of the Indonesian Context

The Indonesian context offers some unique characteristics that influence QRIS adoption and differentiate it from other countries:

- **Central Role of Bank Indonesia:** Unlike many countries where the adoption of digital payments is market driven, QRIS in Indonesia is a direct policy initiative of Bank Indonesia(2022). This provides a high level of standardization, oversight, and legitimacy that may not exist in other markets. This strong central bank involvement, including the "UNGGUL" or "PAKAI" theme (Badrawani, 2025), aims to ensure a unified and inclusive system. However, it also raises questions about how much adoption is driven by policy versus pure market demand, especially after the impact of the pandemic.
- **Influence of COVID-19 Pandemic as a Catalyst:** The launch of QRIS in August 2019 coincidentally coincided with the emergence of the COVID-19 pandemic (Muskita, 2025). This pandemic significantly accelerated the use of contactless and digital payments in Indonesia. This creates a situation where it is difficult to separate the impact of central bank policies from the impact of the pandemic in driving QRIS usage intentions (Badrawani, 2025). While the pandemic forcibly drove initial adoption, the long-term sustainability of usage still needs to be ascertained, as crisis-triggered adoption does not necessarily lead to sustained usage if underlying barriers are not addressed.
- **Varying Cultural Preferences Towards Cash and Digital Literacy:** Despite high smartphone and internet penetration (Rofingatun et al., 2024), there is still a strong cultural preference towards cash transactions in most Indonesians. In addition, digital and financial literacy levels vary widely across regions and MSME segments (Muhammad et al., 2024). This creates unique challenges in building trust and changing payment habits, which requires not only education but also demonstration of tangible and personalized benefits.
- **Cross-Sector Inclusiveness:** QRIS in Indonesia is not only used for commercial transactions, but has also been extended to various sectors such as local government tax and levy payments, ZISWAF (Zakat, Infaq, Sedekah, and Waqf), business units and administrative fees of pesantren, as well as health, tourism, and transportation services (Pratiwi, 2025). This diversification of uses indicates a broader effort to integrate digital payments into various aspects of daily life, which could increase overall adoption.

Despite high smartphone and internet penetration, Indonesia still faces the unique challenges of a strong cultural preference for cash transactions and highly variable levels of digital-financial literacy across regions and MSME segments. This requires a customized approach in building trust and changing payment habits that not only relies on education, but also demonstration of tangible and personalized benefits. On the other hand, the inclusivity of QRIS extended to various sectors such as tax payments, ZISWAF, boarding school administration, healthcare, tourism, and transportation demonstrates a comprehensive effort to integrate digital payments into various aspects of daily life, potentially increasing overall adoption in Indonesia's MSME ecosystem.

5.4 Transferability of the Strategic Framework

The strategic framework of QRIS adoption for MSMEs in Indonesia has significant transferability potential to other developing countries facing similar challenges. Many emerging economies have similar characteristics such as the dominance of the MSME sector, increasing smartphone penetration, and great need for financial inclusion, as well as common challenges of low digital literacy, cash preference, and security concerns. The use of the TOE and UTAUT/UTAUT2 theoretical frameworks provides a strong basis for transferability as these models have proven effective in explaining technology adoption across different cultural contexts, with the possibility of customizing specific variables to each country's local conditions.

While Bank Indonesia's role in QRIS is unique, the concept of government or central bank support as a driver of payment technology adoption can be adapted by financial regulators, industry associations, or bank consortia in other countries. Indonesia's experience with the COVID-19 pandemic as a change agent provides valuable lessons on leveraging external shocks to drive technology adoption, while developing post-crisis sustainability strategies. The emphasis on trust building, demonstration of tangible benefits, and digital marketing strategies such as utilization of UGC and *influencer* collaboration have universal relevance that can be scaled to various global markets, providing a valuable roadmap for developing countries seeking to scale up digital payment integration in Indonesia's MSME sector.

6. Conclusion

This research developed a comprehensive strategic framework for QRIS adoption by MSMEs in Indonesia through SWOT analysis enriched with TOE and UTAUT theoretical frameworks, identifying internal strengths of Bank Indonesia support and QRIS ease of use offset by weaknesses of low digital literacy and cash preference, as well as external opportunities of high smartphone penetration and post-pandemic changes in consumer behavior faced with threats of digital competition and cybersecurity risks. The resulting strategic framework emphasizes leveraging strengths to seize opportunities while addressing weaknesses through focused training and building trust to mitigate threats, with the uniqueness of the Indonesian context that includes the central role of the central bank, the catalytic impact of COVID-19, and variations in digital literacy that nonetheless allow transferability to other emerging economies through adaptation of local nuances. Overall, QRIS adoption is a complex phenomenon influenced by not only technological characteristics but also MSME organizational capacity, dynamic external environment, and individual perceptions, so this strategic framework provides a holistic roadmap to drive sustainable adoption leading to increased sales, operational efficiency, and greater financial inclusion for the MSME ecosystem.

References

- Aliyev, V., Digital Transformation Strategies and Challenges in Small and Medium Enterprises (SMEs): A Systematic Review and Future Directions. ResearchGate, 2025. <https://doi.org/10.13140/RG.2.2.27245.29924>
- Amri, A., Malik, R. F., & Fachrandi, M. K., Determinants Influencing QRIS Adoption as a Digital Payment Tool in Ciledug, Tangerang City. Airlangga Journal of Innovation Management, 6(1), 154–170, 2025. <https://doi.org/10.20473/ajim.v6i1.70331>
- Aprisca, D. P., & Aligarh, F., Revolutionizing MSMEs: The Impact of Mobile Payment Readiness through TOE Framework. Innovation, Technology, and Entrepreneurship Journal, 1(1), 28–41, 2024. <https://doi.org/10.31603/itej.10657>
- Badrawani, W., Digital Payment Policy Impact Analysis on the Intention to Use QRIS (Quick Response Code Indonesian Standard) During COVID-19 Pandemic. arXiv, No. arXiv:2506.11695, 2025. <https://doi.org/10.48550/arXiv.2506.11695>
- Bank Indonesia, Quick Response Code Indonesian Standard (QRIS). Bi.Go.Id, 2022. <https://www.bi.go.id/en/fungsi-utama/sistem-pembayaran/ritel/kanal-layanan/QRIS/default.aspx>
- Databoks.katadata.co.id, 3,82 Juta UMKM Sudah Mengadopsi QRIS | Pusat Data Ekonomi dan Bisnis Indonesia | Databoks, 2020. <https://databoks.katadata.co.id/teknologi/telekomunikasi/statistik/7d4702fbd4d67e/382-juta-umkm-sudah-mengadopsi-qr>
- Gandhy, A., Gursida, H., Sunarta, K., Marota, R., & Zaini, O. K., Maggot Cultivation Business Development Strategy at the Siliwangi Unit Waste Bank. Jurnal Ilmiah Manajemen Kesatuan (JIMKES), 17(5), 1471–1482, 2024.
- Gumilang, A. S. P., Gandhy, A., & Prasetyo, B. D., Digital Marketing Development Strategy to Increase the Number of Tourists. Jurnal Ilmiah Manajemen Kesatuan (JIMKES), 12(6), 2165–2176, 2024.
- Indonesia.go.id, Transaksi QRIS Melonjak 226,54%, Revolusi Pembayaran Digital di Indonesia, 29 July 2024. <https://indonesia.go.id/kategori/%20editorial/8434/transaksi-qr-is-melonjak-226-54-revolusi-pembayaran-digital-di-indonesia>
- Maksum, M., Muflih, M., Rohman, M. M., Injaz, F., & Sanrego, Y. D., Why Do Women Micro-Entrepreneurs Adopt Islamic Digital Financing? Perspectives from UTAUT, Trust and Sharia Compliance. Journal of Islamic Marketing, ahead-of-print(ahead-of-print), 2025. <https://doi.org/10.1108/JIMA-03-2023-0087>
- Mashuri, M., & Nurjannah, D., Analisis SWOT Sebagai Strategi Meningkatkan Daya Saing. JPS (Jurnal Perbankan Syariah), 1(1), 97–112, 2020. <https://doi.org/10.46367/jps.v1i1.205>
- Minarni, E., Impact of Digital Payment Systems on Financial Inclusion and Small Business Growth in Developing Economies. International Journal of Innovation and Thinking, 2(1), 1–12, 2025. <https://doi.org/10.71364/ijit.v2i1.6>

- Muhammad, F., Suroso, A. I., & Djohar, S., Factors Influencing the Use of QRIS in Digital Transactions. *Jurnal Aplikasi Bisnis Dan Manajemen*, 10(3), Article 3, 2024. <https://doi.org/10.17358/jabm.10.3.858>
- Muskita, Indonesia's Central Bank Responds to US Criticism of QRIS. *Tech in Asia*, 26 April 2025. <https://www.techinasia.com/news/indonesias-central-bank-responds-criticism-qr>
- Pramudito, D. K., Achmady, S., Dewa, D. M. R. T., Pitri, T., & Hermanto, D. M. C., The Application of Technology-Organization-Environment Framework to Analyze SME Readiness in Using Digital Payment Applications. *Jurnal Informasi Dan Teknologi*, 95–90, 2023. <https://doi.org/10.60083/jidt.v5i3.406>
- Pratiwi, S. R., Bank Indonesia's Communication Strategy for QRIS Adoption in Digital Payment. *CoverAge: Journal of Strategic Communication*, 15(2), Article 2, 2025. <https://doi.org/10.35814/coverage.v15i2.8511>
- Rofingatun, S., Kambuaya, M. K. P., & Solissa, R. N., Analyzing QRIS Adoption Factors and Its Effects on Usability and Decision-Making in Jayapura's MSMEs. *Keynesia : International Journal of Economy and Business*, 3(2), Article 2, 2024. <https://doi.org/10.55904/keynesia.v3i2.1334>
- Saadullah, M., Naeem, M., Umer, K. B., Khan, N., Naheed, K., Sheeraz, M., & Iqbal, N., Risk and Resilience in Digital Payment Adoption: Analyzing Consumer Behavior Through the UTAUT2 Framework in Pakistan. *Kurdish Studies*, 12(2), 2024. <https://doi.org/10.53555/ks.v12i2.3752>
- Thanigan, J., Reddy, N. S., Maity, M., Sethuraman, P., & Rajesh, J. I., An Integrated Framework for Understanding Innovative Digital Payment Adoption and Continued Usage by Small Offline Retailers. *Cogent Economics & Finance*, 13(1), 2462442, 2025. <https://doi.org/10.1080/23322039.2025.2462442>

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