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QRIS adoption, cashless transactions, and financial inclusion in Indonesia: a systematic literature review

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ABSTRACT

Purpose: to systematically review the existing literature on the QRIS in Indonesia by identifying the determinants of QRIS adoption, examining its impact on cashless transactions, and analyzing its contribution to financial inclusion.
Method: this study employed a PRISMA-based systematic literature review (SLR) of 120 articles published between 2022 and 2026. The selected studies were synthesized through descriptive and bibliometric analyses using VOSviewer.
Findings: QRIS adoption is influenced by perceived usefulness, perceived ease of use, trust, social influence, and financial literacy. Furthermore, QRIS contributes to increasing cashless transactions, improving transaction efficiency, supporting MSME digitalization, and expanding financial inclusion in Indonesia. Bibliometric analysis shows that QRIS research has evolved from technology acceptance studies to broader discussions of digital transformation and inclusive finance.
Implications: by integrating QRIS research findings and offering insights for policymakers, financial institutions, and digital payment providers to increase QRIS adoption, strengthen the cashless ecosystem, and promote financial inclusion in Indonesia.
Originality: this study makes a novel contribution by integrating evidence on QRIS adoption, cashless transactions, and financial inclusion into a single PRISMA-based systematic literature review, providing a comprehensive perspective largely absent from previous studies on the Indonesian context.

Introduction

The rapid advancement of digital technology has fundamentally transformed payment systems worldwide, shifting economic transactions from cash-based mechanisms toward digital and cashless payment ecosystems (Rui et al., 2023).

Financial technology (fintech) innovations have enabled consumers and businesses to perform transactions more efficiently, conveniently, and securely through various digital platforms (Kou & Lu, 2025). Among these innovations, quick response (QR) code-based payment systems have emerged as one of the most widely adopted digital payment methods because they simplify transactions and influence consumers' willingness to use digital financial services (Septiningrum et al., 2025). This transformation not only enhances payment efficiency but also supports the broader development of a cashless society, strengthens digital economic activities, and promotes financial inclusion. Accordingly, digital payment systems have become a strategic component in accelerating economic digitalization and improving access to formal financial services (Annan et al., 2024; Panetta et al., 2023).

In Indonesia, the development of digital payments has been accelerated through the implementation of the quick response code Indonesian standard (QRIS), introduced by Bank Indonesia as the national standard for QR-code-based payments. Since its implementation, QRIS has experienced remarkable growth, with more than 50 million registered users and over 30 million merchants adopting the system. Transaction volumes have also increased significantly, reflecting the growing public acceptance of QRIS as a preferred payment instrument (Fitriani et al., 2026). This rapid adoption is supported by QRIS's ability to integrate multiple payment service providers into a single standardized platform, thereby simplifying transactions for consumers and merchants while improving operational efficiency (Puspitasari & Salehudin, 2022). Beyond facilitating digital payments, QRIS has contributed to increased cashless transactions, improved MSME productivity and revenues, and expanded participation in the formal financial system, indicating its important role in strengthening financial inclusion in Indonesia (Natsir et al., 2023; Rafferty & Fajar, 2022; Sianturi & Darmastuti, 2025). Despite its rapid expansion, challenges remain, including uneven adoption across user groups, differences in digital literacy, trust and security concerns, and varying levels of technology acceptance, all of which continue to influence the sustainability of QRIS implementation (Pulungan et al., 2025).

Existing literature has extensively investigated QRIS and digital payment adoption from various perspectives. Many studies employ the technology acceptance model (TAM) and the unified theory of acceptance and use of technology (UTAUT) to explain users' behavioral intentions, emphasizing perceived usefulness, perceived ease of use, social influence, trust, facilitating conditions, and habit as important determinants of QRIS adoption (Adinda, 2022; Muchtar et al., 2024; Pangestu, 2022; Paramita & Cahyadi, 2024; Rahimi et al., 2024). Other studies examine the consequences of QRIS implementation, particularly its effects on transaction efficiency, MSME performance, digital payment adoption, and financial inclusion (Mahendra et al., 2024; Puspitasari & Salehudin, 2022; Rafferty & Fajar, 2022). At a broader level, recent systematic reviews have synthesized research on fintech adoption and digital payments (Firmansyah et al., 2022; Jain & Jain, 2024; Ramayanti et al., 2024), while bibliometric studies have mapped research trends in fintech and QRIS (Aysan & Nanaeva, 2022; Triwahyudi & Yuhertiana, 2024; Zou et al., 2023). However, these studies generally focus either on global digital payment adoption or on bibliometric mapping, rather than providing a comprehensive synthesis that specifically examines the interrelationships among QRIS adoption, cashless transactions, and financial inclusion in the Indonesian context. Furthermore, existing QRIS studies remain fragmented because they investigate adoption determinants, behavioral intentions, MSME outcomes, or financial inclusion in isolation, without integrating these findings into a unified conceptual understanding.

Consequently, there remains a significant research gap regarding how QRIS adoption contributes simultaneously to the transformation of cashless transactions and financial inclusion. This study addresses this gap by conducting a systematic literature review (SLR) using the PRISMA 2020 framework (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021), thereby offering a comprehensive synthesis of the existing body of knowledge and extending previous reviews that have not specifically integrated these three dimensions within the Indonesian setting.

This study aims to systematically review and synthesize the existing literature concerning QRIS in Indonesia. Specifically, the study seeks to identify the determinants influencing QRIS adoption, examine its impact on the growth of cashless transactions, and analyze its contribution to promoting financial inclusion. Furthermore, the review explores theoretical perspectives employed in previous studies, identifies dominant research themes, highlights methodological trends, and proposes future research directions. By adopting the PRISMA approach, this study ensures a transparent, rigorous, and replicable review process, enabling a comprehensive understanding of the current state of QRIS research.

The significance of this study lies in its ability to consolidate fragmented findings into an integrated body of knowledge explaining the relationships among QRIS adoption, cashless transaction development, and financial inclusion in Indonesia. The findings are expected to contribute theoretically by enriching the literature on digital payment systems, fintech adoption, and financial inclusion through a comprehensive synthesis of empirical evidence. From a practical perspective, this review provides valuable insights for policymakers, Bank Indonesia, payment service providers, fintech companies, and MSMEs in formulating strategies to accelerate QRIS adoption and strengthen Indonesia's digital payment ecosystem. In addition, the study offers a research agenda that can guide future empirical investigations, thereby contributing to the sustainable development of inclusive digital financial services and supporting Indonesia's transition toward a more digitally integrated economy.

Literature review

Systematic literature review

A systematic literature review (SLR) is a rigorous research methodology designed to systematically identify, critically evaluate, and synthesize existing empirical evidence to provide a comprehensive and unbiased understanding of a particular research topic (Mannarath, 2025). Unlike traditional narrative reviews, an SLR follows a structured, transparent, and replicable process that minimizes researcher bias and enhances the reliability and credibility of the review findings. To ensure methodological rigor, an SLR is commonly conducted using the preferred reporting items for systematic reviews and meta-analyses (PRISMA) framework, which provides standardized guidelines for the identification, screening, eligibility assessment, and inclusion of relevant studies. The PRISMA approach improves the transparency and reproducibility of the review process, enabling researchers to comprehensively map existing knowledge, identify research gaps, and generate evidence-based conclusions that can support both future research and policy development (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021).

Quick response code indonesian standard (QRIS)

The quick response Indonesian standard (QRIS) is Indonesia's national QR code payment standard, developed to integrate multiple digital payment platforms into a single interoperable system, thereby enabling seamless transactions among consumers, merchants, and payment service providers while promoting the adoption of cashless payments (Puspitasari & Salehudin, 2022). Multiple technological, organizational, and behavioral factors influence the widespread adoption of QRIS. From the perspective of micro, small, and medium enterprises (MSMEs), adoption is primarily driven by system compatibility, trust, and the perceived relative advantages gained through improved operational efficiency and business profitability (Rafferty & Fajar, 2022). Moreover, the growing appeal of digital payment technologies, together with the gradual decline in cash-based transactions, has further encouraged merchants to transition to QRIS-based payment systems (Fitriani et al., 2026). From the consumer perspective, social influence and facilitating conditions have been identified as significant determinants of behavioral intention to use QRIS, indicating that successful implementation depends not only on the technological capabilities of the system but also on supportive social environments and adequate digital infrastructure that encourage sustained usage (Muchtar et al., 2024).

Non-cash transactions

Non-cash transactions are payment activities conducted without physical currency, using digital payment instruments such as electronic wallets (e-wallets), mobile banking, and QR code-based payment systems, and represent a fundamental component of the ongoing transformation toward a modern digital payment ecosystem (Yasin et al., 2025). The expansion of cashless transactions has been driven by several factors, including supportive government policies, rapid technological advancement, and rising digital literacy, all of which encourage consumers and businesses to adopt digital payment methods (Septiningrum et al., 2025). Within this context, the implementation of the QRIS has accelerated the transition from cash-based to digital transactions by providing a standardized, interoperable, and efficient payment infrastructure that simplifies transactions across different payment service providers. Furthermore, the evolution of cashless payments has extended beyond domestic applications, as evidenced by the development of QR-based cross-border payment initiatives that enhance regional and international payment connectivity. Such developments strengthen the integration of digital financial ecosystems and support broader economic cooperation in the global digital economy (Sianturi & Darmastuti, 2025).

Digital payment system

A digital payment system is an electronic payment mechanism that enables financial transactions without physical cash, using digital instruments such as mobile payment applications, electronic wallets (e-wallets), internet and mobile banking, and QR code-based payment systems (Trianto et al., 2025). The rapid adoption of digital payment technologies has prompted extensive research to explain the factors influencing users' acceptance and continued usage of these systems. Among the theoretical frameworks, the TAM has become one of the most widely applied models for examining technology adoption behavior. According to TAM, users' behavioral intentions are primarily influenced by two key constructs: perceived usefulness and perceived ease of use. Consistent with this perspective, Rahimi et al. (2024) demonstrated that both perceived usefulness and perceived ease of use significantly influence users' intentions and actual behavior in adopting the QRIS, highlighting that the perceived benefits and simplicity of digital payment technologies are critical determinants of successful adoption of digital payment systems.

Financial inclusion

Financial inclusion refers to the condition in which individuals and businesses have broad, affordable, and equitable access to formal financial products and services that meet their financial needs (Danladi et al., 2023). In the era of digital finance, digital payment systems have become an important instrument for expanding financial inclusion by reducing transaction barriers and increasing access to formal financial services. Within this context, the QRIS contributes to financial inclusion by providing a standardized, interoperable, and user-friendly payment infrastructure that enables consumers and merchants, particularly micro, small, and medium enterprises (MSMEs), to participate more easily in the formal digital financial ecosystem. Although the adoption of digital payment systems in developing countries continues to face challenges related to infrastructure readiness, technological accessibility, and digital literacy, the implementation of QRIS has demonstrated considerable potential to expand financial service accessibility, promote digital financial participation, and support the broader transformation toward a more inclusive digital economy (Rafferty & Fajar, 2022).

Method

Types of research and research approaches

This study employs a qualitative research design using the SLR approach to comprehensively examine the existing body of knowledge on the adoption of the QRIS, cashless transactions, and financial inclusion in Indonesia. The SLR method was selected because it provides a rigorous, transparent, and replicable procedure for systematically identifying, evaluating, and synthesizing relevant empirical evidence, thereby enabling researchers to identify prevailing research trends, theoretical perspectives, methodological approaches, and existing research gaps within the digital payment literature (Jain & Jain, 2024). Furthermore, the SLR approach facilitates a comprehensive analysis of the factors influencing QRIS adoption and its implications across diverse research contexts, yielding a more holistic understanding of the evolution of digital payment systems (Ramayanti et al., 2024). To enhance the methodological rigor and credibility of the review, this study adopts the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines, which provide a standardized framework for the identification, screening, eligibility assessment, and inclusion of relevant studies. The integration of the SLR and PRISMA approaches ensures a transparent, systematic, and academically robust literature selection process, thereby improving the reliability, validity, and reproducibility of the review findings (Firmansyah et al., 2022; Page, McKenzie, et al., 2021; Page, Moher, et al., 2021).

Research questions

The research questions (RQs) serve as the foundation for the systematic literature review, defining the study's scope and guiding the processes of literature identification, selection, data extraction, and evidence synthesis. Clearly formulated research questions ensure that the review remains focused, transparent, and methodologically consistent throughout all stages of the review process. Accordingly, in line with the objectives of this study, a set of research questions was developed to systematically investigate the existing literature on QRIS adoption, cashless transactions, and financial inclusion in Indonesia. The research questions are presented in Table 1.

Table 1 Research Question

RQ code	Research question
RQ1	What are the dominant factors influencing the adoption of QRIS in digital payment systems based on 2022–2026 research?
RQ2	What is the pattern and impact of the use of QRIS on the increase in non-cash transactions based on the results of previous research?
RQ3	How does QRIS contribute to promoting financial inclusion in Indonesia based on the synthesis of scientific literature?

Literature search strategy

The literature search strategy was conducted systematically to obtain scientific articles relevant to research topics on QRIS, digital payments, non-cash transactions, technology adoption, and financial inclusion in Indonesia. Literature searches were conducted using the Publish or Perish (PoP) application, drawing on Google Scholar, Garuda, and the Directory of Open Access Journals (DOAJ) databases. The search process uses a combination of keywords compiled with the Boolean operator AND, namely "QRIS" AND "Digital Payment" AND "Cashless Transaction", "QRIS" AND "Financial Inclusion" AND "Indonesia", "Quick Response Code Indonesian Standard" AND "User Adoption", "QRIS" AND "Cashless Society" AND "Indonesia", "QRIS" AND "UMKM", as well as "QRIS" AND "Digital Payment" AND "Indonesia". To broaden the scope of the search, this study also used supporting keywords, such as "Mobile Payment", "E-Wallet", "Fintech", "Payment System", "Consumer Behavior", "Technology Acceptance Model (TAM)", "Unified Theory of Acceptance and Use of Technology (UTAUT)", "Adoption", "User Intention", and "Financial Inclusion".

Inclusion and exclusion criteria

The inclusion criteria for this study are research articles published between 2022 and 2026 that discuss QRIS in Indonesia, particularly those focusing on QRIS adoption, use, and impacts. The selected articles must be available in full-text, open-access formats, be written in either Indonesian or English, and provide a clearly described research methodology. Meanwhile, the exclusion criteria include articles published before 2022, review papers, opinion articles, and editorials; studies that do not examine QRIS in the Indonesian context or are not aligned with the research objectives; articles that are unavailable in full-text format; and studies with unclear or insufficiently explained research methods.

Literature selection process

The literature selection process in this study was conducted systematically using the PRISMA framework to ensure that the identification, screening, eligibility assessment, and inclusion of articles were performed transparently and in a structured manner. The literature search was conducted through the Publish or Perish (PoP), Garuda, and Directory of Open Access Journals (DOAJ) databases using predefined keywords relevant to the research objectives. The initial search process identified 191 articles, which were subsequently subjected to duplicate removal and preliminary screening based on titles and abstracts. The remaining articles were then assessed against the predetermined inclusion and exclusion criteria, followed by a full-text eligibility assessment to determine their suitability for further analysis. After completing all stages of the selection process, 120 articles were identified as eligible and were included in the final review and analysis. The detailed flow of the literature selection process is presented in Figure 1.

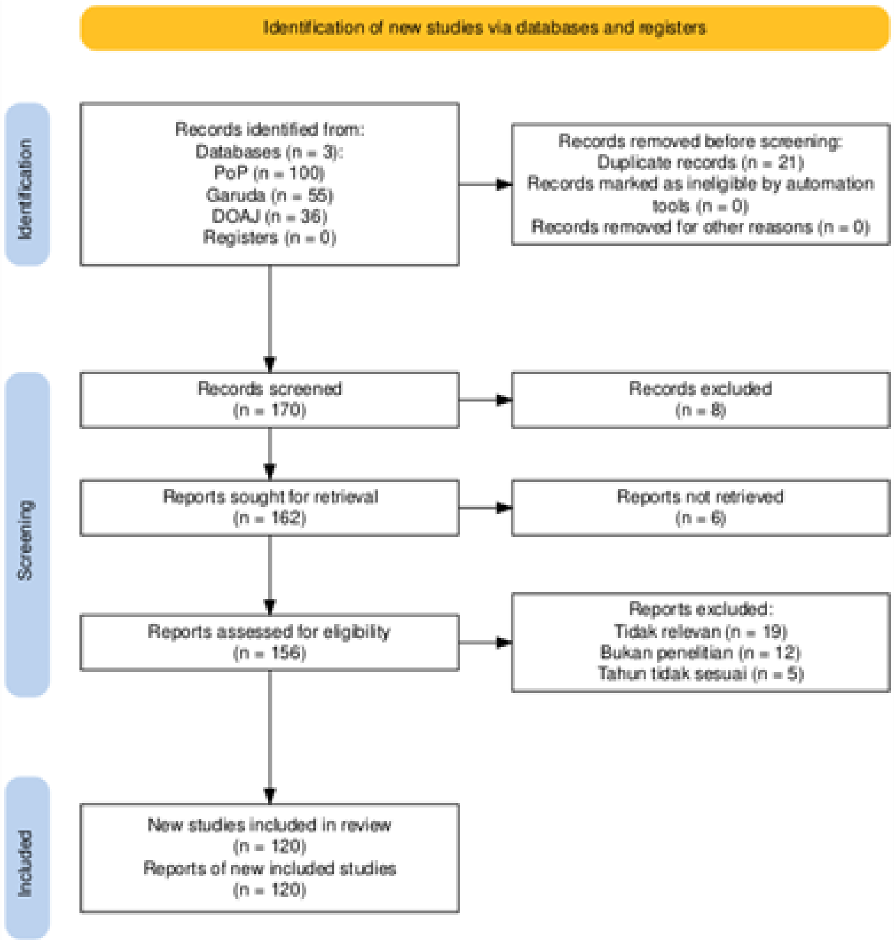

Figure 1 PRISMA diagram of the literature selection process

Data analysis techniques

The data analysis technique in this study employs a bibliometric approach, supported by VOSviewer software, to identify research patterns, emerging trends, and conceptual relationships in the literature on QRIS. The analysis was conducted using a keyword co-occurrence method to examine the connections among research variables and to identify the dominant themes and knowledge structures within the field of digital payment systems. Bibliometric analysis has been widely recognized as an effective approach for mapping research developments, exploring relationships among topics, and identifying the evolution of scientific knowledge in specific research areas (Aysan & Nanaeva, 2022; Panetta et al., 2023; Zou et al., 2023). The findings were visualized using network, density, and overlay visualizations to provide a comprehensive representation of research clusters, thematic patterns, and the development of QRIS-related studies over time. Through these visualizations, this study identifies key research themes, analyzes relationships among concepts, and provides a systematic overview of the development and direction of digital payment system research, particularly concerning QRIS adoption and implementation in Indonesia.

Results and discussion

Research overview

This study applies the SLR approach to examine the development of research on QRIS implementation in digital payment systems. The review focuses on identifying the factors influencing QRIS adoption, examining its impacts on economic activities, and analyzing its role in promoting financial inclusion in Indonesia. Through the SLR approach, this study systematically identifies, evaluates, and synthesizes relevant research findings to provide a comprehensive understanding of the current state of knowledge regarding QRIS and digital payment transformation. Based on the literature selection process, 120 scientific articles were identified as meeting the established inclusion criteria and deemed relevant for further analysis. The number of selected publications indicates that research on QRIS and digital payment systems has grown significantly in recent years. This growing research interest reflects the increasing academic attention to digital payment transformation, particularly the role of QRIS as a strategic instrument for accelerating cashless transactions, enhancing payment efficiency, and supporting broader financial inclusion in Indonesia.

These findings are consistent with the study by Ramayanti et al. (2024), which highlights that research on digital payments has grown rapidly, with increasing attention to the interaction between technological advancement and user behavioral factors. Similarly, Zou et al. (2023) demonstrated that digital finance research comprises several major thematic clusters, including technological innovation, financial inclusion, and user behavior, reflecting structured patterns and evolving research directions in the scientific literature. Therefore, this study not only identifies the quantity and characteristics of existing publications but also provides a systematic overview of the development, thematic focus, and research trends related to QRIS. These findings serve as an important foundation for understanding the current research landscape of QRIS and provide a basis for further analysis of emerging themes and future research directions in the subsequent sections.

Publication trends and research characteristics

Based on the results of the literature selection process, 120 scientific articles were analyzed to examine the development trends in QRIS-related research during the 2022–2026 period. The distribution of publications reveals a dynamic pattern, marked by a substantial increase in research output during the initial period, followed by stabilization and a subsequent decline. The detailed distribution of publications and their development trends are presented in Table 2 and Figure 2.

Table 2 distribution of articles by year

Year	Number of articles
2022	12
2023	36
2024	39
2025	27
2026	6

Source: secondary data, processed (2026)

Table 2 and Figure 2 illustrate the publication trends of QRIS-related research during the 2022–2026 period based on the 120 articles selected through the systematic literature review process. The distribution of publications indicates that research interest in QRIS has increased significantly since its initial period. In 2022, only 12 articles were identified, representing the early stage of academic attention toward QRIS as a digital payment innovation in Indonesia. The number of publications increased substantially in 2023, reaching 36 articles, indicating growing scholarly interest in examining various dimensions of QRIS, including adoption determinants, user behavior, digital payment transformation, and its implications for economic activities. The highest number of publications was recorded in 2024, with 39 articles, suggesting that QRIS research peaked during this period. This increase reflects the growing strategic importance of QRIS in supporting Indonesia's transition toward a cashless payment ecosystem and expanding digital financial participation among consumers and business actors, particularly micro, small, and medium enterprises (MSMEs). The increasing number of publications during this period may also be associated with the broader implementation of QRIS, improvements in digital payment infrastructure, and increasing public acceptance of digital financial services.

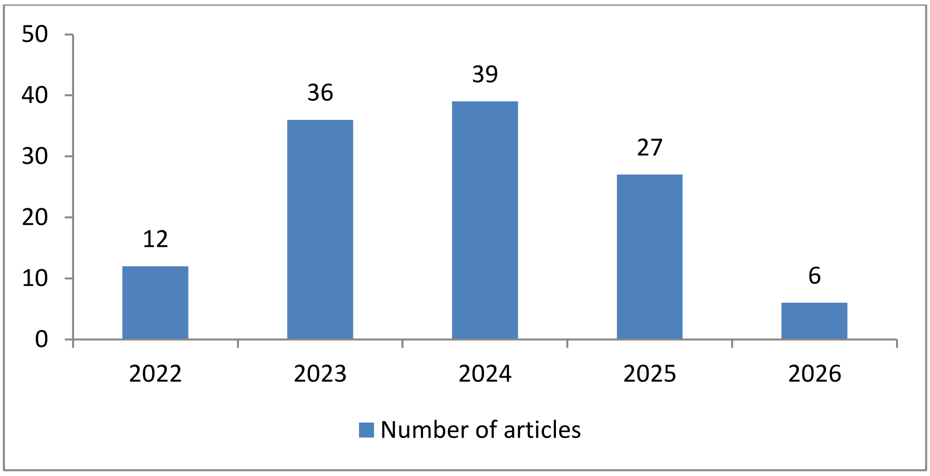

Figure 2 publication trends 2022–2026
Source: secondary data, processed (2026)

Following the peak in 2024, the number of publications decreased to 27 in 2025 and to 6 in 2026. The lower number of publications in 2026 should be interpreted with caution because the data collection period overlaps with the ongoing publication period, meaning that additional articles may still be published after the completion of this review. Therefore, the decline observed in 2026 does not necessarily indicate a reduction in academic interest or research activity related to QRIS, but may instead reflect the incomplete publication cycle and the time lag between research completion, manuscript submission, peer review, and publication. Overall, the publication trend demonstrates that QRIS has emerged as an important and continually evolving research topic, particularly regarding digital payment adoption, the transformation of cashless transactions, and financial inclusion in Indonesia. These findings highlight the evolution of QRIS research and offer opportunities for future studies to examine long-term adoption behavior, technological development, policy effectiveness, and the broader socioeconomic impacts of the transformation of digital payment systems. These findings are in line with Rafferty and Fajar (2022), who state that research on digital payments tends to grow rapidly in the early phases before entering the stabilization stage. In addition to publication trends, an analysis of research characteristics was conducted to examine the distribution of topics and methods used in the QRIS study.

Table 3 research characteristics

Category	N	Percentage (%)
Research topics		
QRIS and digital payments	78	65
Financial literacy and inclusion	24	20
MSME performance	12	10
Sharia banking and others	6	5
Research methods		
Descriptive/qualitative analysis	42	35
Quantitative (PLS/SEM/regression)	42	35
TAM/UTAUT	36	30

Source: secondary data, processed (2026)

The analysis in Table 3 shows that most publications examining QRIS were published in the most recent period, specifically between 2022 and 2026, reflecting growing academic interest in digital payment transformation in Indonesia. Based on thematic distribution, QRIS and digital payment systems were the dominant research themes, comprising 65% of the reviewed articles, followed by studies related to financial literacy and financial inclusion (20%) and MSME performance (10%). Regarding research methodology, qualitative/descriptive and quantitative approaches each accounted for 35% of the studies, while technology adoption models, specifically TAM and UTAUT, accounted for 30% of the methodological approaches used. The dominance of QRIS adoption and digital payment themes indicates that existing research still largely focuses on understanding technology acceptance, usage behavior, and factors influencing QRIS adoption. Meanwhile, empirical investigations into the broader economic impact of QRIS, particularly its contribution to the development of MSMEs and other economic sectors, remain relatively limited. This finding is consistent with Pangestu (2022), who emphasized that behavioral factors, including user perception and acceptance of technology, play an important role in determining the adoption of digital payment systems.

Research question mapping

This study addresses three main research questions (RQ1–RQ3) to systematically analyze the development of QRIS-related studies within the scientific literature. RQ1 examines the factors influencing QRIS adoption, RQ2 explores the impact of QRIS utilization on non-cash transactions, and RQ3 investigates the contribution of QRIS to promoting financial inclusion in Indonesia. The results of the literature synthesis reveal that the adoption and utilization of digital payment systems are primarily influenced by key factors such as perceived ease of use, perceived usefulness, and trust. Furthermore, the implementation of QRIS has made significant contributions to improving transaction efficiency, facilitating the adoption of cashless payments, and expanding access to formal financial services. These findings are supported by Mahendra et al. (2024), who found that QRIS adoption among MSME actors in Indonesia enhances transaction convenience, payment security, financial transparency, and business digitalization through the implementation of non-cash payment systems. Similarly, Sheng & Fauzi (2023) emphasized that perceived ease of use and trust are important determinants of digital payment adoption, while the utilization of digital payment technologies contributes to the growth of cashless transactions and broader financial inclusion. Based on these findings, the reviewed articles were categorized by research focus to identify the systematic distribution of themes and provide a comprehensive understanding of the development patterns in QRIS-related research.

Table 4 distribution of research focus based on research questions (RQ)

Aspects	Key findings	Number of articles
Impact	Non-cash transactions	44
Impact	Transaction efficiency	12
Inclusions	Financial access	24
Inclusions	Digitization of MSMEs	40

Source: secondary data, processed (2026)

The mapping results presented in Table 4 indicate that most existing studies focus on QRIS adoption, followed by investigations of its impact on cashless transactions and financial inclusion. This dominance suggests that current research remains largely focused on understanding the determinants of user acceptance, behavioral intention, and technology adoption processes, while studies examining the long-term economic, social, and financial impacts of QRIS are still developing and have not yet become a primary research focus. Overall, the distribution of research themes demonstrates that QRIS studies continue to expand, with technology adoption serving as the dominant research area, accompanied by increasing scholarly attention toward its broader implications for economic activities and financial inclusion. These findings highlight potential directions for future research, particularly studies that explore the long-term effects, implementation effectiveness, and sector-specific impacts of QRIS adoption across diverse economic contexts.

Analysis of QRIS financial adoption, impact, and inclusion factors

The discussion in this study focuses on the findings of the literature review on the implementation of the QRIS in Indonesia's digital payment system. The analysis aims to examine the factors influencing QRIS adoption, its impact on the development of cashless transactions, and its contribution to promoting financial inclusion. The results of the literature synthesis indicate that QRIS-related research extends beyond technological aspects, encompassing changes in user behavior, transformations in digital payment systems, and the expansion of access to financial services. These findings are consistent with Jain & Jain (2024), who highlighted that research on digital payments remains largely dominated by studies focusing on user behavior, perceived benefits, and technology acceptance.

Furthermore, Ramayanti et al. (2024) emphasized that digital payment research has gradually expanded from a primary focus on technology adoption to broader discussions of the social and economic impacts of digital payment use. Based on the distribution of research themes aligned with the research questions, QRIS adoption factors represent the most dominant area of investigation compared with studies examining the impact of QRIS on cashless transactions and financial inclusion. The mapping results in Table 5 show that 61 articles examine factors influencing QRIS adoption, 25 investigate its impact on cashless transactions, 15 discuss its role in financial inclusion, and 19 address multiple research dimensions simultaneously (overlap). This distribution demonstrates that existing QRIS studies remain primarily focused on understanding adoption behavior and technology acceptance, while broader investigations into the economic and social implications of QRIS implementation remain relatively limited.

Table 5 mapping research questions (RQ)

Research focus	Number of articles
QRIS adoption factors	61
Impact on non-cash transactions	25
Financial inclusion	15
Multi-topic (Overlap)	19

Source: secondary data, processed (2026)

The dominance of research on adoption indicates that the QRIS study remains largely focused on understanding the factors that influence the public's acceptance and use of digital payment technology. According to Sheng & Fauzi (2023), the development of digital payment systems is influenced not only by technological factors but also by changes in the social environment and in people's behavior when using digital financial services. The findings show that the implementation of QRIS is part of the transformation of the broader digital payments ecosystem. Based on the results of the literature synthesis, social influence factors are the most dominant factor in influencing the use of QRIS. The findings are supported by Paramita and Cahyadi's research, which shows that social influence, performance expectancy, effort expectancy, and perceived risk significantly influence the intention to use QRIS as a digital payment method (Paramita & Cahyadi, 2024). In addition, financial literacy, perceived ease of use (PEOU), trust, perceived usefulness (PU), and perceived risk factors are also found in studies related to QRIS adoption. These findings show that people's decisions to use QRIS are influenced not only by technological aspects but also by the social environment, financial literacy, and perceptions of the benefits and ease of use of digital payment systems.

This finding is in line with Hamzah Muchtar et al. (2024), who stated that social influence has a significant influence on the intention to use QRIS. In addition to social factors, Adinda (2022) shows that financial literacy affects the decision to use QRIS, especially in the younger generation who have a higher level of technological adaptation. Meanwhile, Rahimi et al. (2024) stated that perceived ease of use increases the intention to use QRIS, as users tend to choose payment systems that are practical and easy to use. In addition to the adoption factor, the literature synthesis shows that the implementation of QRIS has a significant impact on the development of non-cash transactions and financial inclusion in Indonesia. These findings are in line with research by Listiyono et al., who stated that implementing QRIS in MSMEs offers opportunities to improve transaction efficiency and access to financial services, although it still faces challenges related to digital literacy and technological infrastructure readiness (Paramita & Cahyadi, 2024). The increase in cashless transactions is the dominant finding, accompanied by a shift in people's behavior from cash to digital payments. The implementation of QRIS not only simplifies the payment process but also increases the efficiency and speed of transactions for consumers and merchants. The use of QRIS also contributes to increasing MSME productivity by digitizing payment processes and recording transactions more effectively (Natsir et al., 2023).

The use of QRIS also contributes to the digitization of MSMEs and the expansion of access to financial services. This finding is in line with Mahendra et al. (2024), who stated that the use of QRIS helps MSME actors improve transaction efficiency and ease of payment, and supports business adaptation to the development of the digital economy. QRIS also helps business actors to more easily connect with digital payment systems and formal financial services. On the other hand, the implementation of QRIS also encourages increased financial inclusion through expanding public access to digital financial services. The use of digital payments is considered to help people conduct transactions more conveniently, safely, and efficiently, thereby increasing the use of technology-based financial services. Overall, the results of the analysis show that the success of QRIS implementation is influenced not only by technology quality but also by social support, digital education, and changes in people's behavior towards non-cash transactions. These findings show that QRIS plays an important role in supporting the transformation of the digital payment system, the digitization of MSMEs, and the increase in financial inclusion in Indonesia.

Analytical bibliometrics (VOSviewer)

Bibliometric analysis in this study was conducted using the VOSviewer application to examine the relationships between keywords and research development patterns related to QRIS. This analysis is divided into three forms of visualization: network, density, and overlay. The three visualizations were used to identify relationships among research topics, keyword dominance levels, and QRIS research trends over time.

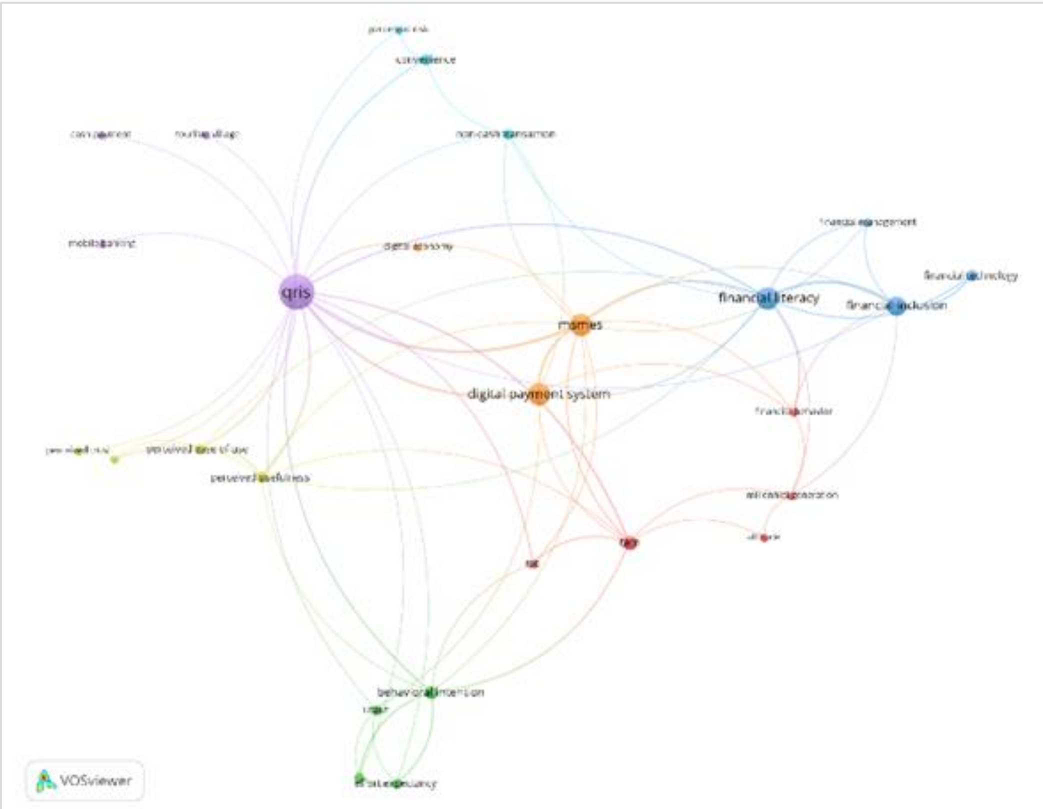

Figure 3 network visualization of QRIS research using VOSviewer
Source: secondary data, processed (2026)

Based on the network visualization results in Figure 3, the keyword "qris" is the central node with strong relationships to other research topics, including financial inclusion, financial literacy, MSMEs, digital payment systems, TAM, and behavioral intention. This shows that research on QRIS not only focuses on aspects of digital payment technology but also extends to user behavior, financial inclusion, and their influence on MSMEs. The visualization also indicates several interconnected research clusters. The red and green clusters are dominated by concepts from TAM and UTAUT, such as attitude, behavioral intention, effort expectancy, and perceived usefulness. This condition shows that most QRIS research remains oriented towards technology acceptance factors and users' intentions to use digital payment systems. Meanwhile, the blue cluster shows the link between QRIS and financial literacy and financial inclusion, which indicates that the use of QRIS is beginning to be studied in the context of expanding access to digital financial services.

In addition, the connection between the keywords MSMES, the digital payment system, and financial inclusion shows that the implementation of QRIS plays an important role in supporting the digital transformation of MSMEs. The close relationship among nodes also indicates that QRIS is a multidisciplinary topic, spanning technology, consumer behavior, and digital economy empowerment. These findings are in line with research indicating that QR code-based digital payments and digital financial technology contribute to increasing financial inclusion and to supporting the digital transformation of MSMEs through transaction efficiency and expanded access to digital financial services (Sha'ban et al., 2024). In addition to showing the relationships among keywords, bibliometric analysis also needs to examine the development of the research theme over time. For this reason, an overlay visualization was carried out using VOSviewer to identify research trends and shift the focus of QRIS studies from the initial period to more advanced research. Through this visualization, it is possible to know the topics that have been extensively researched and themes that are still developing in the scientific literature.

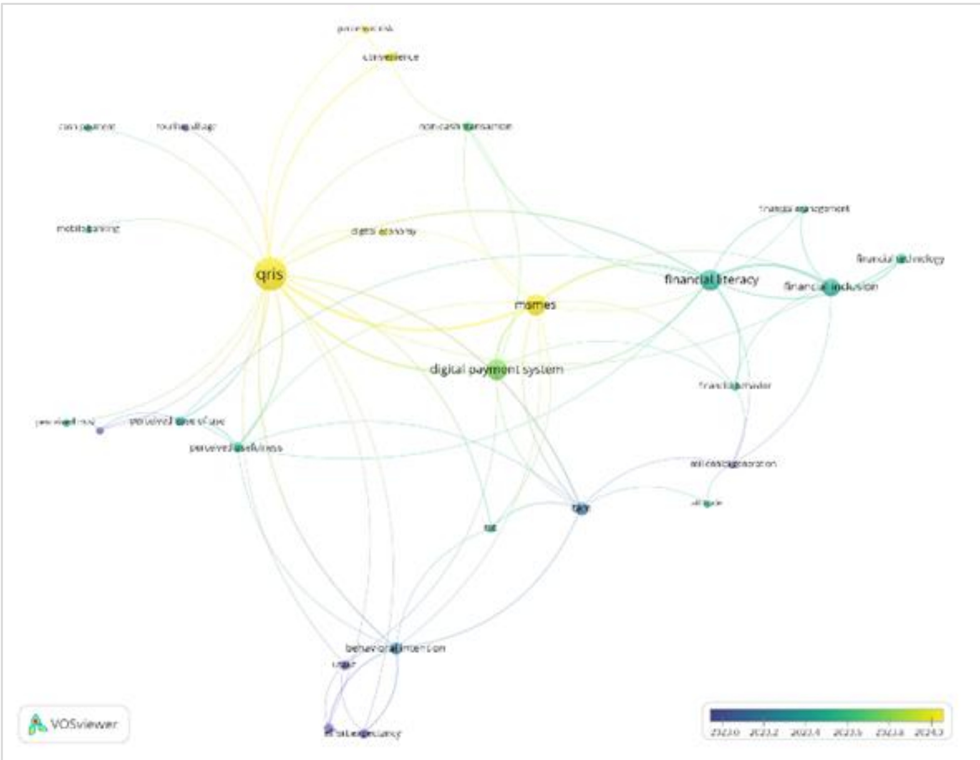

Figure 4 network visualization of QRIS research using VOSviewer
Source: secondary data, processed (2026)

Based on the overlay visualization in Figure 4 using VOSviewer, research on QRIS has shifted in focus over time. The visualization shows that some keywords, such as "QRIS", MSMEs, and digital payment systems, tend to be yellow, indicating that these topics are relatively new and widely studied in recent periods. This condition shows that research on QRIS continues to develop and is beginning to focus on digital transformation, non-cash payment systems, and their implementation in the MSME sector in the digital economy era. Based on the overlay visualization in VOSviewer, research on QRIS has shifted in focus over time. The visualization shows that some keywords, such as "QRIS", "MSMEs", and "digital payment system", tend to appear in yellow, indicating that these topics are relatively new and have been widely studied in recent periods.

In addition, keywords such as financial literacy, financial inclusion, and financial technology also show significant research developments. According to Annan et al. (2024), the development of digital payments contributes to expanding access to financial services and supports the transformation of the digital economy by increasing financial efficiency and inclusion. This indicates that research on QRIS not only focuses on digital payment systems but also advances efforts to increase financial literacy and expand access to digital financial services for the public and MSMEs. Meanwhile, some keywords, such as effort expectancy, behavioral intention, and TAM, tend to appear in darker colors. This indicates that topics related to technology acceptance and user behavior have been researched more than those related to digital transformation and financial inclusion. Thus, the latest research developments show a shift in focus from technology acceptance to the impact and implementation of QRIS in the digital economy ecosystem.

The results of the overlay visualization provide an overview of the development and shift in the focus of QRIS research over time. However, the visualization has not yet shown the degree of dominance or the frequency of occurrence of each keyword in the analyzed literature. Therefore, the next analysis was carried out using density visualization to identify the topics most researched and most frequently occurring in QRIS-related research.

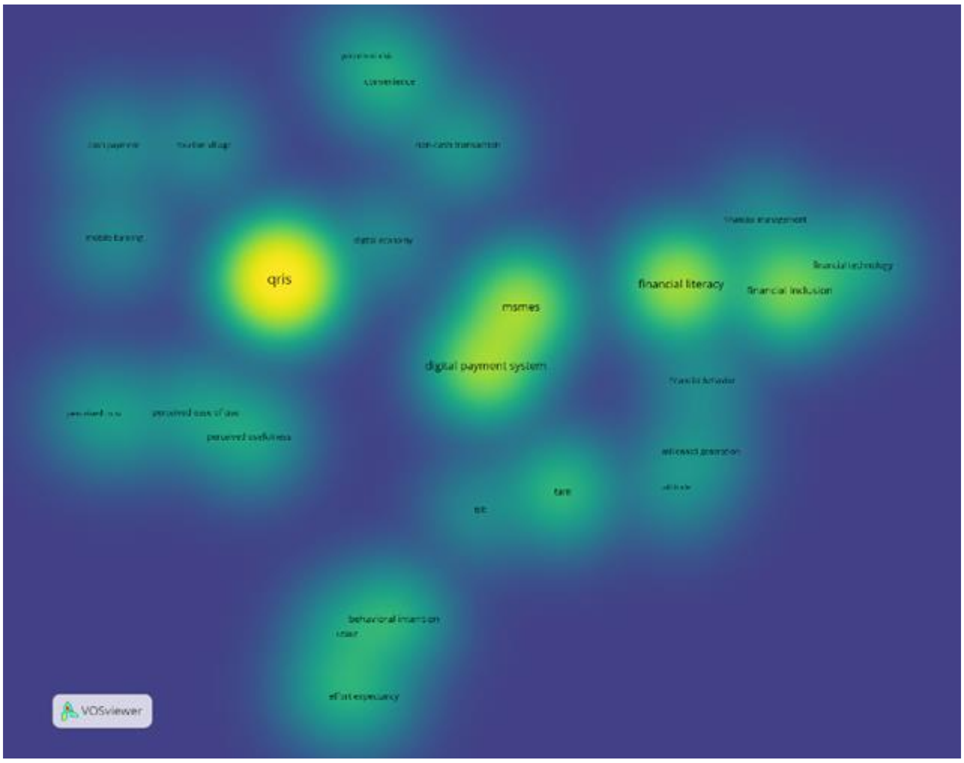

Figure 5 density visualization of QRIS research using VOSviewer
Source: secondary data, processed (2026)

Based on the density visualization in Figure 5, the keyword "QRIS" has the highest density, indicated by the bright yellow color. This shows that QRIS is the most dominant and most discussed topic in research related to digital payment systems. The high color intensity of the keyword indicates that research on QRIS is frequent and a central focus in the study of non-cash transactions. In addition, several other keywords such as MSMES, digital payment system, financial literacy, and financial inclusion also show a fairly high level of density. This condition indicates that research on QRIS is widely associated with the digital transformation of MSMEs and increasing people's financial literacy and inclusion. This relationship shows that the implementation of QRIS is not only seen as a payment technology innovation, but also as a supporting instrument for the development of the digital economy.

On the other hand, some keywords, such as perceived risk, tourism village, cash payment, and financial management, have lower keyword density. This shows that these topics are still relatively little researched, so they have the potential to become research gaps in QRIS-related studies. These findings indicate that future research can focus more on risk analysis of QRIS use, its implementation in the tourism sector, and its influence on the financial management of MSMEs. This is in line with research by Yamin & Abdalatif (2024), who showed that QR code-based digital payment systems play a role in driving digital payment transformation by increasing transaction ease, improving payment efficiency, and accelerating the adoption of technology-based financial services.

Conclusions

This study systematically reviewed the existing literature on QRIS using the PRISMA framework to synthesize current knowledge regarding its adoption, impact on cashless transactions, and contribution to financial inclusion in Indonesia. Based on the analysis of 120 selected articles published between 2022 and 2026, the findings indicate that research on QRIS has grown substantially, reflecting increasing academic attention toward digital payment transformation. The review reveals that QRIS adoption is primarily influenced by perceived usefulness, perceived ease of use, trust, social influence, facilitating conditions, and financial literacy, with the TAM and the UTAUT serving as the dominant theoretical frameworks. Furthermore, the synthesis demonstrates that QRIS has significantly accelerated cashless transactions by improving transaction efficiency, simplifying payment processes, supporting MSME digitalization, and expanding participation in the formal financial system. Bibliometric analysis further confirms that QRIS research has evolved from a primary focus on technology acceptance toward broader discussions concerning digital transformation, MSME development, and financial inclusion.

This review contributes to the literature by integrating fragmented empirical findings into a comprehensive conceptual understanding linking QRIS adoption, cashless transaction development, and financial inclusion in the Indonesian context. Unlike previous studies that primarily focused on isolated aspects such as user adoption, behavioral intention, or MSME performance, this study provides a holistic synthesis of these interconnected dimensions while identifying dominant research themes, methodological trends, and emerging knowledge structures through bibliometric analysis. From a practical perspective, the findings offer valuable insights for policymakers, Bank Indonesia, payment service providers, fintech companies, and MSMEs in designing strategies to strengthen digital payment adoption and promote a more inclusive digital financial ecosystem. Nevertheless, this study has several limitations. The review was limited to articles published between 2022 and 2026, focused exclusively on the Indonesian context, and included only open-access publications retrieved from selected databases. Consequently, relevant studies indexed in other international databases or published outside the specified period may not have been captured.

Future research should address these limitations by expanding the scope of the literature to include additional international databases, broader publication periods, and comparative studies across different countries to provide a more comprehensive understanding of QR-based payment systems. Further empirical investigations are also needed to examine the long-term socioeconomic impacts of QRIS adoption, particularly its influence on financial resilience, consumer welfare, digital financial inclusion among underserved populations, and sustainable MSME development. In addition, future studies may incorporate alternative theoretical perspectives beyond TAM and UTAUT, employ longitudinal or mixed-method research designs, and investigate emerging issues such as cybersecurity, digital trust, cross-border QR payment interoperability, and the integration of QRIS with broader financial technologies. These directions would enrich the existing literature and provide stronger evidence to support the sustainable development of Indonesia's digital payment ecosystem.

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