

Perceptions And Intentions Of MSME Operators Regarding The Use Of QRIS As A Payment System In Medan

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Abstract

This study analyzes the perceptions and intentions of Micro, Small, and Medium Enterprise (MSME) operators in Medan regarding the use of QRIS as a digital payment system. Using a qualitative approach, data were collected through in-depth interviews and Focus Group Discussions (FGDs) with MSME operators who had adopted or had yet to adopt QRIS. The findings indicate that perceived Usefulness, ease of use, and risks significantly influence QRIS adoption. MSME operators who recognize transaction efficiency and improved financial record keeping tend to be more receptive to QRIS, while concerns about security and system disruptions remain barriers. Additionally, external factors, such as digital literacy and government support, also contribute to users' intentions to adopt a QRIS. This study emphasizes the need for education and infrastructure improvements to accelerate QRIS adoption among MSMEs.

Keywords: QRIS, MSMEs, Perceived usefulness, Perceived ease of use, Perceived Risk, usage intention

INTRODUCTION

Rapid advancements in information technology have transformed various aspects of human life, including payment systems. Alongside the digitalization of the economy, financial transactions previously conducted in cash are increasingly shifting toward digital or cashless payments. According to Bank Indonesia (2023), transactions using electronic money have experienced a significant annual increase, reflecting a change in consumer behavior as consumers increasingly adopt digital payment systems because of their convenience, speed, and security.

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This transformation affects not only consumers but also businesses, particularly micro, small, and medium-sized enterprises (MSMEs). MSMEs play a crucial role in Indonesia's economy, contributing 60.5% to the Gross Domestic Product (GDP) and employing 97% of the national workforce (Ministry of Cooperatives and SMEs 2023). However, when adapting to the digital era, MSMEs face challenges in adopting cashless payment systems. Before the introduction of a standardized payment system, MSMEs had to use multiple QR codes from different payment service providers, resulting in operational complexity, additional costs, and financial management difficulties.

To address these issues, Bank Indonesia introduced the Quick Response Code Indonesian Standard (QRIS) in 2019 as a standardized QR code-based digital payment system. QRIS was designed to simplify cashless payments by integrating various service providers into a single QR code that can be used for all digital transactions. With this system, MSMEs no longer need to provide multiple QR codes from different providers, thereby making transactions more efficient and practical.

Despite the various benefits of QRIS, its adoption by MSMEs still faces several challenges. According to Bank Indonesia (2023), as of the third quarter of 2023, the number of merchants using the QRIS exceeded 30 million, with the majority coming from the MSME sector. However, challenges remain in their implementation, including limited digital literacy, trust in electronic payment systems, and uneven infrastructure readiness. MSME operators' perceptions of the benefits, ease of use, and risks associated with QRIS are key determinants of their decision to adopt this technology. Additionally, their intention to use a QRIS is influenced by the user experience, regulations, and incentives provided by financial service providers.

In Medan, a metropolitan city in Indonesia with a growing number of MSMEs, there is still a lack of research specifically exploring how MSME operators perceive and intend to adopt QRIS as their primary payment system. Therefore, this study aimed to analyze the perceptions and intentions of MSME operators in Medan regarding the use of QRIS as a digital payment system. Understanding the factors influencing QRIS adoption among MSMEs is expected to contribute academically and provide valuable insights for regulators and payment service providers in enhancing QRIS adoption in the MSME sector, thereby accelerating digital economic transformation in Indonesia.



THEORETICAL BACKGROUND

Financial Technology

Financial technology refers to innovations in the financial system that integrate technology to introduce new products, services, and business models into the financial industry. According to the Bank Indonesia Regulation No. 19/12/PBI/2017, fintech encompasses the use of technology in the financial system, which can impact monetary stability and the financial system, as well as the efficiency, smooth operation, security, and reliability of payment systems.

Fintech covers a wide range of services including payment systems, market support, investment and risk management, lending, financing, and capital provision. Unlike conventional banking services, fintech operates as a new business model that offers financial solutions that are more accessible to the public.

One of the key advantages of fintech is its ability to facilitate financial transactions without requiring users to have bank accounts. This enables individuals to conduct transactions without personal identification, which is typically required in traditional banking systems. Although fintech companies are not financial institutions, such as banks, they remain under the supervision of Bank Indonesia and the Financial Services Authority (OJK) to ensure consumer protection. Therefore, all fintech service providers are required to register their businesses with regulatory authorities to guarantee security and compliance with the applicable regulations.

QRIS Payment System

The Quick Response Code Indonesian Standard (QRIS) is a digital payment system developed by Bank Indonesia to facilitate cashless transactions by using QR codes. Launched on August 17, 2019, QRIS integrates various payment services into a single standardized QR code, allowing users to conduct transactions using multiple payment applications without requiring different QR codes from each service provider (Rudolf, 2024; PUTRI et al., 2023; Nadinta & Kusumawati, 2023).

QRIS is designed to enhance financial inclusion and support the growth of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. By providing a standardized digital payment platform, QRIS promotes more efficient cashless transactions and assists business owners in financial record keeping (Butarbutar et al., 2022; Pratiwi et al., 2022). Furthermore, this system offers convenience and security, which are crucial factors for building user trust (Dewi et al., 2024; Dewi et al., 2022).



For consumers, QRIS serves as a safer and more practical payment alternative than cash transactions, particularly during situations such as the COVID-19 pandemic. The, which requires minimizing physical contact (Permatasari et al., 2022). QRIS has also gained popularity among the younger generation, who are more accustomed to digital payments (Natswa & Subaagyo, 2024; Tatian et al., 2024).

Despite its numerous advantages, QRIS adoption still faces challenges, particularly regarding user awareness of digital security. Some MSME operators remain hesitant to adopt this system because of concerns about cyber threats (Jusman & Fauziah, 2024; Primandari & Suprpti, 2022). Therefore, education and public awareness campaigns on QRIS security are key factors in expanding its acceptance (Butarbutar et al., 2022; Usmiati et al., 2024).

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is a fundamental framework for understanding technology adoption, including digital payment systems such as the Quick Response Code Indonesian Standard (QRIS). This model emphasizes that Perceived Usefulness and Perceived Ease of Use are the primary factors influencing an individual's intention to adopt a technology (Davis, 1989; Rafdinal & Senalasar, 2021). In the context of QRIS, Perceived Usefulness refers to the benefits experienced by MSME operators in enhancing transaction efficiency and financial management, whereas PEOU pertains to the ease of using the system without requiring complex technical skills.

Research indicates that the higher the users perceive the benefits and ease of use of a QRIS, the stronger their intention to adopt it (Pramuja et al., 2021; Wicaksono et al., 2023). Additionally, trust in the security and reliability of QRIS transactions plays a crucial role in enhancing both PU and PEOU, thereby promoting broader adoption (Faisal et al., 2023; Sochiffan, 2022; Primandari & Suprpti, 2022). Trust is often associated with extensions of the TAM, such as the Extended TAM, in which confidence in digital payment systems becomes a key determinant of technology adoption.

Beyond Perceived Usefulness and PEOU, external factors, such as government support and social influence, also contribute to QRIS adoption. Bank Indonesia has implemented various policies, including usage incentives and digital education programs for MSMEs, to enhance their understanding and trust in QRIS (Jusman & Fauziah, 2023; Wardhani et al., 2023). Moreover, social influence from business peers and customers can shape positive attitudes toward QRIS adoption, as highlighted in studies by Suparti et al. (2023) and Saripudin et al. (2023). In the MSME context, perceived risks, limited



digital literacy, and technological infrastructure constraints also pose challenges to QRIS implementation that require further analysis.

Perceived Usefulness

Perceived usefulness in the context of the QRIS payment system refers to users' beliefs that this technology can enhance transaction efficiency and financial performance. This concept plays a crucial role in technology adoption and user satisfaction for digital payment systems. Numerous studies have demonstrated that perceived usefulness significantly influences users' intention to adopt a QRIS, particularly because of its advantages in accelerating transactions, improving accuracy, and facilitating payments (Silaen et al. 2021; Wijayanto et al. 2024; Paramita and Cahyadi, 2024; Asmara et al. 2023, Puspitasari and Salehudin 2022, Sholihah and Nurhapsari 2023).

Several key QRIS features that contribute to perceived usefulness include faster transaction processing, automatic financial record-keeping, and easy access to promotions and discounts (Asmara et al., 2024; Asmara et al., 2023). Moreover, QRIS aligns with the digital lifestyle of modern society, particularly the younger generation, who prioritize speed and convenience in transactions (Tatian et al., 2024; Mareta & Meiryani, 2023).

In the Technology Acceptance Model (TAM), perceived usefulness is a key factor shaping users' attitudes and behaviors toward QRIS adoption (Faisal et al., 2024; Judijanto & Husnayetti, 2024). Users who experience tangible benefits from QRIS tend to exhibit higher satisfaction, which ultimately fosters loyalty and the continued use of the system (Wicaksono et al., 2024; Nadinta & Kusumawati, 2023). Davis (1989) argues that the usefulness of a technology lies in its ability to provide advantages to its users. An effective information technology system helps users complete tasks more efficiently and effectively (Thompson et al., 1991).

Davis also developed usefulness construct measurements that include several key aspects: work more quickly (accelerating tasks), usefulness (offering tangible benefits), increasing productivity (enhancing work output), enhancing effectiveness (improving task execution), and improving job performance (optimizing work results). Thus, a beneficial technology adds value to its users by enhancing the efficiency, effectiveness, and productivity in completing tasks.



Perceived Ease of Use

Perceived Ease of Use (PEOU) in a QRIS payment system refers to users' belief that this technology can be utilized effortlessly without significant difficulty. This concept is rooted in the Technology Acceptance Model (TAM), which states that the easier a technology is to use, the more likely users are to adopt it (Wijayanto et al., 2024; Wicaksono et al., 2024; Erwinsyah et al., 2023).

The ease of using a QRIS has been associated with increased user interest and satisfaction. Users who perceive a QRIS as easy to operate tend to engage with it more actively, as the system simplifies the payment process and enhances transaction efficiency (Asmara et al., 2024; Asmara et al., 2023). Additionally, perceived ease of use plays a crucial role in building trust, which ultimately fosters sustained adoption of QRIS (Rudolf, 2024; Safitri & Fihartini, 2024).

This factor also influences QRIS adoption across various user groups, particularly micro, small, and medium enterprises (MSMEs) and the younger generations. MSME owners are more likely to adopt QRIS if they perceive the system as easy to use, reducing barriers to transitioning to cashless transactions (Jusman and Fauziah, 2024; Sholihah and Nurhapsari, 2023). Similarly, Generation Z is more inclined to embrace technologies that seamlessly integrate into their daily lives (Mareta and Meiryani, 2023). 40

Perceived Risk

Perceived risk in a QRIS payment system refers to users' subjective assessment of potential losses that may occur when using this technology. This concept plays a crucial role in shaping users' intentions and behaviors toward adopting a QRIS. Various studies have identified several key aspects of perceived risk, including security concerns, transaction errors, and the risk of financial loss (Primandari and Suprpti, 2022; Rahmawati et al., 2024).

The primary factors influencing perceived risk include cyber threat and fraud. Many MSME operators are reluctant to adopt QRIS because of a lack of understanding of digital security, which increases their fear of cyberattacks (Jusman and Fauziah, 2024). Additionally, concerns regarding transaction errors that could lead to financial losses also act as barriers to QRIS adoption (Nurhapsari and Sholihah, 2022).

However, perceived risk can be mitigated when users view QRIS as a safer alternative to cash transactions, particularly for preventing counterfeit money and financial crimes (Ayuningtyas et al., 2024; Paramita & Cahyadi, 2024). External factors, such as government policies and the COVID-19 pandemic, have also influenced this perception,

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as the public has increasingly recognized the QRIS as a safer alternative to traditional payment methods (Badrawani, 2022). 4o.

Intention

User intention to adopt the Quick Response Code Indonesian Standard (QRIS) payment system is influenced by various factors, including perceived usefulness, perceived ease of use, trust, and understanding of digital payment systems. Introduced by Bank Indonesia on August 17, 2019, QRIS aims to enhance the efficiency and security of digital transactions through a single QR code that can be used across multiple payment applications (Rudolf, 2024; Nadinta & Kusumawati, 2023; Ayuningtyas et al., 2024).

The decision of micro, small, and medium enterprises (MSMEs) to adopt a QRIS largely depends on their perception of the ease of use and benefits offered by the system. The primary advantages of QRIS include transaction efficiency, improved financial record-keeping, and broader access to digital payment networks (Puspitasari & Salehudin, 2022; Auliya & Arransyah, 2023). However, QRIS adoption still faces challenges such as concerns over cybersecurity and fraud risks, which may hinder users' intention to embrace this technology (Jusman & Fauziah, 2024; Primandari & Suprapti, 2022).

Furthermore, financial literacy plays a significant role in shaping users' willingness to use QRIS. Studies indicate that individuals with higher financial literacy are more inclined to adopt cashless transactions as they better understand both the benefits and risks associated with digital payments (Natswa & Subagyo, 2024; Wijayanto et al., 2024). Therefore, education and awareness campaigns regarding QRIS security and benefits are key factors in increasing user adoption, particularly among MSMEs (Paramita & Cahyadi, 2024; Suparti et al., 2024; Prihatiningsih et al., 2023).

Micro, Small, and Medium Enterprises (MSMEs)

According to the 1945 Constitution of the Republic of Indonesia., which was further reinforced by People's Consultative Assembly Decree No. XVI/MPR-RI/1998 on Economic Policy in Economic Democracy, Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in the national economy. MSMEs need to be empowered to create a more balanced, developed, and equitable economic structure.

The definition of MSMEs is regulated under Law No. 9 of 1999 and later updated in Law No. 20 of 2008, Article 1, as follows.



1. Micro Enterprises refer to productive businesses owned by individuals or sole proprietorships that meet specific criteria, as stipulated by applicable regulations.
2. Small Enterprises are independent, productive economic businesses that are not subsidiaries or branches of Medium or Large Enterprises that meet the criteria established by law.
3. Medium Enterprises refer to independent, productive economic businesses that are not part of Small or Large Enterprises, with net assets or annual revenue in accordance with prevailing regulations.

METHODOLOGY

This study employs a qualitative approach using the case study method to explore in depth the perceptions and intentions of MSME actors regarding the adoption of QRIS in Medan. This approach was chosen to uncover the experiences, understanding, and challenges faced by MSME operators in adopting a QRIS as a digital payment system.

Data were collected through in-depth interviews and focus group discussions (FGDs) with MSME operators who had adopted or had not yet adopted QRIS. Respondents were selected using purposive sampling based on the following criteria: (1) MSMEs that are actively operating in Medan City; (2) MSME operators who are familiar with or have used QRIS as a payment method; and (3) individuals with experience in digital transactions.

Data analysis was conducted using the thematic analysis method, where data obtained from interviews and FGDs were coded, categorized, and analyzed to identify patterns and key themes related to perceived usefulness, ease of use, risk perception, and intention to adopt QRIS among MSMEs. To enhance data validity, this study applied data triangulation by comparing interview findings from various sources and reviewing documents related to QRIS adoption policies in Indonesia.

FINDINGS

The findings were obtained through interviews with MSME operators in Medan City who adopted QRIS as a cashless transaction method. The informants were randomly selected to provide relevant insights related to the research objectives. Field observations were conducted to gain a comprehensive understanding of the phenomenon under investigation and to collect relevant data that support this study.



Perceived Usefulness

Perceived usefulness refers to the belief that a particular technology can enhance transaction efficiency. Based on interviews with ten MSME operators in Medan City, QRIS provides three main benefits: as a profitable payment medium, an alternative payment method, and a means to reduce physical contact. As stated by some informants:

“QRIS is very beneficial, simple, and secure.” (Informant 02)
“There are many positive effects after using QRIS.” (Informant 03)

A QRIS is considered to improve transaction efficiency, reduce operational costs, and ensure more stable payments. This finding aligns with the study by Lee and Shin (2008), who revealed that QR code-based cashless payment systems can enhance service quality and minimize transaction risks.

In addition, QRIS serves as a flexible payment alternative for MSME operators. With the increasing use of digital payment services in Medan City, the QRIS facilitates transactions between sellers and buyers. Some informants expressed the following.

“Using QRIS is hassle-free; there’s no need to prepare change, and there’s no risk of counterfeit or damaged money.” (Informant 04)

“Transactions using QRIS are easier, simpler, and faster, so customers don’t have to wait too long at the cashier.” (Informant 05)

The MSME operators also acknowledge that QRIS payments enable them to cater to customers who prefer electronic money. As stated by Informant 01:

“Payments are as simple as scanning the barcode using phone banking.”

This sentiment was reinforced by Participant 03, who noted:

“Nowadays, most consumers don’t carry cash, so they frequently use electronic money.”

Moreover, QRIS helps reduce physical contact in transactions, even though this study was conducted after the pandemic. Some MSME operators continue to prefer this method to minimize the risk of disease transmission.

“During COVID, people avoided using cash; almost 70% of transactions were done by scanning barcodes.” (Informant 06)

“Cash transactions carry germs, so scanning is a safer option.” (Informant 04)

Furthermore, QRIS has helped MSMEs attract more customers, particularly those who are accustomed to digital payment systems. As stated by Informant 07:

“Most of my customers are working women who prefer cashless shopping, so it has increased my sales.”



Based on the explanations above, it can be concluded that QRIS has a positive impact on MSMEs in Medan. With seamless transactions, improved efficiency, and shifting consumer preferences toward cashless payments, the QRIS plays a crucial role in supporting digital economic growth and financial inclusivity.

Perceived Ease Of Use

Perceived Ease of Use refers to the extent to which an individual believes that a technology is easy to use and does not require significant effort. All MSME operators interviewed stated that the QRIS is very easy to use and facilitates the payment process. As expressed by some informants,

"It's easy to use, no hassle." (Informant 06) "It's just like Dana, OVO, Gopay—the usage is more or less the same." (Informant 10)

Based on these statements, we can conclude that QRIS shares similarities with other digital payment applications, making it easy for MSME operators to adopt. This ease of use was further reinforced by Participant 03, who stated:

"Using QRIS is very simple; just scan it with a phone. I just provide the QR code, and customers can use it right away."

Additionally, the reliability of the QRIS contributes to the convenience of transactions. Informant 06 explained:

"As long as there is an internet connection, just scan the QRIS code—it's easy, no hassle."

This convenience was further emphasized by Participant 06, who stated:

"Using QRIS is actually more practical than cash transactions. Buyers don't need to carry cash, and sellers don't have to prepare small change for transactions, making it more convenient for both parties."

Moreover, QRIS is perceived as highly compatible with the lifestyles of modern consumers, particularly young people who are more accustomed to cashless transactions. As Informant 06 noted:

"Most of my customers are young people, so they prefer to pay using QRIS."

Based on the above explanations, it can be concluded that QRIS significantly assists MSME operators in streamlining and simplifying the transaction process. The ease of use benefits both sellers and buyers, making payment transactions more efficient and time-efficient. QRIS is seen as not only an innovative payment system, but also a highly user-friendly solution for both business operators and consumers



Perceived Risk

Perceived Risk refers to the potential losses that users may encounter when using digital payment technologies. Based on the interviews conducted, MSME operators stated that the risks associated with QRIS are relatively low compared with cash payments. As expressed by some informants,

“So far, there haven’t been any issues using QRIS. At most, it sometimes takes a bit longer to process payments due to network problems.”
(Informant 02)

“The risk is actually smaller. With cash payments, employees might commit fraud, but with QRIS, everything is recorded, so employee fraud can be minimized.” (Informant 05)

Informant 06 shared a similar sentiment, stating that QRIS is safer because transactions can be monitored and verified in real-time. Several MSME operators also emphasized that although QRIS relies on an Internet connection, network issues do not significantly disrupt business operations. Thus, QRIS is perceived as a safer and more transparent payment method than cash transactions.

Intention

Intention refers to an individual's willingness or desire to perform a specific action. In this study, intention refers to MSME operators' willingness to continue using a QRIS as a payment method in their business operations.

Bank Indonesia launched a QR Code-based digital payment system as a national standard for cashless transactions. This system has been implemented nationwide since January 1, 2020, to meet market demands for a more practical payment method that can be integrated across various non-cash transaction applications. Since its introduction, QRIS usage has continued to grow, and is now widely adopted in almost every city in Indonesia, including Medan.

This study involved 10 MSME operators in Medan who used QRIS for their business transactions. The interview results indicated that all informants had adopted the QRIS and understood its purpose. They perceive QRIS as a solution that simplifies business processes, speeds up transactions, and facilitates financial record-keeping owing to its cashless and system-recorded nature.

The findings suggest that MSME operators have a strong intention to continue using a QRIS based on perceived usefulness, perceived ease of use, and perceived risk.



This was evident in their statements during the interviews. For example, Participant 08 stated,

"I find QRIS very helpful, so I will definitely continue using it for my business transactions."

Similarly, Informant 09 added,

"Almost all customers are now used to QRIS, so I also have to keep using it to stay competitive."

Participant 07 emphasized the convenience of transaction recording, stating:

"With QRIS, I don't have to manually check cash transactions one by one. Everything is automatically recorded in the application."

Beyond convenience and efficiency, some informants highlighted that businesses offering digital payment methods are perceived as more trustworthy by customers. Many consumers now prefer cashless payments to physical cash because of their practicality and hygiene benefits. With the increasing adoption of QRIS, MSME operators believe that the continued use of this system is inevitable, driven by shifting consumer habits and market demand.

DISCUSSION

This study focuses on the perceptions and intentions of MSME operators in Medan regarding the use of a QRIS as a digital payment system. The findings indicate that most MSME operators have a positive perception of QRIS's benefits of QRIS. QRIS is perceived to accelerate transactions, enhance financial record-keeping efficiency, and reduce the risk of payment errors. This aligns with the findings of Silaen et al. (2021) and Paramita and Cahyadi (2024), who stated that perceived usefulness plays a crucial role in increasing the intention to use a QRIS. Additionally, the automatic recording feature offered by QRIS provides added value to small business owners. This supports Davis's findings (Thompson et al., 1991) that suggest that technology that streamlines tasks and enhances productivity is more likely to be accepted by users.

Perceived ease of use is also a key factor in the adoption of QRIS. MSME operators in Medan find the system user-friendly and do not require specialized skills. This is supported by studies conducted by Wijayanto et al. (2024) and Wicaksono et al. (2024), which state that the easier a technology is to use, the higher is its acceptance rate among users. During the interviews, several informants mentioned that they could operate the QRIS using only their mobile phones, without requiring complex additional devices. This indicates that the QRIS meets the accessibility standards of modern

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technology, making it usable by a wide range of users, including MSMEs. This factor is also in line with the Technology Acceptance Model (TAM), which suggests that perceived ease of use contributes to forming a positive attitude toward new technology (Judijanto & Husnayetti, 2024).

However, the perceived risk remains a consideration for some MSME operators using QRIS. Some informants expressed concerns about transaction security, particularly regarding potential system errors and digital fraud. Primandari and Suprpti (2022) and Jusman and Fauziah (2024) also found that security risks influence users' decisions to adopt digital payment systems. These concerns are generally related to cyber threats such as fraudulent QR codes or technical errors that could lead to financial losses (Rahmawati et al., 2024). Nevertheless, some informants emphasized that the benefits of using QRIS outweigh its risks, leading them to continue using it in their business operations.

From the perspective of usage intention, this study found that most MSME operators in Medan are highly motivated to continue using a QRIS. This is supported by statements from informants who perceive QRIS as a modern payment method that aligns with the current customer preferences. Rudolf (2024) and Nadinta and Kusumawati (2023) explained that users' intention to adopt QRIS is significantly influenced by perceived usefulness, perceived ease of use, perceived risk, and trust in the system. Additionally, financial literacy plays a role in shaping users' intentions, as individuals with a better understanding of digital finance are more likely to adopt QRIS in their business operations (Natswa & Subagyo, 2024; Wijayanto et al., 2024). With the increasing adoption of QRIS across various business sectors, MSME operators feel a need to adapt to this digital transformation to remain relevant and competitive in the market.

CONCLUSION

This study demonstrates that MSME operators in Medan have a positive perception of the QRIS as a digital payment system. QRIS offers significant benefits, particularly in improving transaction efficiency and financial record-keeping. Furthermore, the ease of use of QRIS has driven its widespread adoption by businesses. However, some concerns regarding security and potential risks require further attention. Despite these concerns, MSME operators' intention to continue using QRIS remains high, indicating that this system has been well accepted and has great potential for continued growth in the future. Thus, this study successfully addressed the primary objective of



analyzing the perceptions and intentions of MSME operators regarding QRIS usage in Medan.

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