

# Quick Response Code As A Game-Changer of Indonesian Digital Transactions

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**Abstract:** - The purpose of this study is to elaborate on the Quick Response Code Indonesia Standard (QRIS) and its significant impact on digital transactions in Indonesia are covered in this publication. The QRIS standard for QR codes is a cutting-edge and effective electronic payment solution. The purpose of this study is to assess QRIS adoption and its effects on digital transactions in Indonesia. We use a systematic review and bibliometric analysis to discuss QRIS in this work. We draw some significant conclusions about this topic's writers and literature from our investigation.

**Key-Words:** - QRIS, digital payment, digital innovation, Indonesia

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## 1 Introduction

QR Code payments have grown in popularity as cell phones have become popular which also invited more and more innovation in payment systems, [1]. Response Code in Rapid Using a QR Code, the Indonesian Standard (QRIS), often known as QRIS or frequently pronounced KRIS, unifies several varieties of QR from different Payment System Service Providers (PJSP). The development of QRIS by the payment system industry and Bank Indonesia aims to make transactions with QR Codes simpler, quicker, and more secure, [2]. QR code payments have several benefits over traditional payment systems, [3]. Aside from its convenience, and security, it also allows cashless transactions, which certainly lessens the risk of theft and fraud, [4].

Bank Indonesia explained that QRIS accommodates two different models of using QR Code Payments, namely Merchant Presented Mode (MPM) and Customer Presented Mode (CPM), [5]. However, the implementation refers to the QRIS standard set by Bank Indonesia as a national standard, [6]. Bank Indonesia also limits the amount of QRIS transactions to a maximum of IDR 10000000 (Ten Million Rupiah) per transaction, [7].

Although the first QR code was used in Indonesia around 2011-2012, Bank Indonesia declared it as an official payment tool in 2019, [8]. Since then, thousands of vendors have now convenient to use QR codes in providing customers

with convenient payments, [9]. Nowadays, QR codes are being used in stores across the country to allow customers to access product information, and QRIS are widely used in closing the payments, [10]. Various banks, e-wallet providers, and other payment platforms such as pay later and fintech apps also use this system, [1], [11]. For its versatility and ease of use, QRIS are now popular for business owners and consumers, [12].

Understanding the elements that impact consumer decision-making when it comes to purchasing products and services is a difficult issue. QR-code payments have grown in popularity around the world as a method to make cashless transactions easier and safer. Despite its broad use, some customers are still apprehensive about using this payment option. It is vital to understand the aspects that impact customer behavior toward QR-code payment to boost its adoption, [2], [12], [13].

Factors influencing consumer intention to adopt mobile payment services, include QR code payments. This study found that perceived usefulness, ease of use, perceived security, social influence, and trust in technology are significant predictors of consumer intention to adopt mobile payment services, [13].

Three significant characteristics influence customer behavior toward QR code payments in China: perceived utility, perceived simplicity of use, and perceived security, [14]. It was found that perceived utility, perceived ease of use, and

perceived harm are the most important elements influencing customer behavior towards QR code payments in Bangladesh, [15]. Furthermore, in Vietnam, five main factors influence consumer behavior toward QR code payments, namely perceived usefulness, perceived ease of use, perceived trust, perceived cost, and perceived social impact, [16]. In Bangladesh, it was found that perceived utility, perceived simplicity of use, perceived security, and social impact were the most important elements influencing customer behavior toward QR code payment, [17]. Convenience, security, and availability are factors affecting the adoption of QR code payments in Indonesia. Customers appreciate the convenience and quickness of QR code payments, as well as the security safeguards that safeguard their personal and financial information. Furthermore, the availability of QR code payment solutions at a variety of stores and businesses has enhanced their adoption rate, [18].

Enjoyment as a factor influencing QR code adoption highlights the importance of considering hedonic aspects (such as pleasure, fun, and enjoyment) when adopting the technology, [19]. This emphasizes the importance of technology that is not only functional but also comfortable to use, especially among the younger generation, such as students. Social influence implies that social variables such as peer pressure and social norms have a significant impact on technology adoption behavior. This supports the Social Influence Model (SIM), which argues that social factors can influence technology adoption behavior, [20]. Unfortunately, just a few empirical studies have been undertaken to better understand consumers' intentions to use mobile payments in emerging nations, [21]. As a result, there is still a research gap among Indonesian students to study specific mobile payment systems is insufficient to build generalizations of consumer behavior toward acceptance of mobile payments.

The Quick Response Code Indonesia Standard (QRIS) implementation of digital transactions is one of the "game changer" measures taken by the Bank of Indonesia to address this issue, and this study attempts to expound on it by conducting basic bibliometric analysis.

## 2 Literature Review

### 2.1 Financial Inclusion

Financial inclusion is an idea that arises from the concept of financial inclusion. Financial exclusion is

the process by which persons and socioeconomic groups are denied entry to the formal financial system, [22]. Financial inclusion is the process that makes sure all participants in the economy can easily access, avail themselves of, and profit from the established financial system. All initiatives aiming at lowering obstacles to financial services for people—both financial and nonfinancial—are referred to as financial inclusion, [23]. Inclusive finance is sometimes considered as a national policy to promote economic growth through several ways, including income distribution, poverty reduction, and financial system stability, [24]. It is an important aspect of economic development because it enables people to save, borrow, make payments, and manage risk. Financial inclusion also refers to the accessibility and use of financial services by individuals and businesses, especially those in underserved and marginalized populations, [25].

Mobile banking technology allows individuals who do not have access to formal financial institutions to store, transfer, and receive money using their cell phones, [25].

#### 2.1.1 Social Influence

Social influence is one of the significant factors influencing the adoption and recommendation of mobile wallet services, [26]. As a result, the social backdrop has a significant impact on views regarding the new system, [27]. In the Theory of Reason Action, social impact is comparable to the subjective norm, [28]. This social construct is made up of two fundamental and sequential factors that determine whether people are encouraged or discouraged from engaging in specific actions. Initially, customers form opinions based on the acceptance and responses of persons they consider to be references. The second criterion is the motivation of the person to behave in line with the intentions of their reference group. While complicated and vulnerable to various variables, social influence plays a crucial role in technological adoption. It has three mechanisms for influencing customer behavior: compliance, internalization, and identification, [25]. In the behavioral sciences, social influence has been recognized as an essential factor in people's decision-making process, [27]. Payment is typically made in a public or social setting where individuals may see the conduct of others and, as a result, may be affected by persons who are important to them, [28]. There is research in developing countries, especially Malaysia, that finds that social influence is a key factor in the adoption of mobile banking services. The study found that individuals are more likely to adopt

mobile banking if they feel that their peers use it and if they feel that it is socially acceptable, [29]. Social influence has a positive impact on mobile payments, [30]. According to the aforementioned literature review, social impact can influence mobile payment acceptance.

### 2.1.2 Habit

Habits consist of three elements: cues are triggers that initiate behavior, routines are behavior themselves, and rewards are positive outcomes that reinforce behavior, [31]. Habits in the use of technology are important for designing effective interventions and promoting positive behavior, [32]. Mobile services have become an integral part of people's daily lives. The widespread availability and adoption of smartphones and mobile devices have led to the development of a variety of mobile services that meet a variety of needs, including communication, entertainment, productivity, and outreach, [33]. Users of mobile technology services often unknowingly depend on them because of their convenience and ease of use, [34]. Habit is a significant predictor of continuous use of mobile phones for online services, [35]. Habits play an important role in mobile app use, with users developing automatic behaviors in response to environmental cues such as seeing app icons on their phones, [36]. Habit formation is an important factor in the continued use of mobile payment services, [37]. Technology usage habits play an important role in the adoption of mobile payments, and promoting positive technology habits, such as regular use of mobile services, can help increase user intentions to use mobile payments, [38]. Habit is a key factor in the adoption and use of mobile payments, including QR code payments, [1]. Customs plays an important role in the use of QR code payments in several countries. the more frequently consumers use QR code payments, the more likely they are to develop a habit of using them. The habit of using QR code payments is positively related to the intention to continue using it in the future, [39].

### 2.1.3 Innovativeness

Innovativeness is one of the three dimensions of consumer behavior, along with cognitive and affective orientations. Innovativeness has been widely studied in marketing and consumer research, as it is an important determinant of consumer adoption and diffusion of new products or technologies, [36]. Personal innovativeness in information technology is described as an individual's eagerness to try out any new

information technology, [37], [40]. Personal innovativeness in information technology refers to personal trait variables, individuals are generally more open to taking risks and comfortable with uncertainty, which makes them more likely to adopt and use new technologies. Individuals with high levels of personal innovation in technology innovation tend to have better attitudes and intentions in using new technologies, [40]. Personal innovation in information technology (PIIT) was an important factor in facilitating the early adoption of mobile payment services, [1].

### Behavioral Intention

Behavioral intention refers to a person's intentional plans or choices to engage in certain behaviors, [3]. Previous studies have shown that behavioral intention is driven by individual attitudes toward actual behavior and social norms, [41]. According to the Technology Acceptance Model (TAM), two major aspects impact customers' willingness to accept new technology: perceived utility and perceived ease of use. If customers find a new technology beneficial and simple to use, they are more likely to accept it and eventually become adopters, [14], [40]. Consumer intention to adopt mobile payment technology is a strong predictor of their actual adoption behavior, [40].

## 2.2 Quick Response Indonesian Standard Code (QRIS)

The payment industry is one of the many sectors of the digital economy where technological innovation is advancing. Among the inventions that surfaced and gained widespread usage is the QRIS. When used in the context of payment transactions, a QR Code is a set of codes that may be scanned with particular tools and contain data or information, the identification of the merchant or user, a nominal payment, and currency, [1]. The payment system industry worked with Bank Indonesia to produce QRIS. Thus, it is possible to make the QR Code transaction process easier, quicker, and safer. QR Code Payments need service providers to integrate QRIS, [2].

Currently, any merchant can use QRIS by simply opening an account or an account with one of the QRIS suppliers. From the user's perspective, QRIS offers numerous advantages, such as being faster and more up-to-date, eliminating the need to carry cash, and eliminating the need to worry about the QR e-wallet installation, [34]. On the other hand, it offers benefits to merchants such as staying current and improving branding, increasing sales because it can accept any QR-based payment, being more practical, lowering cash management costs,

facilitating reconciliation, avoiding counterfeit money, and eliminating the need to provide change, automatically recording all transactions, and developing credit profile information to facilitate future credit, [34].

### 2.3 Efficiency

The term efficiency refers to getting the most output from the fewest inputs or resources. Efficiency is frequently associated with "doing things right," which implies not wasting resources, [5]. Efficiency is the accuracy of the way (effort, work) in running something without wasting time, effort, and cost and should be regarded as a measure of the quality of work in technology, [41]

### 2.4 Economic Growth

Economic growth is a sustained improvement in a nation's capacity to supply its population with an expanding range of economic products. Technological ability is a factor that determines the ability to provide various kinds of goods to the population. Widespread and effective use of technology necessitates changes in the institutional and ideological realms so that the innovations produced may be used effectively, [3]. Long-term economic growth is driven by capital accumulation, population growth, and technological advances. Technological change is considered the most important factor in the process of economic growth. These changes relate to changes in production methods that are the result of innovation or the result of new research techniques.

## 3 Methodology

We search for the keywords 'QRIS', 'Digital Payment', and 'Financial Inclusion' using publish or perish software, [35]. However, in this study, no data analysis activities were carried out by grouping data according to variables and types of respondents. Even though no variable test was employed in this study, the outcomes were used to address and then to answer the formed problem, [3]. The bibliometric method is the employment of quantitative tools with bibliographic data. Many other scientific fields, including management, have adopted bibliometric research as a recognized topic of study, [10]. Researchers can now manage enormous amounts of bibliographical data without prejudice.

## 4 Result and Discussion

This study examines QRIS as 'A Game-Changer of Digital Transactions in Indonesia', and looked for publications about QRIS which were published between 2018 and 2023. The data shows that the QRIS research fluctuated but reached its highest rate in 2022 (Table 1).

Table 1. Number of Paper (2017-2023)

2018	0
2019	0
2020	4
2021	47
2022	93
2023	57
<b>Total</b>	<b>201</b>

The analysis aims to identify articles that have the most significant impact in the QRIS field for A Game-Changer of Digital Transactions in Indonesia. Table 2 displays the top 3 authors by paper title.

Table 2. Top authors

Author	Numbers of Paper	Paper Title
MF Silaen, S Manurung	2	The Effect of Using Indonesian Standard Quick Response Code (QRIS) on Increasing Sales to Merchants in Pamatangsiantar City
		Effect Analysis of Benefit Perception, Ease Perception, Security, and Risk Perception of Merchant Interest in Using Quick Response Indonesia Standard (QRIS)
OB Saputri	2	Consumer preferences in using the Indonesian Standard Quick Response Code (QRIS) as a digital payment tool
		SWOT Analysis Digital transformation of local government financial transactions in support of financial inclusion
A Sriekaningsih	2	Qris and the New Era of Payment Transactions 4.0
		Level of Public Understanding of the Use of the Indonesian Standard Quick Response Code (QRIS) in Tarakan City

Table 2 shows that there is one author who published the most articles (2 publications) in the 2020 -2023 period. Most of the citations were dominated by papers released in 2020, as shown in Table 3 for the top ranking of reference article titles from publication until the preparation of this paper.

Table 3. Top citations

Citation	First Author	Titles	Year	Journal
73	IWA Setiawan, LP Mahyuni	QRIS in the eyes of MSMEs: exploration of perceptions and intentions of MSMEs using QRIS	2020	Ekon E-Journal. and Business Univ. Udayana
61	OB Saputri	Consumer Preference in Using Quick Response Code Indonesia Standard (QRIS) as a Digital Payment Instrument	2020	FEB UnMul Journal Performance
40	ET Kurniawati, Izuhroh, N Malik	Literacy and education of non-cash payments through the QR Code Indonesian Standard (QRIS) application for the Millennial group	2021	Economic Innovation Case Study, Ejournal. ummm

The most quoted rankings are shown in the table above. Article in 2020 '*QRIS in the eyes of MSMEs: exploration of perceptions and intentions of MSMEs using QRIS*' is currently (in 2023) in the top position with 73 citations published by E-Journal Economy and Business Univ. Udayana. This article is also the most recent publication among the articles on the list.

## 5 Conclusion

The purpose of this study is to assess QRIS as a game of change in digital payments in Indonesia. QRIS has succeeded in increasing financial inclusion, transaction efficiency, and digital economic growth. It is hoped that QRIS will continue to grow and become a strong foundation for accelerating digital transformation in Indonesia. Experts and academics are encouraged to carry out a more formal study of Qris. By using bibliometric results, such as preferred keywords and choosing references based on authors, journals, and highest citations, researchers can gain deeper insights into the literature around Qris, digital payments, and financial inclusion. Using tools such as Publish or Perish inferences around these themes can contribute to topic development. We admit there is a limitation since we only focused on materials from

Google Scholar sources. In order to create more diverse bibliometric maps, it is advised that future research concentrate on more specialized and trustworthy sources like the Web of Science index or Scopus.

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#### Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

- Anggun Arikatus Sofwatunnisa and Mahir Pradana carried out the field survey, data analysis, and optimization.
- Budi Rustandi Kartawinata was responsible for the conceptualization and review.
- Aldi Akbar, Agus Maolana Hidayat, and Adrianza Putra were responsible for the field survey.

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The authors have no conflict of interest to declare.

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