VOL. 12 , NO 1, 2024 (25-42)

JURNAL NATAPRAJA:

Kajian Ilmu Administrasi Negara

2406-9515 (p) / 2528-441X (e) https://journal.uny.ac.id/index.php/natapraja

Theoretical Framework of Cashless Payment Systems in Indonesia: Analyzing Condition in Different Era's

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ARTICLE INFO

Article history:
Received 20 November 2023
Received in revised form 27 April 2024
Accepted 01 May 2024

ABSTRACT

This study explores the influence of government policies and initiatives across different presidential eras in Indonesia on the development and adoption of cashless payment systems, with a particular focus on the implementation of QRIS (Quick Response Code Indonesian Standard). It examines how these policies, including digital literacy programs and regulatory frameworks, have shaped public perceptions and acceptance of digital payment solutions. The research also investigates the social, economic, and technological factors that contribute to the increasing acceptance of cashless payments and their impact on financial inclusion and economic behaviors. The findings indicate that government efforts, such as promoting QRIS and enhancing financial regulations, have significantly accelerated the transition from cash-based to digital transactions, especially during the COVID-19 pandemic. However, challenges remain, particularly concerning low digital financial literacy (around 25%) and security threats such as fraud and fake QR codes. Overall, the rapid growth in QRIS users—reaching over 48 million consumers and 32 million merchants as of 2024—demonstrates a positive trajectory toward Indonesia's goal of a more inclusive, efficient, and secure cashless economy. The study underscores the importance of continued policy support, public education, and technological innovations to overcome existing barriers and sustain the momentum of Indonesia's digital payment transformation.

Keyword:

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https://doi.org/10.21831/natapraja.v12i1.85298

QRIS, digital payment, cashless transactions, financial inclusion, Indonesia

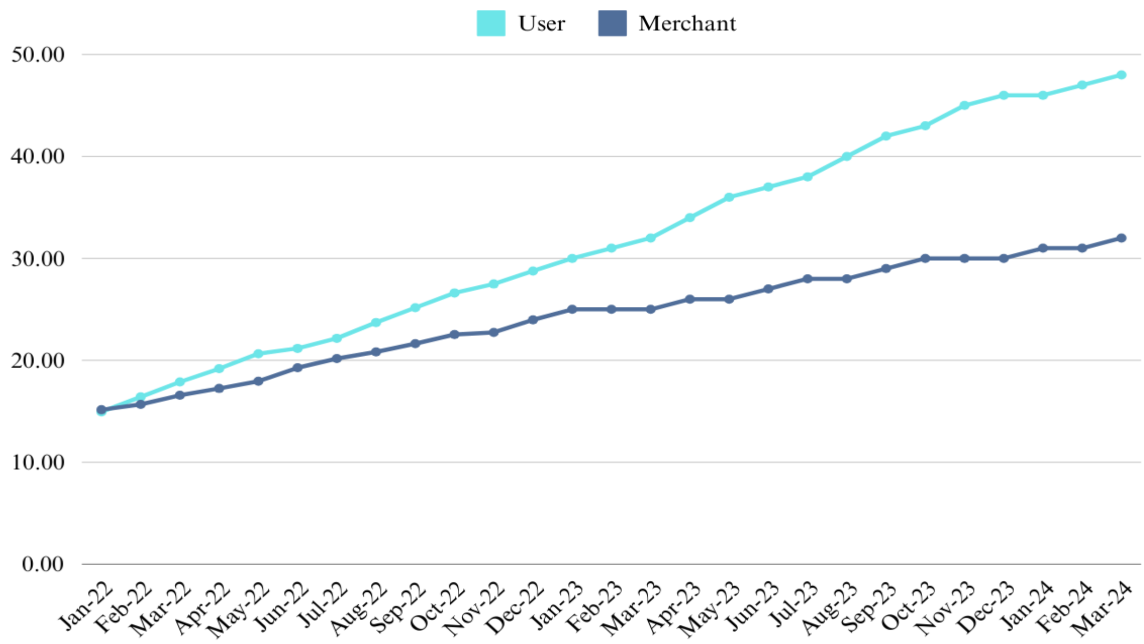
INTRODUCTION

Technological advancements have brought about significant changes in financial services. These changes have made the financial sector a pioneer in utilizing internet and technology to serve consumers (Alkhowaiter, 2020). The financial industry continuously enhances service innovation through the adoption of digital technology to make transactions easier. This adoption streamlines the entire transaction process, from registration and activation to transaction confirmation. Digital financial services encompass all types of transactions conducted via digital or electronic media, such as online payments, electronic wallets, and cryptocurrencies (Kajol et al., 2022). One rapidly growing digital financial system is online payments. Stakeholders, including the public, are encouraged to implement online payment methods. Therefore, it is necessary to improve infrastructure and support systems to ensure that digital payments are widely accepted by society. This reinforcement must go through several stages, including the creation of appropriate regulations, ensuring fairness, and providing effective oversight. These steps aim to achieve successful acceptance of online payments(Pazarbasioglu et al., 2020).

Online payment is a process of making transactions within an electronic network, allowing users to pay for products and services digitally (Tengeh & Gahapa Talom, 2020). This payment system has continued to grow over recent years, driven by internet-based banking and commerce. The growth is also due to its crucial role in modern electronic trade (Hassan et al., 2020). According to the Statista report, total transactions are projected to grow annually by 9.52% from 2024 to 2028, with the total value of online payment transactions expected to reach 16.69 trillion USD by 2028 (Statista, 2024).Various categories of online payment systems have been adopted worldwide, including e-cash, digital wallets, and card-based payments, among others (Hassan et al., 2020). One rapidly developing online payment system is the QR Code, which initially was used to provide information on specific websites. Today, QR codes have become a secure and convenient method of payment, increasingly accepted by the public for certain transactions. The use of QR codes for online payments has become widespread in Southeast Asia, America, and Europe, especially after the pandemic (Eren, 2024). In 2020, QR code payments reached a value of 2.21 trillion USD, and by 2025, it is predicted to grow to 2.71 trillion USD (Statista, 2024).

The Indonesian government continues to promote online payments through QR codes. The online payment system using QR codes in Indonesia has materialized through the innovation of QRIS (Quick Response Indonesian Standard). QRIS is a unified system combining various QR codes from different payment service providers, including banks and others. This innovation serves as an implementation of Indonesia's 2025 payment system vision to address interconnectivity issues. QRIS was established by Bank Indonesia in collaboration with ASPI (Indonesian Payment System Association). It aims to make financial transactions more efficient, secure, and fast (Puspitasari & Salehudin, 2022). A single QRIS code simplifies the process for product and service providers, eliminating the need for multiple different QR codes (Setiawan & Mahyuni, 2020)

Figure 1. Comparison of the number of users and merchants in QRIS



Source: (ASPI, 2024)

The figure above shows that the number of QRIS users in Indonesia has increased significantly, both among consumers (users) and merchants. As of March 2024, the total number of QRIS users reached 48 million consumers and 32 million merchants. QRIS usage has been adopted by all bank and non-bank operators. Currently, QRIS is used by a wider variety of users, including shops, stalls, tourist tickets, donations, and even parking payments (Puspitaningrum, Kusumastuti, & Rimbawati, 2023). The usage of QRIS is predicted to increase in the coming year compared to the previous year. Based on the positive public response to the QRIS innovation, the QRIS features will continue to be evaluated to facilitate additional services (Kumparan, 2024)

The number of QRIS users in Indonesia continues to grow in urban areas such as Jakarta, Bandung, Yogyakarta, and Surabaya. Bank Indonesia must be able to extend QRIS access to rural and remote regions. QRIS-based electronic money is expected to be accessible anywhere, not only in major cities but also in very remote areas (Santika et al., n.d.). An evaluation of QRIS usage is necessary as an effort to improve service quality for users, in line with the challenges posed by technological, informational, and communication developments. One of the challenges of QRIS implementation in Indonesia is the lack of public understanding related to low digital financial literacy; many economic actors are still comfortable using cash transactions. Additionally, security threats associated with QRIS, such as fraud, pose significant concerns that need to be addressed to ensure safe and reliable digital payments.

According to Firlie Ganinduto, Deputy Secretary General II of the Indonesian Fintech Association (Aftech), as quoted from Republika, the digital financial literacy rate among Indonesian society currently only reaches approximately 25 percent (Nurqamarani et al., 2024). This figure is significantly lower compared to the financial inclusion rate, which has reached 85 percent. Digital financial literacy refers to knowledge related to financial service activities, such as payment transaction methods that utilize technology in a digital manner. The low level of digital financial literacy among Indonesians regarding QRIS results in not all people utilizing QRIS appropriately, with many still preferring to conduct transactions using cash (Nurqamarani et al., 2024; Sebayang et al., 2023). Indonesian society still feels comfortable with cash transactions because they are considered easier and do not require electronic devices, which are perceived as inconvenient to use (Kumparan, 2024; Setiawan & Mahyuni, 2020). Although non-cash payment transactions continue to increase and cash transactions decrease, many people still prefer to conduct transactions in cash. Furthermore, non-cash transactions require knowledge of technology, information, and communication, which are essential prerequisites for users. Therefore, Bank Indonesia needs to promote and socialize the comfortable use of QRIS among the public (Nurqamarani et al., 2024; Puspitasari & Salehudin, 2022).

The research question aims to explore how the development of non-cash payments has actually progressed. This is important to examine because understanding these developments is crucial for supporting academic conditions and future research in the financial technology field. By assessing the current situation and challenges faced by non-cash transaction methods, this research can provide valuable insights to enhance the implementation and acceptance of digital payment systems in Indonesia.

Theoritical Debate

In the "Theoretical Debate" section, researcher will explore the various theoretical perspectives and frameworks that inform the understanding of digital payment systems in Indonesia, particularly focusing on payment methods. Additionally, we will examine the implications of government policies and regulatory frameworks that shape the cashless payment method landscape, highlighting the interplay between technology, consumer behavior, and institutional support in fostering a cashless economy in different presidential era.

Amartya Sen emphasizes the importance of social justice and economic inclusion in development (Demals & Hyard, 2014). QRIS is one of the innovative digital payment systems serve as vital tools to enhance financial accessibility for underserved populations, especially in remote areas(Ballet et al., 2018; Martins, 2018) . By providing easier and safer access to financial services, QRIS can empower marginalized communities to participate more actively in the economy, reducing income disparities. Implementing inclusive policies that prioritize equitable growth ensures that technological advancements benefit all sectors of society, fostering sustainable development (Demals & Hyard, 2014; Nurqamarani et al., 2024).

Muhammad Yunus highlights that economic empowerment can transform communities. Digital payment systems like QRIS create new opportunities for micro, small, and medium enterprises (MSMEs), allowing them to operate more efficiently and securely (Nurqamarani et al., 2024; Widhyastana & Rachmawati, 2022). This innovation enables small entrepreneurs to extend their reach, access credit, and participate in the formal economy, thus boosting local development. Yunus advocates for leveraging such financial innovations to eradicate poverty and strengthen social cohesion through broader economic participation. Joseph Stiglitz warns that technological advancements must be supported by fair and transparent regulatory frameworks (Stiglitz, 2012). To ensure the trustworthiness of systems like QRIS, governments need to implement effective regulations that protect consumers' data and prevent fraud. Appropriate oversight reinforces public confidence, which is crucial for widespread adoption. Balancing innovation with regulation creates a secure environment for digital payments, ensuring sustainability and preventing misuse that could undermine societal benefits.

Elinor Ostrom underscores the importance of community participation and local governance in managing shared resources (Ostrom, 2009). Successful implementation of QRIS depends on active engagement from local communities and stakeholders (Rayan Hamad Alkhaldi, 2024; Sebayang et al., 2023). When citizens are involved in shaping policies and practices, the system becomes more adaptable and resilient to local needs. Collaborative governance and participatory approaches ensure that digital payments serve the collective interest, fostering sustainable financial inclusion and community development.

Policy and Payment Method

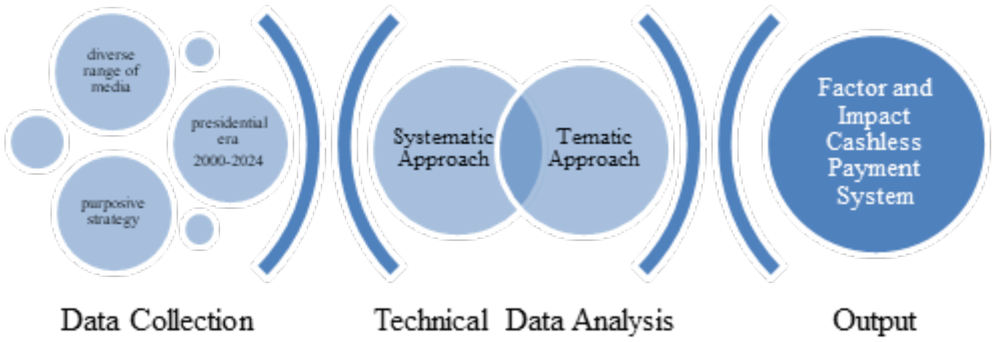
Public policy theory emphasizes that government policies play a vital role in the development and adoption of digital payment systems by establishing a regulatory framework that supports technological innovation and facilitates the transition of society from cash transactions to cashless alternatives. The policy cycle involves several stages, including agenda setting, formulation, implementation, and evaluation, which collectively ensure that policies are effectively designed and executed to meet the needs of the public.

The concept of policy encompasses not only clear regulations regarding the use of electronic money but also initiatives aimed at enhancing financial literacy among the population. This is essential for enabling individuals to understand and effectively utilize digital payment technologies. Additionally, the government is focused on building the necessary infrastructure, such as stable internet networks and accessible mobile devices, to ensure that all segments of society, including those in remote areas, can easily access digital payment services. The function of public policy not only as a regulatory mechanism but also as a primary driver in creating a safe, efficient, and inclusive payment ecosystem. This approach can stimulate economic growth and improve the overall quality of life for the community, demonstrating the significant impact of well-structured public policies on societal advancement.

METHODS

This study employs a qualitative research design utilizing content analysis to examine how media representations of presidential eras influence public perception and political discourse (Laffont & Tirole, 1990; Sriram et al., n.d.). Content analysis allows for a systematic examination of media texts, including news articles, broadcasts, and social media posts, to identify themes, narratives, and shifts in public sentiment over different presidential administrations(Molenveld, n.d.). The research is grounded in several theoretical frameworks, including Framing Theory, which posits that the presentation of information in the media influences audience interpretation of political events and figures, focusing on how different presidential eras are framed in media narratives. Additionally, Agenda-Setting Theory suggests that media shapes public priorities and perceptions by determining what issues are highlighted, rather than dictating what to think. Furthermore, Historical Contextualization emphasizes the importance of understanding the socio-political context of each presidential era, which is crucial for analysing media content and its impact on public perception.

Figure 2. Method of Research



Data collection for this research will involve several methods, starting with the selection of a diverse range of media sources, including newspapers, television news programs, online news platforms, and social media channels, to ensure a comprehensive view of public discourse across both traditional and digital media. A purposive strategy will be employed to select specific articles, broadcasts, and posts that discuss key events, policies, and public figures from different presidential eras, focusing on content that reflects significant political events, public reactions, and media framing. The time frame for each presidential era will be clearly defined to facilitate focused analysis, examining media content from the inauguration to the end of each presidency. For data analysis, a systematic approach will be adopted, beginning with the development of a coding scheme based on theoretical frameworks and research questions, with initial codes encompassing categories such as "media framing," "public sentiment," "policy focus," "controversies," and "historical context." Following the coding process, thematic analysis will be conducted to identify key themes and patterns within the data, grouping related codes into broader themes that encapsulate media representations and public perceptions during each presidential era. Comparative analysis will then be performed to understand how these media representations have evolved across different presidential administrations and how they reflect or shape public sentiment over time, culminating in the interpretation of findings within the context of the research questions and theoretical frameworks to provide insights into the relationship between media representations and public perceptions of presidential administrations.

RESULT AND DISCUSSIONS

The History of Payment System in Indonesia

The history of the payment system in Indonesia has undergone significant development in line with technological advancements and changing societal needs. Initially, the payment system in Indonesia was dominated by cash transactions using paper money and coins. This reliance on cash was primarily due to limited technological infrastructure and widespread access to banking services, especially in rural areas. As a result, most financial transactions were conducted physically, often in cash, which posed challenges in terms of security, speed, and efficiency (Nibras Nada Nailufar, 2020). As Indonesia's economy grew and urbanization accelerated, the demand for a more efficient and secure payment system began to emerge. The increasingly complex economic activities and the need for faster transaction processing prompted financial institutions and regulators to seek innovative solutions. This period saw the beginning of efforts to modernize the payment landscape, driven by the recognition that digital solutions could enhance the overall financial ecosystem and improve access to banking services (Erininda et al., n.d.; Nibras Nada Nailufar, 2020).

In the 2000s, particularly around the year 2000, Bank Indonesia started introducing various initiatives to encourage the use of cashless payment systems. One of the key developments during this period was the promotion of debit and credit cards, which provided consumers with more convenient options for transactions. These cards facilitated electronic payments, reducing the dependence on cash and enabling quicker, more secure transactions, especially in urban centers with better infrastructure. The adoption of card-based payments marked a significant milestone in Indonesia's payment history. This focus on the year 2000 is crucial as it marks a pivotal transition point where the Indonesian economy began to embrace digitalization more broadly. The shift was not only technological but also cultural, as consumers and businesses started to adapt to new modes of transactions. The government and financial institutions recognized the potential of digital payment systems to foster economic growth, increase financial inclusion, and align Indonesia with global financial trends. This period laid the groundwork for further innovations and advancements in the country's payment infrastructure. Following the early 2000s, Indonesia continued to develop its payment systems by introducing new technologies and innovations. Electronic banking, internet payments, and mobile banking services expanded rapidly, providing more options for consumers and merchants alike. These developments also coincided with efforts to improve regulations, build infrastructure, and educate the public regarding the benefits of electronic payments. As a result, digital financial services began to gain prominence, gradually transforming Indonesia's payment landscape.

The evolution towards cashless transactions culminated in the introduction of national standards for digital payments, such as QRIS, which serves as a unified QR code standard for transactions across the country. These innovations aim to further enhance the efficiency, security, and inclusivity of Indonesia's payment system. By continuously adapting to technological progress and societal expectations, Indonesia has been able to reshape its financial landscape, moving from predominantly cash-based transactions to a more digital and integrated financial ecosystem that aims to serve a broader segment of society. Indonesia's journey in developing its payment system reflects a dynamic process influenced by technological progress, economic developments, and societal demands. The shift from cash dominance to digital payments has improved transaction efficiency, security, and financial inclusion. Moving forward, ongoing innovation and effective regulation will be essential to ensure that Indonesia's payment infrastructure continues to evolve in alignment with global standards, providing broader access and fostering economic resilience.

Era of President Abdurrahman Wahid (Gus Dur) (1999-2001)

Abdurrahman Wahid, known as Gus Dur, is celebrated as the "Father of Pluralism" in Indonesia, with a presidency that emphasized the importance of social and political reforms alongside economic stability. His vision for economic reform and stability was particularly crucial following the 1997-1998 monetary crisis, as he aimed to strengthen the financial system and promote recovery. Recognizing the vital role of Micro, Small, and Medium

Enterprises (MSMEs) in the economy, Gus Dur implemented policies to support these businesses, facilitating access to financial services for small entrepreneurs to foster growth and reduce poverty. Additionally, he prioritized transparency and accountability in economic governance, seeking to combat corruption and build trust in financial institutions, which are essential for a reliable payment system.

Although Gus Dur's presidency did not introduce specific policies that directly transformed the payment system, his administration laid the groundwork for future reforms. By advocating for the rights of marginalized groups, he indirectly supported the need for inclusive financial services, which would later be crucial for the development of non-cash payment systems. His focus on improving the overall financial infrastructure set the stage for technological advancements in payment methods, even if such innovations became more pronounced in subsequent administrations. Gus Dur's commitment to cultural and religious pluralism also played a significant role in shaping the economic landscape. By fostering an environment where diverse economic practices could coexist, he reflected the multicultural nature of Indonesian society. This pluralistic approach encouraged the acceptance of various payment methods and financial innovations, paving the way for a more modern and diversified payment system in Indonesia. Ultimately, while the significant advancements in payment systems occurred after his presidency, Gus Dur's vision and policies created a foundational framework that facilitated these developments.

In the Gusdur era, many things happened to the payment system in Indonesia, for example (1) Economic Instability, even though Gus Dur tried to improve the financial system after the monetary crisis, economic instability was still a big challenge. High inflation and fluctuating exchange rates undermine public confidence in the financial system. One notable case of this instability was the persistent high inflation rates, which reached alarming levels during his administration. For instance, inflation soared to over 10% in 2000, eroding the purchasing power of the Indonesian people and creating uncertainty in the market. This economic environment made it difficult for consumers and businesses to plan for the future, leading to decreased consumer spending and investment. Additionally, fluctuating exchange rates posed another challenge to economic stability. The Indonesian rupiah experienced significant volatility, which was particularly evident in 1998 when the currency lost more than 80% of its value against the US dollar. Although some recovery occurred, the exchange rate remained unstable during Gus Dur's presidency, with frequent fluctuations that undermined public confidence in the financial system. This uncertainty made it challenging for businesses engaged in international trade, as they struggled to manage costs and pricing in an unpredictable currency environment. The combination of high inflation and unstable exchange rates contributed to a general lack of trust in the financial system, which Gus Dur sought to reform. Despite his administration's focus on transparency and accountability, the ongoing economic challenges hindered the effectiveness of these initiatives. As a result, many Indonesians remained sceptical about the financial institutions and the government's ability to stabilize the economy, which ultimately complicated efforts to promote financial inclusion and the adoption of new payment systems. This case illustrates the complexities of economic reform in a context marked by instability, highlighting the difficulties faced by Gus Dur's administration in restoring public confidence in the financial system.

(2) Corruption and Abuse of Power, where this era was also characterized by various corruption scandals involving government officials, which reduced public trust in financial institutions and the government. there were several allegations and controversies related to corruption, although he himself was not directly implicated in any major corruption scandals. However, his administration faced challenges with corruption involving various officials and political figures. One notable case was the alleged misuse of funds by the Indonesian National

Bank (Bank Indonesia) and other state-owned enterprises. Additionally, there were accusations against some members of his cabinet and political allies regarding corrupt practices. The most prominent figure associated with corruption during Gus Dur's presidency was the former Minister of Finance, Bambang Sudibyo, who faced scrutiny over financial irregularities. Gus Dur's administration also struggled with the broader issue of corruption in Indonesian politics, which was deeply rooted and pervasive. His efforts to combat corruption were often met with resistance from entrenched interests within the political system. Overall, while Gus Dur aimed to promote transparency and reform, the era was marked by ongoing challenges related to corruption at various levels of government.

(3) Lack of Payment Infrastructure to support non-cash payment systems is still very limited, so cash transactions remain dominant. Although Gus Dur sought to promote digitalization and financial inclusion, many areas, especially outside major cities like Jakarta, still relied on cash transactions due to a lack of access to adequate payment infrastructure. One factor contributing to the dominance of cash transactions is the limited banking network and financial services in rural areas. Many people in remote areas do not have access to banks or formal financial services, preventing them from utilizing cashless payment systems. For instance, in many villages, small traders and farmers still conduct transactions using cash because they lack access to digital payment tools such as debit cards or payment applications.

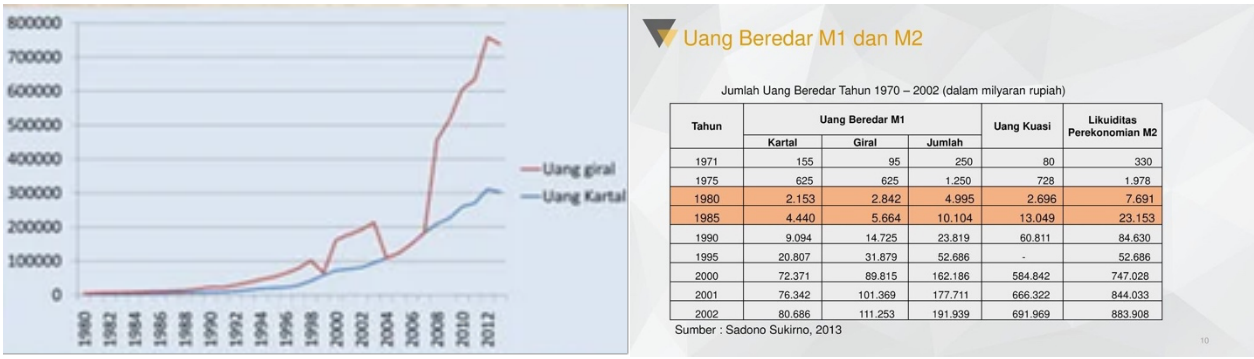
Figure 3. First ATM in Indonesia 90’s.

Source:(Bank Indonesia,2000)

Based on Figure 3. The image depicts the introduction of Indonesia’s very first ATM in the 1990s, marking a significant milestone in the country’s banking and financial service history. This ATM brought automation to cash withdrawal and banking transactions, transforming the manual process that was previously conducted solely through bank tellers. The presence of this machine helped improve the efficiency of banking services and made it easier for people to access cash anytime without needing to visit the bank physically, thereby accelerating transaction processes and expanding access to financial services. This ATM technology evolved into a fundamental foundation for modernizing Indonesia’s payment systems. While initially limited to cash withdrawals, it paved the way for further innovations such as electronic transactions, bill payments, and eventually integration with more advanced digital payment systems like QRIS and e-wallets. This image serves as a reminder of how the digital transformation in Indonesia’s banking sector began and how technological advancements have supported society's adaptation to the changing era, moving toward a more inclusive financial society.

In line with the introduction of the first ATM in Indonesia, its role has been crucial in accessing both cash (physical money) and non-cash (digital) funds. The ATM makes it easier for the public to withdraw cash directly from their accounts, allowing this physical money to be used for daily transactions. Additionally, ATMs support non-cash transactions such as transfers and balance inquiries, which make managing digital and electronic money more efficient and convenient. Therefore, the existence of ATMs serves as a key bridge in facilitating the transition from cash to non-cash payment systems within the national payment infrastructure. The currency in Indonesia can be divided into two main categories: currency in circulation (kartal) and girai money. Despite the push for cashless payment systems, cash transactions continue to dominate in many areas, particularly in regions with limited access to banking infrastructure and technology. Reports from Bank Indonesia indicate that cash remains the primary choice for many communities, especially those that lack the necessary technology and financial services to adopt electronic payment methods [4].

Figure 4. (a) (b) First ATM in Indonesia 90's.



Jumlah Uang Beredar Tahun 1970 – 2002 (dalam milyaran rupiah)

Tahun	Uang Beredar M1			Uang Kuasi	Likuiditas Perekonomian M2
	Kartal	Giral	Jumlah		
1971	155	95	250	80	330
1975	625	625	1.250	728	1.978
1980	2.153	2.842	4.995	2.696	7.691
1985	4.440	5.664	10.104	13.049	23.153
1990	9.094	14.725	23.819	60.811	84.630
1995	20.807	31.879	52.686	-	52.686
2000	72.371	89.815	162.186	584.842	747.028
2001	76.342	101.369	177.711	666.322	844.033
2002	80.686	111.253	191.939	691.969	883.908

Sumber : Sadono Sukirno, 2013

This reliance on cash highlights the challenges faced in transitioning to a more modern payment system. On the other hand, Girai Money refers to electronic money or digital currency that exists in the form of deposits in bank accounts and can be used for transactions through electronic means. The introduction of cashless payment systems, such as QRIS (Quick Response Code Indonesian Standard), aims to facilitate the use of girai money, promoting efficiency and security in transactions. However, as noted in the research by Nugraheni et al. (2021), the lack of adequate payment infrastructure remains a significant barrier to the widespread adoption of these systems, particularly in underdeveloped areas [6].

During the era of Gus Dur, while there was a vision to encourage the use of cashless payment systems, the existing infrastructure challenges hindered progress. The introduction of Automated Teller Machines (ATMs) in the late 1990s marked a significant step towards modernizing banking services, allowing customers to withdraw cash conveniently. However, the transition to a fully cashless society has been slow, as many people still prefer to use cash due to familiarity and the lack of access to digital payment options. In conjunction with these developments, Bank Indonesia implemented the Bank Indonesia Real Time Gross Settlement (BI-RTGS) system to enhance efficiency and security in interbank payment systems. This system allows for real-time and direct settlement of transactions, reducing credit risk and increasing liquidity in the financial market. While BI-RTGS offers advantages such as reduced transaction settlement time and increased transparency, it also faces challenges, including dependence on adequate technological infrastructure and potential high costs for smaller banks [6]. Additionally, technical and operational risks could disrupt the smooth processing of transactions, posing further challenges to the implementation of BI-RTGS.

Era of Megawati Soekarno Putri (2001-2004)

During Megawati's leadership, there were various policies to overcome the crisis in various fields, especially the economy. These policies aimed to maintain fiscal stabilization, restore the banking intermediation function, and improve the macroeconomy. Along with the development of information technology, the banking intermediation function was restored with the implementation of basic legal rules as the basis for the Indonesian payment system, including the Civil Code (KUHPerdata), the Commercial Code (KUHD), and Law No. 23 of 1999. Payment system instruments that previously used documents and were settled with local clearing (interregional) began to change to electronic-based instruments such as Real Time Gross Settlement (RTGS). Bank Indonesia implemented this system in late 2000 to improve reliability, speed, and certainty in sending and receiving funds [9].

Era of President Susilo Bambang Yudhoyono (SBY) (2004-2014)

Under SBY's leadership, the payment system began to experience more tangible modernization. SBY encouraged the use of technology in the payment system, including the development of debit and credit cards. In 2009, Bank Indonesia launched a program to promote electronic money and non-cash payment systems. This policy aimed to enhance transaction efficiency and reduce dependence on cash. Additionally, SBY supported the development of information technology infrastructure that underpins the payment system, such as ATM and POS (Point of Sale) networks.

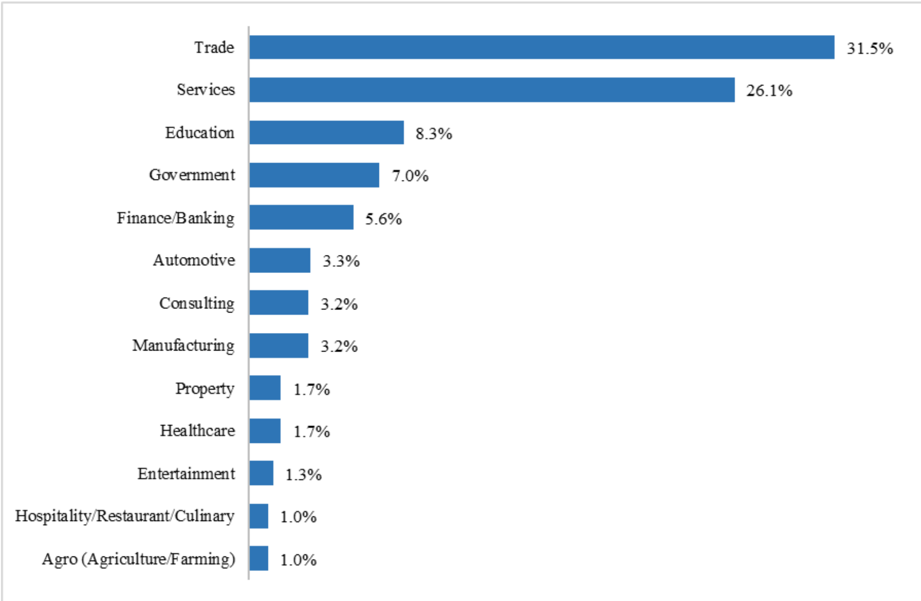
(1)SBY first era. SBY was elected as the President of Indonesia in the 2004 general election, becoming the first president to be directly elected by the people. This victory reflected the public's hope for change and improvement in governance, as well as the desire to address various challenges faced by Indonesia in the post-reform era. During his tenure, SBY focused on political and economic stability, supported by Vice President Jusuf Kalla. The election process was backed by various legislative regulations, including Law No. 12 of 2003 on General Elections, which governed the mechanism for the direct election of the president and vice president.

At the beginning of his leadership, SBY faced significant economic challenges, including high inflation and a budget deficit. To address these issues, he launched policy reforms aimed at stabilizing the economy and promoting growth. One important step was the implementation of Law No. 17 of 2003 on State Finance, which provided a legal framework for more transparent and accountable state financial management. SBY sought to create a conducive environment for investment and the development of economic sectors, with the hope of improving the welfare of the people. These measures reflected his commitment to improving economic conditions and having a positive impact on the populace. SBY's main focus also lay in infrastructure development and the modernization of the payment system. He prioritized the construction of roads, bridges, and other public facilities to enhance connectivity across Indonesia, while also supporting the implementation of Law No. 38 of 2004 on Roads. Additionally, SBY encouraged the use of technology in the payment system, such as debit and credit cards, as a step towards a more efficient payment system. Through various laws and policies, including Law No. 23 of 1999 on Bank Indonesia and Law No. 21 of 2011 on the Financial Services Authority (OJK), SBY aimed to modernize the payment system in Indonesia, improve transaction efficiency, and encourage the public to shift from cash transactions to cashless transactions.

(2) SBY the next era. During SBY second presidential term from 2009 to 2014, he continued to focus on various key issues that were critical for Indonesia's development. His administration aimed to build on the progress made during his first term, addressing both economic and social challenges while promoting stability and growth. One of the significant achievements during this period was the sustained economic growth that Indonesia experienced, even amid global economic uncertainties. SBY's government implemented policies aimed at enhancing economic resilience, including infrastructure development, investment in human capital, and efforts to improve the business climate. The administration also focused on poverty reduction and social welfare programs, aiming to improve the living standards of the Indonesian people.

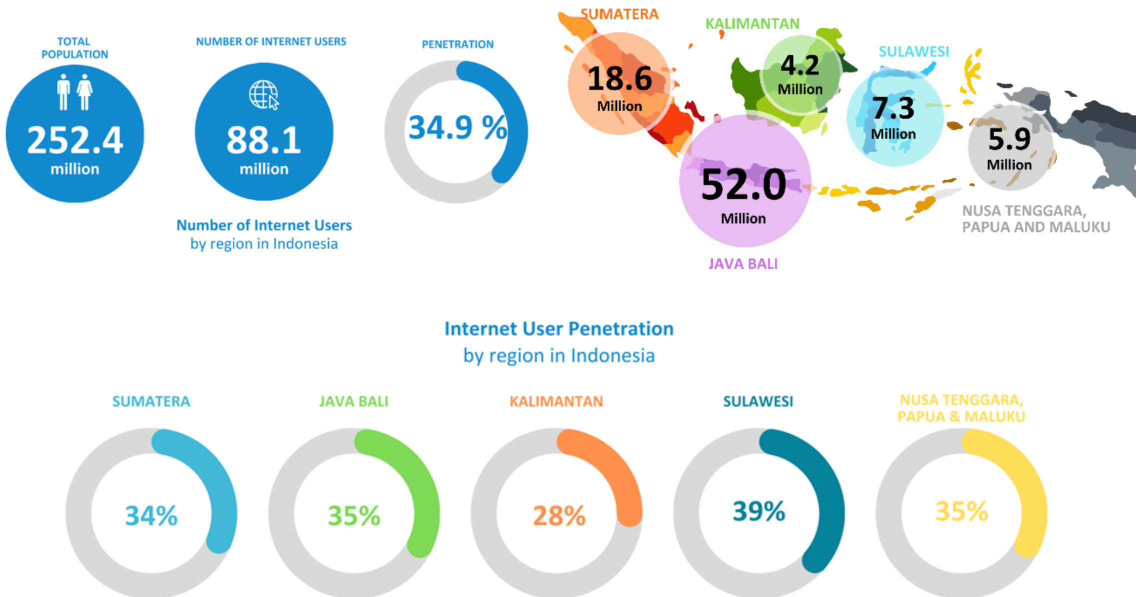
In terms of infrastructure, SBY prioritized the development of transportation networks, including roads, ports, and airports, to enhance connectivity and support economic activities across the archipelago. His government launched the National Medium-Term Development Plan (RPJMN) for 2010-2014, which outlined strategic priorities for infrastructure, education, health, and economic growth. SBY's second term also saw a continued emphasis on good governance and anti-corruption measures. His administration sought to strengthen institutions and promote transparency in government operations. Efforts were made to enhance the role of the Corruption Eradication Commission (KPK) in combating corruption, although challenges remained in fully addressing this pervasive issue. On the international front, SBY worked to strengthen Indonesia's position in regional and global affairs. He actively engaged in diplomacy, promoting Indonesia as a key player in ASEAN and other international forums. His administration also focused on environmental issues, advocating for sustainable development and addressing climate change challenges. SBY's next era was characterized by a commitment to economic development, infrastructure improvement, good governance, and active international engagement, all aimed at fostering a more prosperous and stable Indonesia. In addition to physical infrastructure, the **condition of internet users** in Indonesia also saw notable changes during SBY's administration. The government recognized the importance of digital infrastructure as a catalyst for economic growth and social development. Efforts were made to expand internet access, particularly in rural and underserved areas, to bridge the digital divide. The growth of internet users during this period was significant in trade transaction with increasing numbers of people gaining access to online services, social media, and e-commerce platforms.

Figure 5. Condition of user interest in Digital Platform



This expansion of internet connectivity contributed to the rise QRIS as a digital payment systems and cashless transactions, although challenges remained in ensuring that all segments of the population could benefit from these advancements.

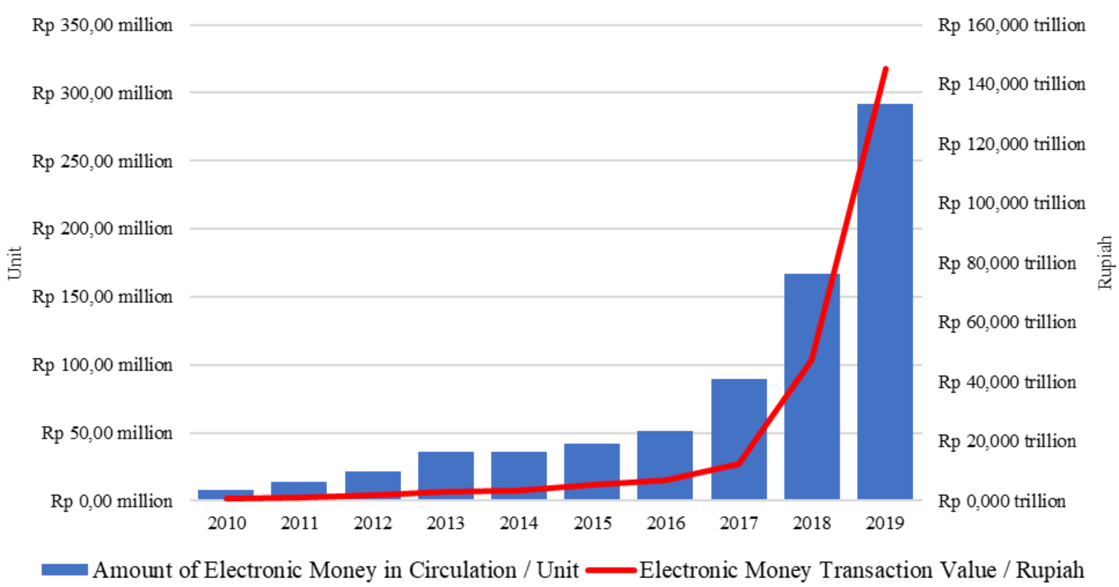
Figure 6. Internet User Penetration



Regulations governing the payment system in Indonesia were strengthened with the issuance of Bank Indonesia Regulations (PBI) that address electronic money and payment systems. One important milestone is PBI Number 20/6/PBI/2018 concerning Electronic

Money, which provides a legal framework for electronic money providers and establishes operational standards to ensure security and consumer protection.

Figure 7. Transaction Value and Amount 2010-2019



This regulation aims to promote innovation in the payment system and enhance financial inclusion across all segments of society and continued in the Joko Widodo era.

Era of President Joko Widodo (Jokowi) (2014-2024)

In the first era of President Joko Widodo, Bank Indonesia (BI) launched the National Non-Cash Movement (GNNT) on August 14, 2014, which aims to create a safe, efficient, and smooth payment system, which in turn will be able to encourage the national financial system to work effectively and efficiently. The implementation of GNNT aims to realize a cashless society ecosystem. In 2015, Jokowi, through the Directorate General of Taxes, issued regulation number PER-41/PJ/2025 concerning the security of electronic transactions of online tax services. Article 2 of the regulation states that Taxpayers can conduct Electronic Transactions with the Directorate General of Taxes through Online Tax Services to exercise their tax rights and obligations.

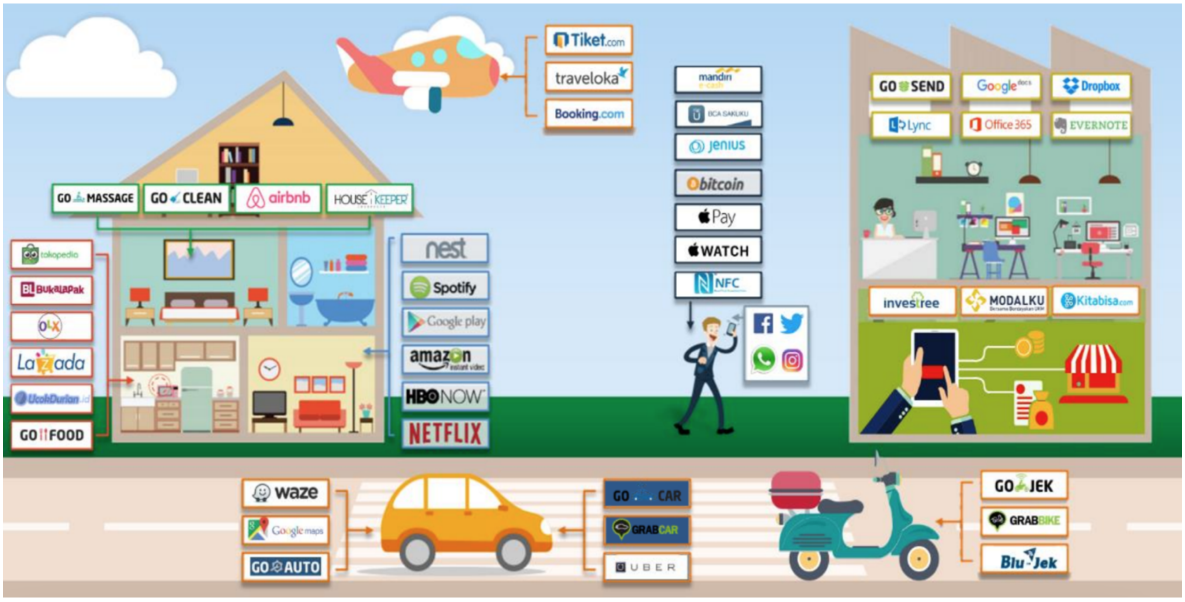
In 2016, Jokowi issued two regulations to improve the implementation of the cashless society system, namely Presidential Regulation No. 82 of 2016 concerning the National Strategy for Inclusive Finance and Presidential Instruction No. 10 of 2016 concerning Directions for the Acceleration of the Implementation of Non-Cash Transactions in all Ministries/Institutions and Regional Governments. The regulation was then followed by Presidential Regulation No. 63 of 2017 concerning the Distribution of Non-Cash Social Assistance and implementation of Non-Cash Transactions for Regional Governments (Provinces, Regencies, Cities) through Circular Letters of the Minister of Home Affairs No. 910/1866/SJ and 910/1867/SJ, and Technical Instructions for School Operational Assistance through Regulation of the Minister of Education and Culture No. 26 of 2017.

Financial institutions also provide support for the implementation of the national strategy by issuing operational regulations for technology-based financial businesses. These regulations include the second amendment to Bank Indonesia Regulation Number

11/12/PBI/2009 with Bank Indonesia Regulation Number 18/17/PBI/2016 of 2016 concerning Electronic Money, Financial Services Authority Regulation Number 77/POJK.01/2016 concerning information technology-based money lending services, and Bank Indonesia Regulation Number 19/12/PBI/2017 concerning the Implementation of Financial Technology.

In 2019, Jokowi continued and accelerated the transformation of the payment system in Indonesia. One significant initiative was the launch of QRIS (Quick Response Code Indonesian Standard), which serves as the QR code standard for non-cash transactions. QRIS aims to facilitate transactions between sellers and buyers and enhance financial inclusion among the public, particularly in the MSME (Micro, Small, and Medium Enterprises) sector.

Figure 8. Integration All Sector using QRIS



Jokowi also promoted the use of digital payment applications and e-wallets, while strengthening regulations related to electronic money to protect consumers and ensure transaction security. Furthermore, the government launched various programs to improve financial literacy among the public, enabling them to better understand and utilize digital payment systems. The payment system in Indonesia has transformed from being cash-based to becoming more modern and digital, supported by policies from each president focusing on efficiency, security, and financial inclusion.

In 2020, Indonesia hit by Covid 19. The COVID-19 pandemic acted as a catalyst for the rapid adoption of electronic transactions in Indonesia. As physical distancing measures were implemented, the demand for cashless payment solutions surged. Jokowi's administration responded by promoting the use of digital payment applications and e-wallets, while also strengthening regulations related to electronic money to protect consumers and ensure transaction security. The government launched various programs to improve financial literacy among the public, enabling them to better understand and utilize digital payment systems. This shift has transformed the payment landscape in Indonesia from being predominantly cash-based to a more modern and digital framework. The transformation of electronic transactions in Indonesia has been a gradual process shaped by the policies and leadership of successive presidents. From Gusdur focus on inclusivity to Jokowi's acceleration of digital payment systems during the pandemic, each era has contributed to the modernization of Indonesia's financial landscape. The ongoing efforts to enhance financial literacy, security, and efficiency in electronic transactions reflect a commitment to fostering a cashless economy that benefits all segments of society, particularly the MSME sector. As Indonesia continues to navigate the challenges and opportunities of digital finance, the foundation laid by these presidential administrations will be crucial for future advancements.

CONCLUSION

Based on this research, it can be concluded that digital payment systems, particularly QRIS, play a crucial role in transforming Indonesia's financial landscape toward greater efficiency, security, and inclusivity. The main advantage of QRIS is simplifying transactions by providing a single QR code that can be used across various banks and payment service providers, facilitating easier transactions for both consumers and merchants. During the era of President Abdurrahman Wahid, government efforts began to stabilize the payment system through economic reforms supporting non-cash transactions, although digital adoption was still in its early stages. In the era of President Megawati Sukarnoputri, the focus on economic stabilization and expanding technology access paved the way for broader development of digital payment technology. In President Susilo Bambang Yudhoyono's era, digital payment development became more evident with increased promotion of debit and credit card usage, alongside the advancement of technology-based payment systems. Moving forward, in President Joko Widodo's era, initiatives such as the National Movement for Non-Cash Society (GNNT) and relevant regulations accelerated the adoption of cashless payments, including the implementation of QRIS. QRIS facilitated system interoperability and enhanced financial inclusion across Indonesia, including remote areas. During this period, QRIS experienced widespread use and demonstrated significant potential to support the nation's digital financial ecosystem. The presence of QRIS and other digital payment innovations have marked significant progress in Indonesia's payment system from the reform era to the present, supporting a more inclusive and efficient economy in the future.

Acknowledgments: Researcher would like to express our heartfelt gratitude to all the faculty members of the Public Administration Department at FISHIPOL, Universitas Negeri Yogyakarta (UNY), for their invaluable guidance, support, and encouragement throughout our research journey. Your expertise and insights have greatly enriched our understanding of the subject matter and have been instrumental in shaping the direction of our study. Researcher also extend our sincere appreciation to our fellow students who assisted us in various capacities during this research project. Your collaboration and enthusiasm have made this endeavor not only productive but also enjoyable. Researcher would like to acknowledge the Directorate of Research and Community Service (DRPM) for providing the research funding that made this project possible. Your support has been crucial in facilitating our research activities and ensuring the successful completion of this study. Thank you all for your contributions and support.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results. All authors declare that there are no competing interests.

Supplementary Materials/ Appendix A

This Research using Qualitative data that collected from seconder platform. Abdurrahman Wahid Era (1999-2001)

- **Key Events:**
    - Abdurrahman Wahid became the first democratically elected president after Suharto, marking a significant shift towards democratic governance.
    - His administration focused on promoting pluralism and tolerance, which laid the groundwork for a more inclusive approach to technology and economic development.
- **Policies:**
    - The Wahid administration emphasized human rights and anti-corruption measures, which indirectly supported the development of a more transparent electronic transaction system.
    - Decentralization of power to local governments allowed for localized initiatives in adopting electronic payment systems, fostering innovation at the regional level.
- **Challenges:**
    - The period was marked by political instability and conflicts within the government, which hindered the rapid implementation of electronic transaction systems. The focus on stabilizing the political landscape often overshadowed technological advancements.

Megawati Sukarnoputri Era (2001-2004)

- **Key Events:**
    - Megawati Sukarnoputri became the first female president of Indonesia, continuing efforts for political stability and economic recovery.
    - Her administration recognized the importance of technology in modernizing the economy, including electronic transactions.
- **Policies:**
    - The focus on economic reform and social welfare programs included initiatives to promote cashless transactions as a means to enhance financial inclusion and efficiency in government services.
    - Strengthening national unity also involved improving access to technology across diverse regions, facilitating the adoption of electronic payment systems.
- **Challenges:**
    - Economic challenges and public dissatisfaction limited the scope of reforms, including those related to electronic transactions. The need for broader economic stability was paramount, which sometimes delayed technological advancements.

Susilo Bambang Yudhoyono Era (2004-2014)

- **Key Events:**
    - Yudhoyono was the first directly elected president in Indonesia, overseeing significant economic growth and development.
    - His administration recognized the potential of electronic transactions to drive economic progress and improve efficiency.
- **Policies:**
    - The focus on anti-corruption, economic reform, and disaster management included initiatives to enhance the integrity and security of electronic transactions.
    - Strengthening democratic institutions also meant improving the regulatory framework for electronic payments, fostering a safer environment for digital transactions.
- **Challenges:**
    - Addressing social inequality and environmental issues posed challenges to the widespread adoption of electronic transactions, as not all segments of the population had equal access to technology.

Joko Widodo Era (2014-Present)

- **Key Events:**
    - Joko Widodo's administration has focused on infrastructure development and economic growth, recognizing the importance of digital infrastructure for electronic transactions.
    - The implementation of the "Nawacita" vision for national development includes a strong emphasis on technology and innovation.
- **Policies:**
    - The administration has placed significant emphasis on social welfare, education, and healthcare, integrating electronic transactions into public services to enhance accessibility and efficiency.
    - Efforts to improve the investment climate and ease of doing business have included promoting cashless transactions as a means to modernize the economy.
- **Challenges:**
    - Managing the COVID-19 pandemic has accelerated the shift towards electronic transactions, but it has also highlighted existing disparities in access to technology and digital literacy.
    - Addressing environmental concerns and social issues remains a challenge, as the push for digital solutions must also consider sustainability and inclusivity.

REFERENCES

Journal Article

Alkhowaiter, W. A. (2020). Digital payment and banking adoption research in Gulf countries: A systematic literature review. *International Journal of Information Management*, *53*, 102102. https://doi.org/10.1016/j.ijinfomgt.2020.102102

Ballet, J., Marchand, L., Pelenc, J., & Vos, R. (2018). Capabilities, Identity, Aspirations and Ecosystem Services: An Integrated Framework. *Ecological Economics*, *147*, 21–28. https://doi.org/10.1016/j.ecolecon.2017.12.027

Demals, T., & Hyard, A. (2014). Is Amartya Sen's sustainable freedom a broader vision of sustainability? *Ecological Economics*, *102*, 33–38. https://doi.org/10.1016/j.ecolecon.2014.03.009

Erininda, W., Stiawan, D., Tyas, A., Aryani, D., Abdurrahman, U. K. H., & Pekalongan, W. (n.d.). *Dinamika Perilaku Konsumen pada Era Cashless Society: Kajian Literatur Tentang Preferensi Pembayaran*.

Hassan, M. A., Shukur, Z., Hasan, M. K., & Al-Khaleefa, A. S. (2020). A Review on Electronic Payments Security. *Symmetry*, *12*(8), 1344. https://doi.org/10.3390/sym12081344

Kajol, K., Singh, R., & Paul, J. (2022). Adoption of digital financial transactions: A review of literature and future research agenda. *Technological Forecasting and Social Change*, *184*, 121991. https://doi.org/10.1016/j.techfore.2022.121991

Kumparan. (2024). *Soaring QRIS Transaction Volume due to Gen Z Cashless Phenomenon*.

Laffont, J.-J., & Tirole, J. (1990). The Politics of Government Decision Making: Regulatory Institutions. In *Economics, & Organization , Spring* (Vol. 6, Issue 1). https://about.jstor.org/terms

Martins, N. O. (2018). The Classical Circular Economy, Sraffian Ecological Economics and the Capabilities Approach. *Ecological Economics*, *145*, 38–45. https://doi.org/10.1016/j.ecolecon.2017.08.026

Molenveld, A. (n.d.). *Using Q methodology for (comparative) policy analysis*.

Nibras Nada Nailufar. (2020, February 21). Perkembangan Ekonomi dan Politik di Era Gus Dur . *Kompas*.

Nurqamarani, A. S., Fadilla, S., & Juliana, A. (2024). Revolutionizing Payment Systems: The Integration of TRAM and Trust in QRIS Adoption for Micro, Small, and Medium Enterprises in Indonesia. *Journal of Information Systems Engineering and Business Intelligence*, *10*(3), 314–327. https://doi.org/10.20473/jisebi.10.3.314-327

Ostrom, E. (2009). A General Framework for Analyzing Sustainability of Social-Ecological Systems. *Science*, *325*(5939), 419–422. https://doi.org/10.1126/science.1172133

Pazarbasioglu, C., Mora, A. G., Uttamchandani, M., Natarajan, H., Feyen, E., & Saal, M. (2020). *DIGITAL FINANCIAL SERVICES April 2020*.

Puspitasari, A. A., & Salehudin, I. (2022). Quick Response Indonesian Standard (QRIS): Does Government Support Contribute to Cashless Payment System Long-term Adoption? *Journal of Marketing Innovation (JMI)*, *2*(1). https://doi.org/10.35313/jmi.v2i1.29

Rayan Hamad Alkhaldi. (2024). Digital transformation impact on business decision-making. *World Journal of Advanced Engineering Technology and Sciences*, *13*(1), 001–011. https://doi.org/10.30574/wjaets.2024.13.1.0365

Santika, A., Aliyani, R., & Mintarsih, R. (n.d.). *PERSEPSI DAN INTENSI PELAKU UMKM TERHADAP PENGGUNAAN QRIS SEBAGAI SISTEM PEMBAYARAN DIGITAL DI KOTA TASIKMALAYA*. https://transpublika.co.id/ojs/index.php/Transekonomika

Sebayang, T. E., Hakim, D. B., Bakhtiar, T., & Indrawan, D. (2023). What Accelerates the Choice of Mobile Banking for Digital Banks in Indonesia? *Journal of Risk and Financial Management*, *17*(1), 6. https://doi.org/10.3390/jrfm17010006

Setiawan, I. W. A., & Mahyuni, L. P. (2020). QRIS IN THE EYES OF UMKM: EXPLORATION OF MSME PERCEPTIONS AND INTENTIONS USING QRIS. *E-Jurnal Ekonomi Dan Bisnis Universitas Udayana*, 921. https://doi.org/10.24843/EEB.2020.v09.i10.p01

Sriram, N., Misomnai, C., Metasuttirat, J., & Rajphaetyakhom, C. (n.d.). A Comparative Analysis of New Public Management New Public Service and New Public Governance Abstract. In *Asian Political Science Review* (Vol. 3, Issue 2). https://ssrn.com/abstract=3553641

Statista. (2024). *Number of eCommerce Users in Indonesia from 2019 to 2028*. Accessed: 20 January 2024. [Online].

Stiglitz, J. E. (2012). *The Journal of Economic Perspectives* and the Marketplace of Ideas: A View from the Founding. *Journal of Economic Perspectives*, *26*(2), 19–26. https://doi.org/10.1257/jep.26.2.19

Tengeh, R. K., & Gahapa Talom, F. S. (2020). Mobile Money as a Sustainable Alternative for SMEs in Less Developed Financial Markets. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(4), 163. https://doi.org/10.3390/joitmc6040163

Widhyastana, I. M. A., & Rachmawati, R. (2022). Digital Payment Application as a Cashless Utilization and its Benefit for the Community in Denpasar City. *International Journal on Advanced Science, Engineering and Information Technology*, *12*(4), 1650. https://doi.org/10.18517/ijaseit.12.4.12668