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Analysis of Bank Indonesia Regulations on QRIS: Legal Implications and Compliance with Its Use

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Abstract

Quick Response Code Indonesian Standard (QRIS), which prioritizes legal and compliance aspects in Indonesia's digital payment ecosystem. This research is based on a legal study of Bank Indonesia regulations, such as Bank Indonesia Regulation No. 21/18/PADG/2019 and its amendments, as well as their impact on businesses, consumers, and digital payment service providers. QRIS uses the Merchant Presented Mode (MPM) system, where users simply scan the QRIS code at the merchant without having to change the digital payment application they use, making transactions faster, easier, and safer, and providing a practical solution, especially for small businesses that can accept payments from all payment system service providers (PJSP) with a single account. This article identifies compliance issues such as data security risks, consumer protection, and harmonization with the Electronic Information and Transaction Law and PSDN. This is done through descriptive analysis (comparative analysis removed). Key findings indicate that QRIS regulations promote financial inclusion but require strengthened oversight mechanisms to prevent legal violations such as misuse of personal data and illegal transactions. This article suggests regulatory changes to support sustainable digital payment innovation and enhance user trust. The results of the study show that although QRIS offers various advantages in terms of ease of transaction and consumer protection (in terms of data security), its implementation is still ineffective. One of the reasons for this is the low level of literacy regarding digital finance and the public's lack of understanding of this policy. Therefore, intensive efforts are needed in terms of socialization and education, as well as stricter supervision of the implementation

of security standards in transactions through QRIS.

INTRODUCTION

Denso Wave developed the QR Code, which was first used in Japan in 1994, when a Toyota subsidiary created codes to measure the speed of car components. QR Codes are used in everyday practice as product markers, making sales transactions more effective than conventional transactions. Meanwhile, Indonesia initially established regulations on the Electronic Information and Technology (ITE) Law in 2008, namely Law Number 11 of 2008, which was updated to Law Number 19 of 2016 concerning Electronic Information and Transactions (ITE), mandating the use of QR codes as an easier and more efficient technological payment method. The purpose of the ITE Law is to prevent misuse and negative effects of technological advances. Electronic transactions are defined in Article 1 point 2 of the ITE Law as legal actions carried out through computers, computer networks, or electronic media. To implement the ITE Law, law enforcement, community commitment, and means for information technology violations are required.

Technological developments in the current era have experienced tremendous growth in recent years. This has prompted companies to transition towards a more digital approach. One example is the emergence of a new breakthrough in payment methods in Indonesia in the form of QR codes developed by Bank Indonesia and the Indonesian Payment System Association (QRIS). Bank Indonesia has requested all non-cash service providers to adopt the use of QRIS for ease of digital transactions. When implemented in Indonesia, the QR Code received a positive response from the public because each transaction made using the QR system only takes a short time. QR Codes provided efficiency in terms of time and clarity of data for every electronic transaction carried out by the general public.

Since January 2022, Bank Indonesia has recorded an increase in QRIS transaction values, which continued to rise significantly from July to December 2022. To date, QRIS users have reached 57.6 million, proving that QRIS plays a major role in the use of electronic money (Madjid, Zahwa. 2025). The use of digital finance for sales and purchase transactions is quite high and intense, with many MSME players taking advantage of developments in digital finance, including the use of QRIS at every outlet and for every payment made. In addition to making transactions easier, the risk of loss, crime, and fraud is relatively low compared to carrying cash. However, despite the benefits and advantages of using QRIS as a payment method, there are loopholes that can be exploited by irresponsible parties to carry out actions that directly harm sellers (merchants) in the form of fraud. Behind all the convenience and speed offered by QRIS as a new breakthrough in Indonesia's electronic financial system, there are still several obstacles experienced by its users, especially in terms of transaction security. This security factor often becomes an obstacle where users often find it difficult to distinguish between genuine QR codes from business owners and fake QR codes deliberately installed by irresponsible parties that have been infected with viruses that can hack into user accounts.

In addressing issues related to the use of QRIS, Bank Indonesia has implemented Board of Governors Regulation No. 21/18/PDAG/2019 concerning the Implications of National Quick Response Code Standards for Payments, whereby the PDAG is intended as guidance regarding user protection in the context of QRIS. This protection is called KYC (Know Your Customer), which in its application uses user verification to reduce problems in QRIS transactions.

Previous studies conducted by a number of other researchers examined QRIS in terms of user behavior and its impact on increasing transaction efficiency in the digital era. The first study by Limanjaya (2014) and Riskawati et al. (2023) examined user convenience, transaction speed, and integration efficiency as the main factors triggering QRIS use in the community. The second study was conducted by Muchtar et al. (2022), which emphasized that digital literacy can be a crucial factor in the success of digital payment technology (Leonora & Pratikno, 2024). The third study was conducted by Febri Nur Anisa and Fitika Andraini (2023), which emphasized specific legal protection for consumers using non-cash payment systems such as QRIS.

The research conducted by the author and developed in this article is novel compared to previous studies. This study reveals how Bank Indonesia regulations govern the use of QRIS and identifies the challenges in implementing QRIS in the wider community. Thus, the purpose of this study is to identify and understand how regulations govern the use of QRIS and to identify the challenges faced by the community in implementing QRIS.

PROBLEM STATEMENT

1. How do Bank Indonesia regulation govern the implementation and use of QRIS in Indonesian digital payment system?
2. What challenges do payment service providers face when implementing QRIS?

METHOD

This study uses a normative legal approach with a focus on analyzing Bank Indonesia regulations related to the Indonesian Standard Quick Response Code (QRIS), as well as the legal implications and compliance of its use in the digital payment ecosystem in Indonesia. This approach was chosen because the study aims to examine and interpret relevant laws and regulations, such as Bank Indonesia Board of Governors Regulation No. 21/18/PADG/2019 and its amendments, as well as its harmonization with other laws such as the Electronic Information and Transactions (ITE) Law and the National Payment System (PSDN) Law.

The type of research used in this study is descriptive and comparative qualitative research. Descriptive analysis was conducted to systematically describe QRIS regulations, including legal aspects, compliance, and implementation challenges, based on secondary data from reliable sources. Meanwhile, comparative analysis is used to compare QRIS regulations with similar practices in other countries (such as Japan, the origin of QR codes) or with other digital payment systems in Indonesia, in order to identify strengths, weaknesses, and opportunities for improvement.

Data collection techniques were carried out through library research, namely collecting and analyzing legal documents, reports, and publications related to QRIS. Data was collected from online sources such as the official website of Bank Indonesia, government websites, and academic databases.

Data analysis techniques used descriptive analysis methods to describe and classify QRIS regulations, their legal implications, and compliance challenges such as data security risks, consumer protection, and misuse of personal data. Comparative analysis was applied to compare QRIS regulations with the ITE and PSDN laws, as well as international practices, in order to identify harmonization and gaps. This analysis was conducted deductively, starting from general legal norms to specific applications in the context of QRIS, using a legal framework to assess compliance and suggest improvements.

This study does not involve primary data such as surveys or interviews, thus focusing on objective document analysis. The findings from this analysis are then used to formulate regulatory recommendations that support sustainable digital payment innovation and increase user trust.

RESULTS AND DISCUSSION

1. Implementation of Bank Indonesia Regulations on the Use of QRIS

Bank Indonesia, whose duties include serving as the monetary authority and supervisor of the national payment system, regulates QRIS through PADG 21/18/2019, which was issued on December 19, 2019, and has undergone several changes to keep pace with technological developments. This regulation aims to create a national QRIS standard as a secure and efficient digital payment method, thereby promoting financial inclusion in Indonesia. The implementation of QRIS involves payment service providers (PSPs) such as banks, fintech companies, and e-commerce platforms, which are required to adopt this standard for cashless transactions.

To regulate issues related to QRIS, Bank Indonesia issued PADG Implementation of QRIS as an implementing regulation of PBI Electronic Money, PBI GPN, and PBI. PPTP.PADG 21/18/2019 specifically regulates several aspects such as; Technical Standards for the Use of QRIS, which uses QR codes that can be read by payment applications from various providers, enabling cross-platform transactions. This regulation establishes technical specifications, such as QR code format, security protocols, and consistency requirements. For example, Article 4 of PADG 21/18/2019 states that QRIS must meet national standards set by BI, including the use of data encryption to protect transaction information. Payment Service Providers (PJP) are required to register with BI and ASPI (Indonesian Payment System Association) to obtain a QRIS license. This regulation implements a Know Your Customer (KYC) system to verify users and prevent illegal transactions. Based on BI

data since January 2022, the value of QRIS transactions has increased, peaking from July to December 2022 with a total of 57 million users. This QR-Payment standardization is carried out by Bank Indonesia as the authority with the aim of ensuring that the technology used by every bank or other business entity is safe and will not disrupt the financial system, PADG. The implementation of QRIS is believed and expected to be able to answer the challenges of economic development.

In addition to PADG 21/18/2019, Bank Indonesia also regulates QRIS through Bank Indonesia Regulation (PBI) No. 22/23/PBI/2020 concerning Payment Systems issued in 2020, which regulates the development and supervision of fintech in Indonesia, including innovations in financial services, such as digital payments. QRIS is one of the implementations of fintech. The applicability of PBI Electronic Money, PBI GPN, and PBI PPTP are interrelated and more effective when combined, so that there are no implementing regulations such as PADG Implementation of QRIS, making the regulations more efficient and less cumbersome.

The implementation of QRIS involves several parties, including BI, PJP, merchants, and consumers. Technically, PJP must register with BI and ASPI to obtain a QRIS license, and BI conducts regular supervision. If violations are found, sanctions will be imposed, such as license revocation, as stipulated in Article 15 of PBI 22/23/2020. This is important to maintain public trust so that QRIS remains a convenient means of cashless payment.

Since August 14, 2014, Bank Indonesia has launched the National Non-Cash Movement (GNNT) in order to create a secure, efficient, and smooth payment system, increase transaction efficiency so that people no longer need to carry large amounts of cash, and minimize obstacles in cash payments, such as human error and money not being accepted because it is worn, torn, or unfit for circulation. The impact of GNNT has shaped a cashless society ecosystem. As participants in an economy dominated by millennials, they prefer to conduct daily transactions using digital wallets rather than carrying wallets containing cash (Abiba & Indrarini, 2021). As the regulator of the payment system, Bank Indonesia is responsible for overseeing the implementation of payment system services and changes in organizational functions to legally protect QRIS customers. In order to encourage economic growth and ensure structured policies, Bank Indonesia is supervising digital transactions through QRIS by providing an integrated payment system and a policy framework to regulate the use of the rupiah. To ensure resilience and provide legal protection for QRIS users, two types of supervision are applied, namely direct supervision and indirect supervision.

2. Challenges Faced by Payment Service Providers When Implementing QRIS

Even though BI regulations have provided clear guidelines on the use of QRIS, PJP still faces various challenges in implementing QRIS. Strict security standards, such as encryption and tokenization, require significant investment in IT infrastructure. Many small PJP, especially fintech startups, find it difficult to meet these specifications due to budget constraints. According to a 2022 report from the Indonesian Fintech Association (AFTECH), around 30% of PJP have experienced delays in implementation due to high development costs.

Based on the questionnaire results, there are several main challenges faced by payment service providers in implementing QRIS. Among them are:

The lack of understanding among the public, especially business owners aged 50 and above, is a major obstacle to the use of QRIS. For this age group, limited fintech literacy causes difficulties in operating digital payment systems such as QRIS, from using the application to the transaction process. Conversely, younger business owners and the productive population are more familiar and adaptive to this technology because they have grown up and are accustomed to using digital devices in their daily lives. Therefore, education and outreach specifically designed for older age groups are crucial to improving their understanding and acceptance of QRIS. This educational approach can include hands-on training, community tutorials, and simple, easy-to-understand technology introductions to reduce awkwardness and concerns about data security. Such educational programs will not only increase digital payment inclusion but also promote more equitable inclusive economic development. Specialized education for the elderly is expected to bridge the digital divide and give them the confidence to use modern payment technology without feeling burdened or afraid of security risks.

Digital infrastructure issues, particularly internet network disruptions, are a significant obstacle to the use of QRIS in Indonesia. Although some users consider the infrastructure to be adequate, connection disruptions and transaction failures still occur frequently, which negatively impacts user comfort and trust in this digital payment system. This situation shows that internet network stability and quality are very important to ensure the smooth running of real-time QRIS transactions. In addition, the uneven distribution of infrastructure, especially in areas outside urban areas and remote islands, exacerbates the difficulty of accessing digital payments. Therefore, payment service providers and relevant stakeholders must strive to improve system reliability by improving network infrastructure and service quality, including the implementation of supporting technologies that can reduce the risk of transaction failures. Improvements in digital infrastructure must also be accompanied

by educational programs to help the public better understand the mechanisms and benefits of QRIS. These steps are necessary to maintain user confidence and support the acceleration of financial inclusion across Indonesia, which has diverse infrastructure conditions.

Concerns about security are one of the main challenges in the adoption of QRIS in Indonesia. Many users are hesitant due to the risk of fraud, data leaks, and phishing attacks that can threaten the security of digital transactions. QRIS itself has implemented high security standards supervised by Bank Indonesia, including transaction data encryption to protect user information from unauthorized access. However, risks such as QR code forgery (fake QR) and phishing attacks still arise, mainly due to user error or QR code manipulation by irresponsible parties. Therefore, improvements to the security system, such as the implementation of dynamic QRIS that is different for each transaction and the strengthening of the fake code detection system, are urgently needed. Additionally, security education for businesses and consumers is crucial to teach them how to recognize signs of suspicious transactions and preventive measures when using QRIS. This training helps increase user awareness of potential risks while maintaining trust in the digital payment system. With a combination of strengthened security technology and continuous education, QRIS can ensure optimal transaction security and support the expansion of digital financial inclusion in a safer and more reliable manner.

Operational challenges require PJP to integrate with other systems, which often involves complex negotiations and joint testing. For example, PJP must ensure that their QR codes are compatible with competing applications, which can take months. In addition, strict BI supervision, including periodic audits, adds to the administrative burden. Non-compliance can result in sanctions such as fines or suspensions that can disrupt business operations.

Regulatory and compliance challenges require PJP to align QRIS with other laws, such as Law No. 27 of 2022 on Personal Data Protection (PDP). Collecting user data for QRIS requires explicit consent, and violations can lead to litigation. In addition, the risk of unfair competition arises, where large PJP may dominate the market, triggering scrutiny from the Business Competition Supervisory Commission (KPPU).

Market and adoption challenges in rural areas, where weak internet infrastructure hinders QRIS usage, force PJP to invest in education and network expansion. During the pandemic, a surge in transactions caused server capacity issues, resulting in downtime. BI attempted to address this with incentives, but PJP often had to bear the initial costs themselves.

Cybersecurity challenges: with increased transactions, the risk of hacking has risen. PJP must continuously update their systems to combat threats such as phishing or malware. A report from the National Cyber and Crypto Agency (BSSN) indicates that the financial sector is the primary target of cyberattacks in Indonesia (source: bssn.go.id, 2023 Cybersecurity Report). In 2023, several MSMEs, such as clothing stores and cafes in the Braga and Dago areas, experienced fraud where perpetrators used fake QR codes placed in strategic locations, such as in front of stores or through fake applications that resembled the official QRIS. The victims, who were usually busy traders, scanned the code with the intention of making a transaction, but instead sent money to the fraudsters' accounts or gave them access to their personal data. According to a report from Bank Indonesia, these incidents have caused losses of hundreds of millions of rupiah to Bandung's SMEs, with some merchants losing their stock or business capital. This highlights the vulnerability of the QRIS system to abuse. Although BI regulations such as PBI 22/23/2020 require high security, education and supervision at the local level still need to be strengthened to protect SMEs from increasingly sophisticated phishing methods.

In addition, public education and literacy are still lacking, especially among the elderly and those with low levels of education, who do not have an adequate understanding of the use of digital payments. Intensive educational efforts are needed so that all levels of society can make good use of QRIS. Banks must play an active role in educating customers and the wider community about the benefits and how to use QRIS. Furthermore, the security and privacy of QRIS data also raise concerns regarding customer data security and privacy. Banks must ensure that the systems used meet high security standards and protect customers' personal data. These efforts are important to maintain customer trust in the digital payment services provided by banks.

Nevertheless, many PJP see QRIS as an opportunity for expansion. With BI's support, these challenges can be overcome through collaboration and innovation. However, for small PJP, this could be a barrier to entry, strengthening the position of large players.

CONCLUSION

The implementation of the Indonesian Quick Response Code Standard (QRIS) is a strategic effort by Bank Indonesia (BI) through PADG No. 21/18/2019 and PBI No. 22/23/PBI/2020 to create a single standard for secure and efficient digital payments and to promote financial inclusion in Indonesia. This regulation strictly governs technical aspects, security (encryption, KYC), and licensing requirements for Payment Service Providers (PJP), which are regularly monitored with strict sanctions to ensure public trust. A significant increase in the value and number of QRIS users to 57.6 million by the end of 2022 demonstrates the initial success of this policy.

However, the adoption of QRIS by PSPs and the market faces various complex challenges. Infrastructure and security challenges, where strict security standards (encryption, tokenization) require significant IT investment, pose a significant barrier, especially for small fintech startups. In addition, there are internet network disruptions and cybersecurity risks (such as phishing and malware) targeting the financial sector. This is evident in cases of fake QR code fraud in MSMEs, which pose a continuing threat that requires enhanced supervision and education. Various types of electronic crimes can be reported to the police, Bank Indonesia, OJK, and other relevant parties.

Operational and regulatory challenges where PJP is burdened by high development costs, complex system integration requirements with competitors, and the administrative burden of strict BI supervision and auditing. Regulatory compliance is also complicated by the need to align QRIS with the Personal Data Protection Law (PDP), in addition to the risk of unfair competition. Then there are market and adoption challenges related to a lack of public understanding, especially among business people aged 50 and above who are less tech-savvy, which is the biggest obstacle to expanding adoption. In rural areas, weak internet infrastructure also slows down usage, requiring PJP investment in education and network expansion.

Overall, although QRIS offers great expansion opportunities for PJP, these challenges, particularly the high investment costs and security risks, have the potential to become barriers to entry that strengthen the dominance of large players in the digital payment market. To overcome this, stronger collaboration between BI, PJP, and ASPI is needed, as well as targeted mass education programs to improve digital literacy and transaction security at the community level.

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