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Transnational Interaction and Community Engagement: The Role of Indonesian Migrant Workers in The Cross-Border Adoption of Qris on Japan Toward SDGS

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QRIS; Migrant; Japan; Diaspora; Indonesian Migrant Workers.

Abstract

Digital payment systems have transformed transnational financial interactions by reshaping the social and economic dynamics of diaspora communities across borders. This research aimed to describe and analyze several key issues discussed in the results and discussion section: (1) QRIS and the Indonesian economy, (2) QRIS expansion to foreign countries, (3) opportunities for Indonesian migrant workers in Japan, and (4) strategies for optimizing QRIS utilization in Japan. A mixed-methods approach was employed by combining qualitative and quantitative methods. Based on the simulation results and the mapping of opportunities and challenges related to QRIS implementation among Indonesian migrant workers (Pekerja Migran Indonesia/PMI) in Japan, if 35% of PMI conducted 20 transactions per month with an average transaction value of ¥3,500 (±IDR 393,000), the potential foreign exchange generated would reach IDR 46.22 billion annually. This potential would increase to IDR 105.64 billion if QRIS adoption reached 80% of the total PMI population. The estimated value could be even higher if annual Indonesian tourist visits to Japan were also included in the calculation. The expansion of QRIS in Japan could be accelerated through the active role and community engagement of migrant workers as early adopters and financial intermediaries within their social networks in Japan. The findings of this study are expected to contribute to the broader discourse on transnational digital finance and expand research on technology-based financial inclusion within diaspora communities, particularly among Indonesian migrant workers in Japan.

INTRODUCTION

The past decade has witnessed significant advances in financial technology (fintech) in Indonesia, positioning digital transformation as a key pillar in strengthening the national financial system (Jameaba, 2020). One of the major breakthroughs in the financial sector occurred in 2019 when Bank Indonesia launched the Quick Response Code Indonesian

Standard (QRIS). QRIS was developed to standardize payment codes across service providers within a unified payment scheme, enabling communities, businesses, and consumers to conduct digital transactions more easily, quickly, securely, and inclusively (Bank Indonesia, 2024). QRIS not only accelerates domestic economic transactions but also expands access to formal financial services (Ramayanti et al., 2025). Through increased digital payment adoption among the informal sector and micro, small, and medium enterprises (MSMEs), QRIS has improved transaction efficiency, transparency, and support for national financial inclusion targets. The adoption of QRIS increased significantly during the COVID-19 pandemic due to the growing demand for efficient and secure cashless transaction systems (Sofwatunnisa et al., 2023). Following its domestic success, QRIS was subsequently directed toward international expansion. Within this internationalization strategy, the Indonesian diaspora, particularly Indonesian Migrant Workers (Pekerja Migran Indonesia/PMI), has become a key group of interest.

Japan is one of the major destination countries for PMI, with the number of Indonesian workers continuing to increase annually. According to a report from the Immigration Services Agency of Japan, the total number of PMI in Japan reached 199,824 workers by the end of 2024, working across various sectors, including manufacturing, elderly care, agriculture, construction, fisheries, and other industries (ISA, 2024). Most PMI belong to the productive age group and have relatively stable incomes, making them a highly potential segment within the digital financial ecosystem. Their presence in Japan also creates a distinct social environment in which transnational interactions between migrant workers and local communities influence digital financial behavior and adoption patterns.

Remittances sent by PMI represent an important source of foreign exchange for Indonesia. Despite challenges in cross-border fund transfers, including high transaction fees, limited access to financial services, and lengthy processing times, QRIS has the potential to address these issues through a more efficient, cost-effective, and integrated cross-border payment system (Rachman et al., 2024). The adoption of QRIS among migrant workers could strengthen Indonesia's position within the global digital financial ecosystem while reducing dependence on international payment systems operated by foreign companies (Sonjaya et al., 2025). In this context, QRIS functions not only as a financial instrument but also as a medium of transnational interaction that connects the Indonesian diaspora with Indonesia's economic ecosystem.

The expansion of QRIS to several countries that have previously adopted the system has also encountered various challenges. These challenges include limited digital financial literacy among migrant workers, insufficient socialization efforts by government institutions and Indonesian representatives abroad, and suboptimal cooperation with local service providers. Such challenges are closely related to the social environment experienced by PMI abroad, where limited community engagement from relevant stakeholders may hinder the broader adoption of digital financial services. Therefore, comprehensive research is required to understand how QRIS can be effectively implemented internationally, particularly among PMI in Japan.

The aim of this study was to describe several key issues examined in the results and discussion section: (1) QRIS and the Indonesian economy, focusing on how the system contributes to national economic growth through improved transaction efficiency; (2) QRIS expansion to foreign countries, discussing the internationalization of QRIS, cross-border cooperation mechanisms, and technical and policy challenges associated with implementation; (3) opportunities for Indonesian Migrant Workers in Japan, identifying the strategic position of PMI as potential QRIS users within cross-border transaction systems; and (4) optimization of QRIS utilization in Japan, focusing on socialization, education, regulatory, and partnership strategies required to support QRIS implementation in migrant destination countries.

Academically, this research is expected to contribute to the discourse on transnational digital finance and expand studies on technology-based financial inclusion within diaspora communities, particularly among PMI in Japan. Practically, the findings are expected to provide valuable input for relevant stakeholders, including Bank Indonesia, the Indonesian Migrant Workers Protection Agency (Badan Pelindungan Pekerja Migran Indonesia/BP2MI), and the Ministry of Manpower (Kementerian Ketenagakerjaan/Kemnaker), in developing more adaptive and integrated digital financial diplomacy policies. Furthermore, this research contributes to understanding how community engagement and transnational social interactions can encourage the adoption of digital financial services among diaspora communities, aligning with Sustainable Development Goal (SDG) 8 on Decent Work and Economic Growth and SDG 10 on Reduced Inequalities. This research also provides a broader perspective on PMI studies in Japan, which have predominantly focused on issues related to violations, exploitation, and challenges experienced by migrant workers.

Consistent with previous research conducted by the author, Prabowo et al. (2024), this study highlights the ability of PMI to adapt socially within Japanese society and maintain aspects of Japanese culture after returning to Indonesia. Furthermore, Rizcha et al. (2024) examined Indonesian interns working in elderly care facilities who experienced challenges related to maintaining their Muslim identity due to workplace restrictions, including limitations on wearing the hijab and practicing religious activities. Rustam (2021, 2023) investigated symbolic and structural violence experienced by Indonesian interns in Japan across various occupational sectors and regions, including discomfort experienced by interns working in oyster farming in Hiroshima. Additionally, Salombe et al. (2025) examined the limited Japanese language proficiency among Indonesian interns in Japan, which was influenced by restricted access to language resources and limited interest in language preparation before employment.

The novelty of this research lies in several aspects. First, this study comprehensively examines the role of Indonesian migrant workers (PMI) in Japan as agents of cross-border QRIS adoption by considering the social environment and transnational interactions that shape digital financial behavior. Second, this study applies a mixed-methods approach combined with economic simulations to estimate the foreign exchange potential generated through PMI adoption of QRIS. Third, this study provides practical policy recommendations for relevant stakeholders, including Bank Indonesia, BP2MI, and the Ministry of Manpower, in developing adaptive digital financial diplomacy strategies. Fourth, this study integrates an analysis of the opportunities and challenges associated with QRIS implementation in Japan from the socio-economic perspective of PMI. Research by Hamada (2025) highlights that ASEAN has progressed toward QR code payment interoperability through cooperation between Bank Indonesia and the Bank of Japan, strengthening the technical foundation for QRIS implementation in Japan.

This study employed a mixed-methods approach by combining qualitative and quantitative methods to obtain a comprehensive understanding of QRIS adoption among PMI in Japan. Quantitative analysis was used to simulate the economic potential of QRIS utilization by PMI through estimated transaction frequency, transaction value, and payment system fees. Meanwhile, qualitative analysis based on literature reviews and secondary data was conducted to identify user needs, adoption barriers, and contextual factors influencing implementation. By examining these dynamics within the social environment of Indonesian migrant workers in Japan, this research addresses gaps in previous studies and provides a conceptual foundation for strengthening Indonesia's position in the global digital economy. As a digital payment system, QRIS has expanded beyond its domestic function and has become a strategic instrument representing Indonesia's financial sovereignty and competitiveness in the era of cross-border digital transactions.

METHOD

The study employed a mixed-methods approach by combining qualitative and quantitative methods to obtain a comprehensive understanding of the phenomenon under investigation. This approach was selected because it was considered appropriate for capturing the complexity of QRIS adoption among PMI in Japan, which involves both macroeconomic dimensions and socio-cultural dynamics at the micro level. Specifically, a descriptive approach was applied to provide a systematic and factual analysis of the potential use of QRIS among migrant workers following its activation in Japan on August 17, 2025. This approach enabled the identification of existing conditions, implementation challenges, and opportunities for developing QRIS as a migrant-friendly cross-border financial instrument.

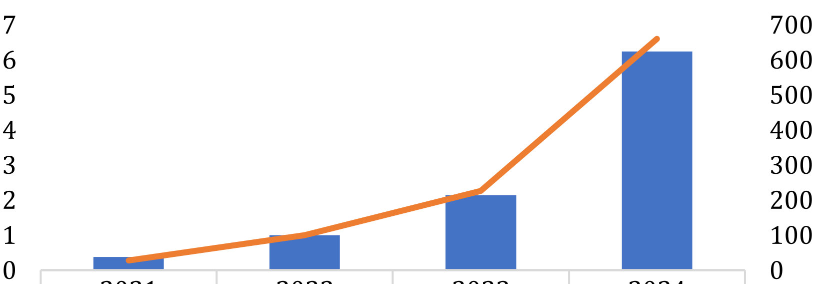
This research was conducted in two stages. First, quantitative analysis was performed through economic simulations using parameters such as transaction frequency, transaction value, and foreign exchange potential based on different user adoption scenarios. This analysis provided an estimation of the potential economic contribution of QRIS utilization among PMI in Japan. Second, qualitative analysis was conducted through literature reviews and examinations of relevant secondary documents, including labor migration policies, developments in cross-border digital payment systems, and demographic and social characteristics of Indonesian migrant workers in Japan.

The research was conducted in Japan, one of the primary destination countries for Indonesian migrant workers. The selection of this research location was based on two considerations: the significant number of PMI working in Japan and Japan's strategic position as a partner in the expansion of cross-border QRIS implementation. The research subjects focused on Indonesian Migrant Workers residing and working in Japan, particularly those who actively engage in financial transactions and have potential to adopt QRIS in their daily activities. The findings of this study are expected to contribute to the literature on the transnational digital economy, inclusive finance for diaspora communities, and the intersection between financial technology, migration, and economic diplomacy. Furthermore, the results may serve as a reference for policymakers in the monetary and migration sectors in developing QRIS internationalization strategies that are more responsive to the needs and conditions of PMI in Japan.

RESULTS AND DISCUSSION

QRIS and the Indonesian Economy: Digital Interaction in the National Financial Ecosystem

The advancement of digital technology is one of the main catalysts for a country's sustainable development, and Indonesia is no exception. One of the positive implications of the development of digital technology is the development of a payment *system* that is increasingly efficient and integrated in a financial ecosystem. Indonesia currently has a *digital payment system* called QRIS (*Quick Response Code Indonesian Standard*) which began to be implemented nationally in 2020. The use of QRIS at that time increased quite well as restrictions on social activities were imposed to mitigate the potential transmission of the COVID-19, so that direct interaction, including transactions, was also increasingly limited. During the COVID-19 pandemic, the number of digital transactions, including the use of QRIS, increased in Indonesia and continues to increase. In 2021, Bank Indonesia stated that the use of QRIS was increasingly massive and made a considerable contribution to the Indonesian economy. From the user's perspective, convenience is certainly the main factor in using QRIS, which can significantly impact the Indonesian economy. The latest data from Bank Indonesia (BI) and the Indonesia Stock Exchange (IDX) show that the increase in the use of QRIS until April 2025 increased by +/- 155% compared to the same period in the previous year. More specifically, ease of transactions, consumer preferences, security, infrastructure support, and education are factors that are integral to increasing the use of QRIS. Historical data on the volume and value of transactions using QRIS can be presented as follows.



	2021	2022	2023	2024
Volume (Billion)	0,4	1,0	2,1	6,2
Nominal (IDR Trillion)	27,6	100,0	226,0	659,9

Figure. 1. Volume and nominal of QRIS transactions

Source: Asosiasi Sistem Pembayaran Indonesia (ASPI, 2025)

Based on the data above, it can be concluded that a sharp increase occurred in the 2024 period, where both the volume and nominal transactions increased in the range of +/- 192%. In detail, the types of transactions that most use QRIS are in retail and trade, food and beverages, transportation, traditional market transactions (including MSMEs), and other digital services. This shows that the use of QRIS is mostly carried out on products (goods and services) that are *consumer goods* (even those that fall into the fast-moving category*) and have relatively* high turnover. This also explains why the increase in QRIS in 2024 is very high. As a form of payment system, QRIS can also be classified as a service similar to a business in general, which fundamentally has competitors. In April 2025, President Trump expressed a complaint against QRIS and Indonesia Payment Gateway (GPN), which were considered less transparent. This complaint is simple because with the existence of QRIS and GPN, the position of Visa and Mastercard is threatened. So far, there has been a "leakage" of foreign exchange resulting from transactions using Visa and Mastercard, where the use of QRIS and GPN will reduce the potential for this "leakage" in the future and mean that the service from the United States will lose potential revenue. This is a common business dynamic, where competition will present a "*trade-off*" between profit target (cross-country service providers) and nationalism (*host*country). However, whatever it is, the main foothold is certainly the most optimal effort to provide benefits to Indonesia.

In the context of macroeconomics, the strengthening of the national payment system through QRIS reflects Indonesia’s strategic steps in reducing its dependence on foreign-dominated global financial infrastructure. This QR-based payment system is not only a transaction tool but also a representation of digital sovereignty efforts in the financial sector. By bringing various service providers together into a single national standard, QRIS is slowly building an integrated payment ecosystem that favors domestic interests. This is an important milestone in encouraging technology-based economic nationalism, where the state controls transaction systems and data rather than foreign corporations (Sonjaya et al., 2025).

Based on the above data, a sharp increase occurred in the 2024 period when both the volume and Furthermore, QRIS strengthens the country’s position in regulating foreign exchange flows and minimizes exchange rate leakage that has been flowing abroad due to the dominance of services such as Visa and Mastercard. The policy of strengthening the national payment system through QRIS and GPN opens up opportunities for Indonesia to maintain most of the transaction fees distributed to foreign companies. Thus, the economic value of any digital transaction can be restored to support national economic growth, increase state revenues, and expand the fiscal base (Bakhitah et al., 2023). Apart from being a fiscal strategy, QRIS also has a significant microeconomic impact, especially in encouraging financial inclusion. QRIS has proven to be effective in reaching MSME actors and the informal sector, which has been difficult to access conventional financial services. Through easy to adopt technology and low transaction fees, QRIS becomes a bridge between small communities and formal financial systems. This opens up opportunities for equal access to finance, increasing digital literacy, and strengthening the economic capacity of the lower class community (Sofwatunnisa et al., 2023)

In the regional and global context, the presence of QRIS is also a tool for Indonesia’s economic diplomacy. Through cooperation with countries such as Thailand, Malaysia, and Japan, Bank Indonesia seeks to build a QR-based cross border payment system. This step not only facilitates transactions between countries, both by tourists and migrant workers, but also shows that Indonesia is beginning to play an active role in determining the direction and standards of payment systems in the Asian region. In the midst of fierce competition between countries in the mastery of financial technology, Indonesia’s ability to develop and export its own payment system is a strategic achievement that deserves appreciation (Ramayanti et al., 2025). Therefore, QRIS is not only a financial digitalization project but also an instrument for the state to strengthen its bargaining position in the global digital economy. Independence in the payment system will strengthen the resilience of the national economy, especially despite global uncertainty, exchange rate fluctuations, and the risk of foreign dominance in the financial sector. In the long term, the success of QRIS can serve as a model for the development of the digital economy based on economic justice, data sovereignty, and alignment with local economic actors. (Tiovilda & Melissa, 2025). With a comprehensive approach, QRIS can become more than just a digital transaction tool. It is a symbol of Indonesia's determination to stand on an equal footing and even lead in shaping an inclusive, just, and sovereign digital economic order.

Transnational Interaction and QRIS Expansion to Foreign Countries

Other countries, such as Japan and China, also offer Digital Payment System (DPS) services. In Japan, there are PayPay and FeliCa, and in China it is currently dominated by Alipay and WeChat. In the future, QRIS will be expanded to Malaysia, Singapore, Thailand, Laos, Vietnam, and Brunei Darussalam. With the expansion of QRIS to China and Japan, Indonesia can strengthen its position in the context of the Global Value Chain (GVC) in addition to providing transaction facilities for Indonesian tourists abroad. In general, QRIS expansion has potential benefits worldwide, especially in China and Japan. QRIS's cross-border expansion is not just a transaction but part of a national strategy to build transnational financial connectivity and foster meaningful interaction between Indonesian diaspora communities and their host country's financial environment. As noted by Hamada (2025), ASEAN has moved toward the interoperability of QR code standards, such as QRIS and JPQR, through a Memorandum of Understanding (MoU) between Bank Indonesia and Bank of Japan, strengthening the technical foundation for QRIS in Japan (Hamada, 2025). Bani Rachmad and Raharjo (2023) also emphasized that QRIS accelerates cross-border financial inclusion in ASEAN, with the potential to expand MSMEs' access to international payments. (Bani rachmad & Raharjo, 2023). Putri Metri (2024) highlights that MSMEs must be prepared to face multicultural and multiexchange transactions in QRIS expansion, including adjustments to technical infrastructure and merchant education. This is relevant for the Japanese context, where local merchants—especially those operated by the diaspora—need to be encouraged to embrace QRIS through incentives, training, and adoption process simplification (Putri Metri, 2024), Yani (2025) explained that QRIS and GPN strengthen Indonesia's digital positioning and hinder the dominance of Visa and Mastercard by integrating global economic regulations and digital sovereignty (Yani, 2025).

As we known, China is one of the economic powers that is straightforward to be a "challenger" to the dominance of the United States in the world. With the expansion of QRIS to China and Japan, the economic integration between Indonesia and Japan will also be strengthened. The second potential benefit is to make travel easier, particularly for Indonesian tourists, where these conveniences will increase the turnover of Indonesian tourists abroad. One of the most tangible impacts of the increasing number of Indonesian tourists abroad is to become an "*ambassador*", especially in terms of culture, so that it will have a derivative impact such as the interest of foreign tourists to visit Indonesia. The third is to strengthen Indonesia's position in the digital financial ecosystem so that it can have a future derivative impact, which is expected to encourage the birth of MSMEs to facilitate export-oriented product transactions. These benefits collectively reflect the broader goals of SDG 8 (Decent Work and Economic Growth) and SDG 17 (Partnerships for the Goals), as QRIS expansion fosters cross-border economic collaboration and supports inclusive financial growth. On a wider scale, Siew Leng (2023) emphasized that ASEAN is preparing a regional expansion QR code system, the "ASEAN QR Network" to strengthen local economic identity and reduce dependence on the US dollar, supporting the local currency based digital economy sovereignty strategy (Siew Leng, 2023). These dynamics are important for Indonesia in preparing QRIS standardization, security, and interoperability in Japan. In addition to technical and policy factors, cultural adaptation and user trust are also important. Rafferty and Fajar (2022) stated, merchant adoption of QRIS is influenced by digital system readiness, trust level, and perceived ease of use (Rafferty & Fajar, 2022). Therefore, the education and partnership agenda directed at the diaspora community and local businesses in Japan should emphasize benefit-driven aspects, transaction security, and technical support. Overall, the expansion of QRIS to Japan requires a multi-level strategy: interbank regulatory harmonization, technical standardization, merchant engagement, community education in the diaspora, and public campaigns through the Indonesian Embassy. Thus, QRIS can transform from a domestic transaction tool to a digital economic diplomacy instrument that promotes inclusion, sovereignty, and fiscal efficiency on a global scale.

Community Engagement and Opportunities for Indonesian Migrant Workers in Japan

Japan is a country where QRIS is expanding. However, Japan is also in dire need of foreign labor due to its declining productive population. Thus, this is an opportunity for Indonesia to send labor to Japan to improve the welfare of workers in addition to being a source of foreign exchange for Indonesia. In this regard, the role of community engagement becomes central, as the success of QRIS adoption among Indonesian migrant workers in Japan depends not only on technical readiness but also on how well the diaspora community is informed, mobilized, and supported within their social environment in Japan. Based on historical data from the Ministry of Indonesian Migrant Worker Protection (KP2MI), there are currently +/-700 thousand migrant workers spread across several countries in the Middle East, Malaysia, Hong Kong, Taiwan, Japan, and South Korea. (KP2MI, 2025). Approximately 199,598 thousand migrant workers are working in Japan, including those on “TITP” visas (ISA, 2024). The demographic data of migrant workers in Japan can be presented as follows.

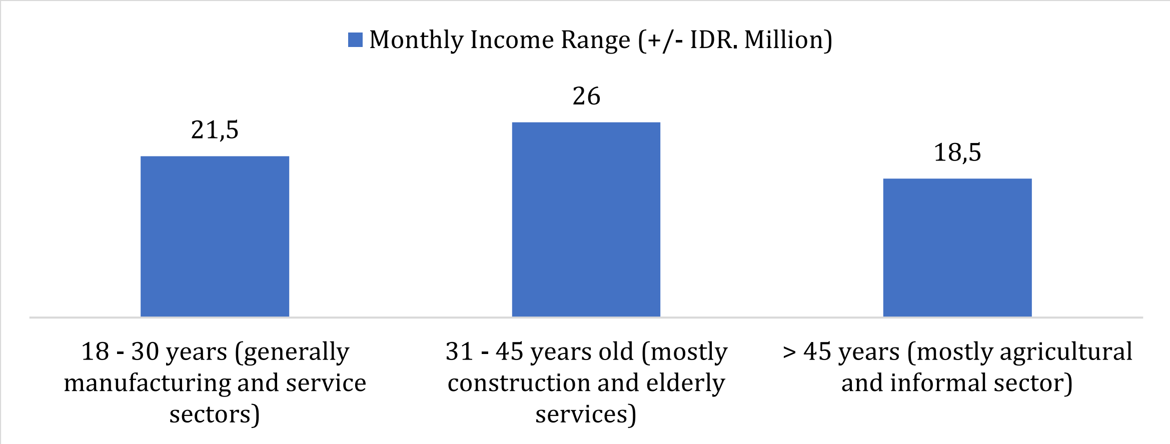


Figure 2. Age and Monthly Income Range of Indonesian Migrant Workers in Japan
Source: Kementrian Pelindungan Pekerja Migran Indonesia (2025)

Based on the above data, the highest average income range is for migrant workers aged 31–45 years who generally work in the construction and elderly services sectors, with an average monthly income range of +/- IDR 26 million per month. This income profile suggests that PMI in Japan possess sufficient financial capacity to engage with digital payment systems, making targeted community engagement efforts particularly strategic. With the expansion of QRIS to Japan, migrant workers have the potential to bring benefits to Indonesia for transactions made by migrant workers in Japan. Proportionally, the number of migrant workers in Japan in the age range of 18-30 years is 52%, the range of 31-45 years is 35%, and above 45 years is 13%. The dominance of the younger age group (18–30 years) is particularly promising, as this demographic tends to be more receptive to digital financial interaction and more likely to adopt new payment technologies when adequate community-based socialization is provided.

Thus, it can be projected using three scenarios to identify the potential economic benefits that can be enjoyed by Indonesia with the expansion of QRIS in Japan through migrant workers. Several basic assumptions, namely, the number of migrant workers who use QRIS, the average transaction volume per month, the average value per transaction, and the Rupiah exchange rate against the Japanese Yen, can be used to project the potential foreign exchange from QRIS services in Japan. The following basic assumptions are used.

Table 1. Basic assumptions for foreign exchange calculation

Assumptions	Note
QRIS users = 200,000 (rounding assumption of 0.11% growth of Indonesian migrant workers in Japan)	• 35% from total • 50% from total • 80% from total
Number of Transactions (per month)	• 20
Transaction value (per month)	• Yen 3.500 (IDR 393.000)
QRIS Administration Fee	• 0.7%

Source: Author's Simulation (2025); Bank Indonesia (2025); ASPI (2025)

Based on the above assumptions, Indonesia's foreign exchange per year can be projected as follows.

Tabel 2. Simulation of Potential Foreign Exchange from QRIS Services for Indonesian Migrant Workers in Japan

Component	Scenario A	Scenario B	Scenario C
	35%	50%	80%
Annual Transaction Volume	IDR 16,800,000	IDR 24,000,000	IDR 38,400,000
Annual Transaction Value (IDR)	IDR 6,602,400,000,000	IDR 9,432,000,000,000	IDR 15,091,200,000,000
QRIS Service Fee	IDR 46,216,800,000	IDR 66,024,000,000	IDR 105,638,400,000

Source: Author's Simulation (2025)

Based on the simulation results above, if 35% of Indonesian migrant workers in Japan use QRIS, the annual foreign exchange potential is IDR 46.22 billion per year. If 50% of QRIS is used, the potential foreign exchange reaches IDR 66,02 billion per year. If it is assumed that 80% of migrant workers use QRIS, the projected foreign exchange reaches IDR 105.64 billion per year. Of course, this value will be even greater if the assumption of Indonesians other than migrant workers are also included in this calculation, for example, the number of Indonesian tourists visiting Japan every year. The QRIS expansion's benefits to Japan can be catalyzed by the presence of migrant workers with this potential benefit.

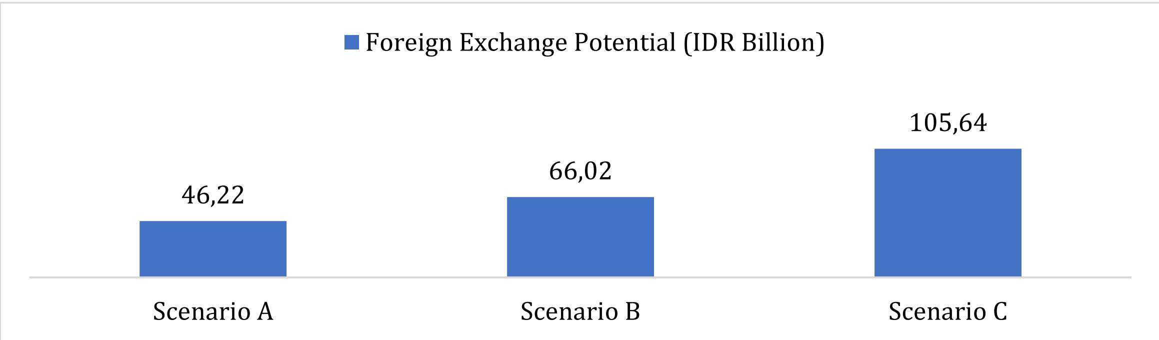


Figure. 3. Simulation of potential foreign exchange from QRIS services for Indonesian migrant workers in Japan

Source: Author's Simulation (2025)

Optimizing QRIS Through Community Engagement and Social Environment Approaches in Japan

The simulation results above show the potential benefits of using QRIS by migrant workers in Japan, and this potential can increase in the future as the number of users increases. However, several factors should be considered to increase the number of users and service quality. The first is the socialization and education of prospective migrant workers regarding the use of QRIS while working in Japan. There is even an opportunity to encourage regulations that require migrant workers in Japan to use QRIS. For the sustainability aspect of using QRIS in Japan, the government can optimize the role of the Indonesian Embassy (KBRI Tokyo and KJRI Osaka) in disseminating information on the use of QRIS for transactions to fulfill daily needs. The government can also encourage digital campaigns to introduce QRIS as an efficient cross-border payment solution. The second is to encourage

QRIS partnerships with local merchants in Japan, especially providers from Indonesia, for example restaurants, shops, and service providers.

An interesting strategy is to provide incentives for local merchants who partner with QRIS. The third is the optimization of remittances with more efficient costs so that users can prefer QRIS services for sending money to Indonesia. The government can encourage partnerships with Japanese financial technology companies to encourage the use of more massive QRIS. The fourth is adequate regulatory and infrastructure support, and the fifth is ensuring user data security in QRIS. High optimism will certainly be the fuel to encourage the independence of the Indonesian nation through QRIS. The rapid advancement of technology must be welcomed more proactively to improve the quality of QRIS services worldwide in the future, so that it can provide great benefits to all Indonesian Nations. Strengthening the supporting ecosystem is equally important to ensure the future sustainability of QRIS services so that QRIS can become one of the leading digital payment systems in the world.

High optimism will certainly be the fuel to encourage the independence of the Indonesian nation through QRIS. The rapid advancement of technology must be welcomed more proactively to improve the quality of QRIS services worldwide in the future, so that it can provide great benefits to all Indonesian Nations. Strengthening the supporting ecosystem is equally important to ensure the future sustainability of QRIS services so that QRIS can become one of the leading digital payment systems in the world. High optimism is the main trigger for accelerating Indonesia's independence through the QRIS system. The rapid development of technology demands a more proactive response from all parties so that the quality of QRIS services continues to improve, not only domestically but also globally. Thus, strengthening the supporting ecosystem is key for QRIS to survive and develop into a leading global digital payment system. The expansion of QRIS to overseas countries, such as Japan, requires mature technical interoperability. According to Bani Rachmad and Raharjo (2023), the successful expansion of QRIS in ASEAN shows that interoperability and synchronization between QRIS and QR Code systems of partner countries are one of the main prerequisites for expansion sustainability (Bani rachmad & Raharjo, 2023). The same thing was conveyed by Harnando Tanto et al. (2025), namely the harmonization of regulations and MoUs between central banks to become the legal and technical basis for cross-border use (Tanto et al., 2025).

In addition, Putri Metri (2024) highlighted the importance of technical support and education for diaspora merchants so that they are able to operate QRIS smoothly and efficiently and receive direct economic benefits (Putri Metri, 2024). This agrees with the findings of Chang et al. (2023) that merchants' technical readiness and perceptions of security and ease of use severely limit the adoption of digital payment technology. (Chang et al., 2023). From a macroperspective perspective, the expansion of QRIS agrees with Indonesia's digital diplomacy strategy. Eko Susanto et al. (2022) found that QR-based digital payments in Asia support the effect of increasing cross-border financial inclusion through ease of transactions, security, and user trust (Susanto et al., 2022). Pitri Yani (2025) argued that QRIS not only increases inclusion in the country but also strengthens the country's digital sovereignty by reducing the dominance of foreign payment institutions (Yani, 2025).

Furthermore, QRIS is positioned as a pioneer in digital economic diplomacy in regional schemes, such as the ASEAN QR Network. Research by Nada et al. (2021) demonstrated that QRIS successfully digitized MSMEs and provided a model for cross-border QR standardization. Furthermore, cross-border QRIS enables local currency payments through regional interoperability, reducing the need for dollars or other foreign currencies (Nada et al., 2021). Finally, security and trust are important foundations for QRIS expansion. Strong interoperability without user security protections can lead to a public trust recession. Security solutions, as recommended by Eko Susanto et al. (2022) and Pitri (2025), include data encryption, regular audits, and transaction protection guarantees. Overall, the QRIS expansion strategy to Japan (and other regions) should emphasize the following components:

1. Technical and regulatory interoperability of central banks, supported by clear MoUs and technical standards.
2. Education and training of merchants in the diaspora to increase adoption without technical barriers.
3. Harmonization of regulations and data security to ensure user protection.
4. Digital economic diplomacy through the ASEAN QR Network, which expands the use of QRIS to regional partner countries.
5. Continued local monetary integration, helping to make cross-border transactions more efficient and inclusive (Susanto et al., 2022; Yani, 2025).

With this multi-acquisition approach, QRIS will not only function as a transaction tool but also become a strategic instrument that represents the sovereignty and technological progress of the national digital economy. QRIS has the opportunity to become a symbol of globally competitive digital financial transformation, and Indonesia as the initiator.

CONCLUSION

In the past decade, Indonesia's financial sector has experienced rapid digital transformation. One of the most significant innovations in this development was the launch of the Quick Response Code Indonesian Standard (QRIS) by Bank Indonesia in 2019. QRIS was designed to integrate various payment service providers into a unified system that is accessible to the public. Through its ability to support fast, secure, and cost-efficient transactions, QRIS has become an important component in strengthening Indonesia's digital financial ecosystem and facilitating the country's integration into the global financial system. During the COVID-19 pandemic, QRIS played an important role in supporting digital-based economic activities, particularly among micro, small, and medium enterprises (MSMEs) and communities with limited access to formal banking services. Over the past four years, QRIS transaction volume and value have increased significantly. By 2024, QRIS transaction volume reached 6.2 billion transactions, with a total transaction value of IDR 659.9 trillion, demonstrating widespread public adoption (ASPI, 2025).

Building on these positive developments, Bank Indonesia has expanded the QRIS strategy toward international markets. One potential target group for this expansion is the Indonesian diaspora, particularly Indonesian Migrant Workers (Pekerja Migran Indonesia/PMI). Japan, as one of the main destination countries for PMI, represents a strategic location for QRIS internationalization. In addition to having more than 199,598 PMI, Japan is also an important economic partner in Indonesia's bilateral relations.

Indonesian migrant workers contribute not only through remittances but also as active economic actors within the host country. However, existing cross-border remittance systems continue to face several challenges, including high transaction costs, lengthy processing times, and limited digital financial literacy. QRIS has the potential to address these challenges by providing a more efficient and interoperable cross-border payment mechanism.

This study employed a mixed-methods approach to analyze the opportunities and challenges of QRIS implementation among PMI in Japan. Based on economic simulations, if 35% of PMI in Japan conducted 20 transactions per month with an average transaction value of ¥3,500 (±IDR 393,000), the potential foreign exchange contribution would reach IDR 46.22 billion annually. This potential would increase to IDR 105.64 billion if QRIS adoption reached 80% of the total PMI population. To optimize these opportunities, comprehensive strategies are required, including PMI education and socialization programs, cooperation with local merchants, harmonization of cross-border regulations, and strengthening of data security and digital payment infrastructure. Furthermore, competition between QRIS and global payment systems, such as Visa and Mastercard, highlights the importance of Indonesia's economic diplomacy and regulatory preparedness in addressing global digital payment challenges. If implemented through a structured and sustainable strategy, QRIS internationalization could provide economic benefits while strengthening Indonesia's position and sovereignty within the global digital economy.

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