TRANSPUBLIKA
Precise. Resilience. Felicitous.

**Jurnal Ekonomi Kreatif dan Manajemen Bisnis Digital**
https://transpublika.co.id/ojs/index.php/JEKOMBITAL
Online ISSN 2961-8428

https://doi.org/10.55047/jekombital.v4i4.1193

Original Article

# A Comparative Analysis of Transaction Efficiency and Customer Satisfaction Based on Digital and Non-Digital Payment Systems in SMEs

**Moh Fakhri Siddiqi[1*], Nur Fajria[2]**

[1,2]Faculty of Social Sciences and Humanities, Universitas Nurul Jadid, Indonesia
Email: [1)] fakhriysiddiqy@unuja.ac.id, [2)] nurfajriyah188@gmail.com

**Received : 20 May - 2026**
**Accepted : 11 June - 2026**
**Published online : 23 June - 2026**

## Abstract

Technological advancement has driven changes in SME payment systems, shifting from non-digital methods toward digital payments. However, not all business operators adopt digital payments, as differences in technology readiness, business characteristics, and the habits of SME operators and customers have caused both methods to remain in use. This study aims to compare digital and non-digital payments in SMEs and analyze their effects on transaction efficiency and customer satisfaction. A qualitative method with a phenomenological approach was employed to understand SME operators' direct experiences using both payment methods. Data were collected through in-depth interviews, direct observation, and documentation, then analyzed using thematic analysis. The results indicate that digital payments are superior in transaction efficiency due to automated processes; in contrast, non-digital payments show inconsistent efficiency owing to manual processes, purchase quantities, and customer volume. In terms of customer satisfaction, no single payment method comprehensively improves satisfaction; rather, satisfaction is limited to specific customer groups and is influenced by customer habits and digital literacy. These findings constitute the study's novelty, indicating that payment system success in SMEs is not solely determined by technology use, but also by the characteristics of the customers served. Accordingly, this study suggests that offering both digital and non-digital payments simultaneously is the most effective strategy for SMEs to meet diverse customer needs.

**Keywords**: Customer Satisfaction, Digital Payments, Non-Digital Payments, Transaction Efficiency.

## 1. Introduction

Technological advancement has reshaped human interaction, communication, and business practices, particularly in the economic and financial sectors (Adelia et al., 2025; Harahap et al., 2026; Utami, 2024). Technology has become one of the essential needs for business operators in enhancing competitiveness and driving global economic growth. The advancement of digital technology has transformed business activities globally, including the transformation of financial systems in Indonesia. One manifestation of this advancement is the payment system. In line with the view of Fahrudin and Isnaini (2023) that technological advancement also drives the growth of the digital economy, one of the felt innovations is the increasingly developing transaction system. Technological advancement has brought major changes; transaction activities are no longer limited to the use of cash but have shifted to non-cash payment systems that are faster and more efficient (Siddiqi et al., 2025; Simangunsong & Simanjorang, 2025). Research conducted by Maharani et al. (2025) also explains that in recent years, technological advancement has influenced society's financial transaction

patterns, one of which is the digital payment system that has become an important part of the global economic ecosystem, as digital payment systems have gradually replaced cash transactions.

As technology has advanced, payment systems in Indonesia have now undergone changes, encompassing a range of transaction methods from traditional to electronic. It is this transformation that continues to drive changes in people's behaviour regarding the use of technology. In the digital age, electronic payments have become an integral part of Indonesia's financial system (Hasan et al., 2025).

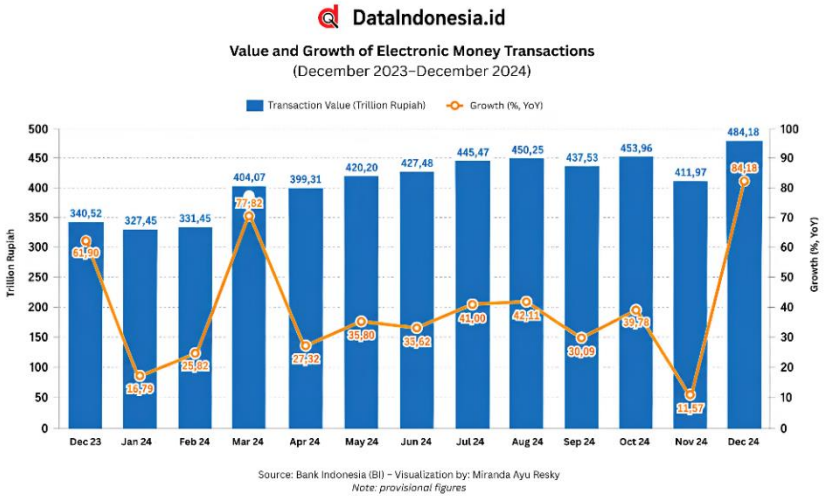


**Figure 1. Growth in Electronic Money Transaction Volume**
Source: Bank Indonesia (BI), visualized by: Miranda Ayu Resky

This can be seen in the graph as in figure 1 above, which illustrates the trend in the value and growth of electronic money transactions in Indonesia during the period from December 2023 to December 2024. The graph shows that the value of electronic money transactions has continued to rise over time. This indicates that the use of electronic money is growing and playing an increasingly significant role in economic activity. This increase reflects the fact that electronic money transactions are becoming increasingly accepted and used, in line with technological advancements and changes in people's lifestyles in the modern era.

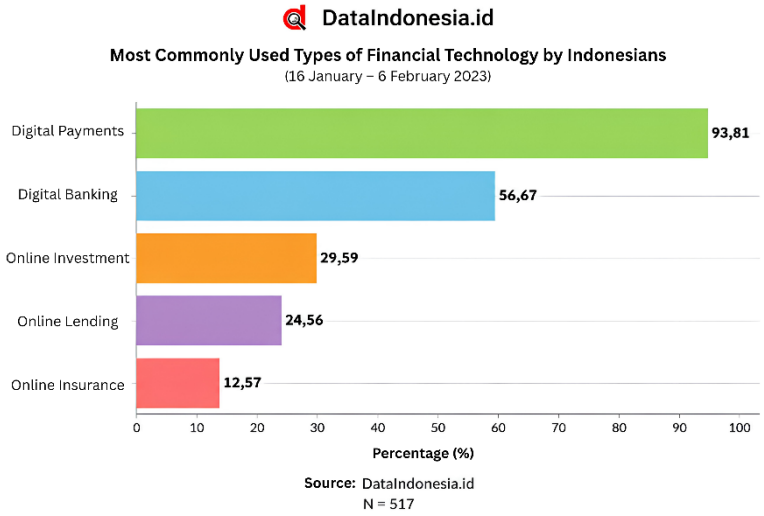


**Figure 2. Number of Frequently Used Financial Technology Types**
Source: DataIndonesia.id

Furthermore, based on the types of financial technology most frequently used by the Indonesian public, as shown in figure 2, it is evident that digital payments are the most popular fintech service compared to others. The high uptake of digital payments indicates that Indonesians are becoming increasingly accustomed to using technology for their day-to-day financial transactions.

Technological advancements have become one of the key factors driving economic growth and transforming the structure of various business sectors, including the Micro, Small and Medium Enterprises (MSME) sector (Ndraha et al., 2024). MSME operators are beginning to adapt to various changes, moving away from a system dominated by cash payments towards the rapidly growing world of digital payments. In line with the view by Pradani and Puspita (2025) the intense competition in the digital business sector is driving SMEs to adapt, as this has become a key factor in maintaining and improving business performance.

SME operators, particularly Madura shops, are currently facing challenges in running their businesses, especially in providing fast service and meeting the diverse needs of customers. One of the main challenges is improving transaction efficiency so that the buying and selling process runs more smoothly, as well as ensuring customer satisfaction to maintain loyalty. Furthermore, there are differences in customers' payment habits; some customers are accustomed to using digital payments, whilst others still prefer non-digital or cash payments.

A fast payment system plays a significant role in enhancing customer satisfaction, as it is closely linked to the customer experience. In buying and selling, customers judge not only the product they purchase but also how the process unfolds. When the payment system operates quickly, customers do not have to wait long; thus, a swift transaction process makes customers feel they are being served without wasting time. A slow payment system can also cause inconvenience, indicating that speed and efficiency directly impact customer decisions and satisfaction.

For SME operators, the availability of both digital and non-digital payment methods also influences transaction efficiency and customer satisfaction. The use of digital payment systems, for example, research conducted by Amanda et al. (2025) shows that the use of digital payments can help businesses reduce operational costs and improve transaction efficiency. The implementation of digital payment systems also has an impact on customer satisfaction (Putra et al., 2023). Digital payment systems enable faster, safer and more convenient transactions. They can also be processed automatically, unlike non-digital payment methods. The introduction of these systems represents an adaptation by SMEs to keep pace with technological advancements and changes in the habits of modern society. Overall, technological advancements are encouraging SMEs to adopt digital payments, which holds great potential for facilitating the growth of SMEs in Indonesia. Through the implementation of digital payments, SMEs can enhance customer loyalty by providing an efficient and secure transaction experience. Digital payments offer significant benefits to SMEs; however, the majority of SMEs have yet to adopt digital payment systems (Susanti et al., 2025).

Although the use of digital payments offers a range of benefits, the reality is that many people still prefer non-digital payment methods over digital ones. This indicates that the use of digital payments in Indonesia has yet to reach its full potential across all sections of society. Although the benefits of technology for SMEs are widely recognised, in practice there are still many SMEs that have not yet adopted digital payment systems. Low digital literacy among SME operators is one of the main factors hindering the uptake of digital transactions (Mendrofa et al., 2025). Furthermore, many SMEs still lack technological knowledge and consequently continue to opt for cash payments (Lestari et al., 2023).

Although technological advances have brought about various innovations in payment systems, non-digital payments remain the most commonly used method among the public. Research conducted by Hanim and Syihabuddin (2025) also show that although digital payments are widely used, non-digital or cash payments remain the most common method for small-value transactions. Cash payment systems offer small business owners the convenience of completing transactions quickly without complicated procedures. Although an increasing number of people are now switching to digital payments, non-digital payments continue to play a vital role in ensuring the smooth flow of transactions. Non-digital payments are still regarded as a practical, easy-to-understand means of payment that can be used without relying on technological devices.

In practice, this situation is caused by a lack of understanding among SME operators regarding digital technology, including how digital payment systems work (Mendrofa et al., 2025). Many SMEs still lack technological knowledge and consequently choose to continue using cash (Mursalini et al., 2023). Although some MSME operators have switched to digital transaction systems, this has not entirely hampered their economic activities. MSMEs continue to adapt by providing non-digital payment options for those who are not yet familiar with technology. This approach demonstrates the flexibility of SMEs in serving different generations, thereby maintaining customer loyalty.

Given these circumstances, the author believes that providing payment methods tailored to customer characteristics is a crucial step for SMEs in maintaining service quality and customer loyalty. Therefore, research is needed to gain a clear understanding of the strengths and limitations of each payment method. This study aims to analyse and compare the use of digital and non-digital payment systems in SMEs, as well as their impact on transaction efficiency and customer satisfaction. The results of this study are expected to provide insights for SME operators in determining the appropriate payment strategy in line with business needs and customer characteristics.

## 2. Literature Review

### 2.1. Small and Medium-sized Enterprises (SMEs)

Small, Medium, and Micro Enterprises (SMEs) represent one of the sectors that receives primary attention in building the economy across various regions. This is due to the significant contribution of SMEs to the economy and the social welfare of the community (Susanti et al., 2025). Small, Medium, and Micro Enterprises (SMEs) are enterprises that play an important role in the economy. The development of micro enterprises in Indonesia is the most strategic step in strengthening the Indonesian people's economy. A strong economy derives from the large number of micro enterprises existing in a country. The large number of micro enterprises developing in a country will ensure the country's ability to address the economic needs of its society (Triningsih, 2024).

Small, Medium, and Micro Enterprises have varying definitional boundaries and criteria. SMEs have definitional boundaries covering three types of enterprises in accordance with Law No. 20 of 2008, defined as follows:

a) Micro Enterprises are productive enterprises owned by individuals or individual business entities.
b) Small Enterprises are productive economic enterprises that operate independently, carried out by individuals or business entities that are not subsidiaries or branches of medium or large enterprises, either directly or indirectly.

c) Medium Enterprises are productive economic enterprises that operate independently, carried out by individuals or business entities that are not subsidiaries or branches of small or large enterprises, either directly or indirectly.

SMEs play a strategic role in national economic development, owing to their large contribution to job creation, innovation enhancement, and the provision of goods and services needed by society (Efilia et al., 2024). The diversity of SME characteristics is reflected in the breadth of business sectors they engage in, encompassing agriculture, industry, and services, all of which contribute to driving the economy across various layers of society.

The strategic role of SMEs in the economy makes service quality improvement an important aspect to consider. Along with the advancement of digital technology, SMEs also face demands to adapt to various innovations in their operational activities, including in the payment system. The use of digital payment methods such as QRIS, digital wallets, and mobile banking is one of the efforts that can improve transaction efficiency and provide convenience for customers. However, not all SME operators are able to adopt digital payment systems optimally due to various obstacles, such as limited technological knowledge. This condition has caused some SMEs to continue using non-digital payment systems in their business activities.

## 2.2. Payment System

Payment systems are a vital component of the global economy; they play a key role in ensuring the smooth flow of payments used by businesses and the general public (Alfiana et al., 2024). In the payment system, there are two types of payment instruments: digital and non-digital.

### 2.2.1. Digital Payment Systems (Cashless)

Payment systems in Indonesia are now evolving in line with technological advances (Hendrawan et al., 2023). Digital payments are a method that uses mobile technology for payments, transfers or other transactions. Advances in payment technology have reduced the role of cash as a means of payment, replacing it with cashless or digital payments, which are more efficient and cost-effective (Bowo, 2023). Digital payments are transactions that use electronic money within a digital platform (Tarantang et al., 2019).

By using digital payments, there is no need for cash or face-to-face meetings when making transactions. Digital payments can be made via electronic devices using specialised apps designed to facilitate digital transactions. Payment systems are constantly evolving, and payment service providers are becoming increasingly innovative in offering a range of payment alternatives using secure, fast and efficient technology that operates on a global scale.

### 2.2.2. Non-digital Payment Systems (Cash)

A non-digital payment system is a payment system that uses physical currency (banknotes and coins) as a means of payment. This is the most common form of conventional payment in economic activities, where transactions between sellers and buyers take place directly. In this system, payments are made face-to-face without the use of digital technology. Non-digital or cash payment systems are widely chosen for their convenience. They are considered easy and practical as they do not require an internet connection. Cash payments are the simplest and most direct method of transacting, whereby the buyer can immediately receive the goods or services, and the seller receives the money as payment. Cash payments are the simplest and most direct method of transacting. The money is handed over as payment, and the transaction is considered complete once the payment has been made.

### 2.3. Transaction Efficiency

Transaction efficiency refers to the ability of a value exchange process to use as few resources as possible without compromising the quality of the transaction outcome. Transaction efficiency reflects how effectively a payment system or method is able to speed up the process. The objectives of transaction efficiency include, among others, ensuring transactions proceed smoothly as intended, speeding up the transaction process to save time, making the most of all elements involved so that nothing is wasted, improving quality and performance to maximize transaction outcomes, and optimizing the quality of transactions for the benefit of customers.

### 2.4. Customer Satisfaction

Customer satisfaction occurs when a customer's needs and expectations regarding a product or service are met through the service provided. Satisfaction stems from the quality of the products and services received, thereby resulting in customer satisfaction in terms of the fulfilment of their needs. In line with the view by Hamzah and Pratiwi (2025), Customer satisfaction is one of the keys to success; it reflects consumers' acceptance of a product or service and can foster positive loyalty and business growth. Furthermore, customer satisfaction is achieved when the service provided meets or exceeds consumers' expectations (Sahabuddin et al., 2024). Customer satisfaction has a significant impact on business growth. Customers who receive high-quality service and feel satisfied are more likely to become loyal customers of that business (Setiawati, 2021). High levels of customer satisfaction typically encourage customer loyalty and increase the likelihood of repeat purchases.

## 3. Methods

This study employs a qualitative method with a phenomenological approach. This approach was chosen because the study focuses on experiences, perspectives, and meanings that are directly felt (Hasan et al., 2025). The subjects of this study are operators of Madura shops in Denpasar City. Informant selection was carried out in accordance with business operators who use digital and non-digital payment methods. The selection of Madura shops as the research location is based on the diverse characteristics of their payment system use. Some Madura shops have implemented digital payments, while others continue to maintain cash payments. This condition provides a relevant context for comparing the use of both payment methods in daily business activities. The study was conducted to obtain a real picture of the use of both payment methods and their effects on transaction efficiency and customer satisfaction.

Data were obtained through three data collection techniques, namely interviews with a number of users of digital and non-digital payment methods. Interviews were conducted directly using open-ended question guides to explore experiences and perspectives in depth. Additional information was also supported by direct observation in the field, particularly at business locations that provide digital and non-digital payments. Observation was carried out by directly observing the transaction process and payment activities at those locations. Documentation was also used as supporting data in the form of visual evidence during the study.

The research procedure was carried out in stages. The first stage involved determining the research location and selecting informants in accordance with the research focus. The second stage involved data collection through interviews, observation, and documentation. The third stage involved grouping and analyzing data based on research themes, encompassing factors of payment method use, transaction efficiency, and customer

satisfaction. Subsequently, the collected data were selected and compared to identify patterns and meanings from the informants' experiences.

The research results were measured and evaluated through a thematic analysis process by comparing findings from interviews, observation, and documentation. Data validity testing was conducted using time triangulation, namely data checking through information collection at different times to observe the consistency of responses and the conditions observed. This technique was used so that the data obtained are more accurate, stable, and capable of describing the actual conditions regarding the use of digital and non-digital payments in SMEs and their effects on transaction efficiency and customer satisfaction.

Nevertheless, this study was conducted only on Madura shop SMEs in Denpasar City, so the findings cannot yet be generalized to all SMEs in Indonesia. The research findings more accurately describe the conditions and experiences of business operators within the context of the location and type of enterprise studied. Therefore, future research is recommended to involve more diverse types of SMEs and regions in order to obtain a broader understanding of the use of digital and non-digital payment systems.

# 4. Results and Discussion

## 4.1. Research Results

This study was conducted amongst MSME operators to understand the use of digital and non-digital payment methods and their impact on transaction efficiency and customer satisfaction. It employed a qualitative approach centered on interviews, observation and documentation. This study was able to explore the direct experiences of SME operators in using the payment methods they employ on a daily basis. The results indicate that the use of payment methods among SMEs is influenced by business conditions, customer characteristics, and the operators' level of technological understanding.

### 4.1.1. Interview results

The interviews were conducted in person with two informants who use both digital and non-digital payment methods among MSME operators, yielding the following information. Regarding the factors driving the use of digital and non-digital payment methods, the first informant stated that: *"Digital payments are more convenient, faster, and can be adapted to the habits of customers who are accustomed to using technology."* The second informant stated that: *"Due to a lack of understanding of technology, cash payments are chosen because they are considered easier and safer."* The interview results show that the choice of payment method among MSME operators is influenced by technological developments, user convenience, and their level of technological understanding.

Regarding transaction efficiency, the first informant stated that: *"Digital payments are faster and automatic, so there is no need to prepare change, thereby improving transaction efficiency."* The second informant stated that: *"Non-digital payments are not always quick; payment delays depend on the customer's shopping situation, and the process takes longer because change has to be calculated and prepared manually."* The interview results indicate that digital payments are considered more effective at improving transaction efficiency, as the process is automated and payments can be made more quickly without the need to prepare change. Meanwhile, non-digital payments are considered to take longer, as the transaction process still relies on manual cash counting.

Regarding customer satisfaction, the first informant stated that: *"Digital payments can increase customer satisfaction among the younger generation, as they align with their technological habits. However, this is limited to customers who are less tech-savvy and continue to use cash. Therefore, providing both digital and non-digital payment methods can satisfy all customer segments."* The second informant stated that: *"Customers who are accustomed to using cash still feel comfortable and their satisfaction is met, so this works well. Although there are some customers who are accustomed to using digital methods, their satisfaction is sometimes not met."* The interview results indicate that customer satisfaction with payment methods is not always consistent, as each customer has different transaction habits and preferences. Consequently, the simultaneous use of both payment methods is considered more effective in catering to a wide range of customer profiles and maintaining overall customer satisfaction.

### 4.1.2. Results of the Observation

Based on the results of research conducted with the aim of gathering data and seeking information on all matters relating to digital and non-digital payments, which will subsequently serve as the subject matter and focus of the study, the observations carried out yielded the required data. These include the payment transaction process carried out by customers, the type of payment method used, and the queue situation when making a payment. Through this observation, the researchers gained a clear picture of how payment methods are used in everyday life.

### 4.1.3. Documentation Results

Documentation techniques are used in data collection to supplement the data obtained from interviews and observations. Documentation is carried out by the researcher to gather various pieces of evidence relating to field research activities. The types of documentation collected include:

**Figure 3. The Payment Transaction Process and Evidence of Digital and Non-Digital Payment Use at the Research Site**

Figure 3 shows the differences in transaction mechanisms used by SME operators and customer habits, namely digital payments and non-digital payments. Both images show transactions conducted through digital devices that allow the payment process to take place electronically. Meanwhile, in the other, transactions are still carried out in cash through the direct exchange of money between customers and sellers.

**Figure 4. Queue Conditions When Making a Non-Digital Payment**

Figure 4 shows the transaction atmosphere at SMEs still dominated by cash payments. During busy customer conditions, the cash payment process has the potential to cause service delays because business operators must check the monetary denomination and prepare change. This observation finding is align with the interview findings, which indicate that the cash payment system tends to require longer transaction times compared to digital payments.

## 4.2. Discussion

### 4.2.1. Factors Driving the Use of Both Digital and Non-Digital Payment Methods

Based on the research findings, the use of digital and non-digital payment methods reflects differing perspectives and considerations in their selection. Regarding digital payment use, the findings indicate that the factor driving SME operators to develop various business strategies is the need to adapt to technological developments and changing customer habits. This finding is consistent with the theory of Harahap et al. (2026), which explains that technological advancement and behavioral changes drive adaptation to more modern payment systems in order to meet the diverse and continuously evolving needs of customers, particularly the younger generation accustomed to using technology. These changes encourage SME operators to adapt to technology in order to continue meeting customer expectations and providing services that align with customer needs, thereby remaining relevant and competitive (Fajriah, 2025). Digital payments are also considered capable of providing convenience, accelerating the payment process, and improving transaction efficiency (Hanafi, 2026), thus facilitating both business operators and customers, as transactions can be completed without preparing cash or change, allowing transactions to proceed more quickly. The readiness of SME operators to use digital payments has emerged due to technological advancement and customer habits that drive a shift toward more practical and modern payment systems.

However, the research findings indicate that digital payment use has not fully become a primary need for all SME operators. Effendy and Sunarsi (2020) states that digital payment systems can provide a digital SME platform facility, yet digital payment systems are not always seamless because not all SME operators are ready to accept valid payments in digital currency. This difference in perspective is evident in the findings of this study, where some SME operators have regarded digital payments as an important means of meeting customer needs, while others still consider digital payments merely as supplementary facilities and not yet an urgent necessity. This condition is thought to be influenced by business characteristics, business scale, and the customer profile still dominated by SME operators who continue to use non-digital payments.

Meanwhile, the use of non-digital payments is still maintained by some SME operators. The findings indicate that the driving factor in choosing non-digital payments is the absence of a perceived urgent need to use digital payments. SME operators indicate that non-digital payments are considered simpler, safer, easier to use, and require no additional applications or devices. This shows that ease of use is the primary reason for maintaining the cash payment method. In addition, the driving factor is also based on concerns about transaction errors in digital systems and a lack of technological knowledge and skills (Ruisli et al., 2024). These are among the reasons why SME operators have yet to adopt digital payment methods. Nevertheless, the findings of this study indicate that the reasons for maintaining cash payments are not solely attributable to low digital literacy, but also to the characteristics of customers who are still accustomed to conducting transactions directly using cash. In this study, the factor of customer preference has emerged as one of the important considerations influencing SME operators' decisions to maintain non-digital payment systems.

From the research findings and field observations, the comparison of both perspectives regarding the factors driving SME operators in their choice of payment system is influenced by the readiness of SME operators, their level of trust in technology, and the characteristics of the customers they serve. Digital payments are more effective in terms of speed, offer greater convenience, and improve transaction efficiency and customer satisfaction (Ekaputra et al., 2024). However, the benefits of digital payments are more strongly felt by customers accustomed to using technology. Conversely, non-digital payments are still considered more appropriate for SME operators accustomed to conducting transactions directly without technology. Therefore, the findings of this study indicate that the effectiveness of a payment method is not solely determined by technological advancement, but also by its compatibility with the business conditions faced by SME operators.

### 4.2.2. The Impact of Digital and Non-Digital Payments on Transaction Efficiency

Based on the research findings, differences in the payment methods used by each business operator indicate variations in the level of transaction efficiency experienced directly in the field. The findings from SME operators show that the use of digital payments is capable of accelerating the transaction process, providing payment convenience, improving transaction security, and creating greater time efficiency. This finding is consistent with the research of Pangestika et al. (2025), which states that digital payments are capable of accelerating the transaction process, are easier to use, provide payment security, and achieve greater time efficiency. This indicates that digital payments have an advantage in terms of efficiency, as the process is carried out automatically without the need to prepare cash or change within a short time. Digital payments also constitute one of the components through which their use can reduce customer queuing time (Sabrina et al., 2026). This condition is consistent with the theory of transaction efficiency objectives, namely accelerating the process, saving time, and creating convenience. This indicates that the faster the payment process, the more efficient the service provided to customers, whether in quiet or busy conditions.

Nevertheless, the findings of this study do not fully align with the view that digital payments are always more effective than non-digital payments. Juliandhani (2022) found that there is no significant difference in effectiveness between digital and non-digital payments. Although digital payments offer various conveniences and can provide good efficiency effectiveness, non-digital payments are not always synonymous with inefficiency; rather, their effectiveness depends on the characteristics of the transaction and customer needs. This finding offers a perspective that differs from some prior studies that place greater emphasis on the superiority of digital payments over non-digital payments. Under conditions of simple

transactions and a relatively small number of customers, non-digital payments can still be conducted quickly and smoothly. Therefore, transaction efficiency is not solely determined by the type of payment method used, but is also influenced by business conditions and customer characteristics.

The findings from SME operators still using non-digital or cash payments indicate that they do not always provide the same level of efficiency under every condition. This shows that non-digital payments are inconsistent; for small purchase quantities, transactions can proceed quickly. However, they tend to take longer when purchase quantities are larger or when the shop is busy. One of the factors affecting the length of transactions is that the process must go through cash calculation and change preparation that must be carried out manually. Consequently, the use of a manual system that is not integrated can hinder service and cause customers to feel neglected (Haikal et al., 2025). This condition arises because non-digital payments require careful attention to avoid errors (Wibisana, 2025), which becomes the primary factor causing transactions to be somewhat slow. This indicates that non-digital payments are less efficient when used under high transaction volume conditions and thus fall short of meeting the principles of efficiency.

Ultimately, comparing both perspectives, it can be seen that digital payments have a greater advantage in improving transaction efficiency compared to non-digital payments. Digital payments are capable of accelerating and stabilizing the transaction process and reducing queues. Meanwhile, non-digital payments can still be used effectively under certain conditions, particularly for simple transactions and low transaction volumes, but tend to be less efficient as customer numbers increase. Therefore, from the perspective of time efficiency, digital payments are considered more effective in supporting transaction efficiency.

### 4.2.3. The Impact of Digital and Non-Digital Payment Methods on Customer Satisfaction

Based on the research findings with SME operators, it is known that the level of customer satisfaction is influenced by the habits and characteristics of each customer in conducting transactions. This finding is consistent with the research of Sangapan et al. (2025), which states that customer satisfaction is strongly influenced by habits and is adjusted to the individual characteristics of the customers being served. Customer satisfaction is highly dependent on the payment system available and its alignment with the habits of customers who come to shop.

SME operators consider digital payments to be an important factor in improving customer satisfaction, particularly among the younger generation who are accustomed to conducting digital transactions in line with their habits. This condition arises because digital payments are easier, faster, and more comfortable for transactions, without the need to carry cash, allowing transactions to be completed practically. This condition is consistent with the theory that customer satisfaction is influenced by service quality and speed of service (Sopiawadi et al., 2026). This has a positive impact and can improve customer satisfaction by fulfilling the payment method that aligns with their needs and habits.

However, the finding of Astono (2024) states that the presence of digital payments does not automatically improve the satisfaction of all customers, particularly those who are not yet accustomed to using digital technology. This finding offers a perspective that differs from some prior studies that tend to position digital payments as a factor in improving customer satisfaction. This study found that for customers of older generations or those not yet accustomed to using technology, digital payments have no effect on their satisfaction. This is consistent with the theory that dissatisfaction can arise when the service provided does not match the expectations or capabilities of the customer (Lubis & Rahmadi, 2026). The presence

of digital payments does not automatically improve customer satisfaction across all age groups and is only effective for those accustomed to using them.

The research findings from SME operators indicate that maintaining customer satisfaction across all age groups requires more than providing a single payment method; it requires offering two payment methods simultaneously. This shows that providing more than one payment method can have a positive impact in improving overall customer satisfaction to meet diverse customer needs. In the context of this study, customer satisfaction is more optimal when customers are given the freedom to choose the payment method that suits their needs and habits. By providing both payment methods, business operators can accommodate customers from various age groups and digital literacy levels.

On the other hand, SME operators who only provide non-digital or cash payments indicate that customer satisfaction becomes limited to specific customer groups. For older-generation customers accustomed to using non-digital payments due to limited understanding of technology, this does not pose a problem and can still provide general customer satisfaction in transactions. SME operators also highlight the constraint that limited digital payment methods can cause dissatisfaction among some customers.

Thus, comparing the use of both payment methods reveals that no single payment method can be considered the most superior for all customers. Unlike some literature that emphasizes the superiority of digital payments in improving customer satisfaction, this study finds that the level of customer satisfaction is more strongly influenced by the compatibility of the payment method with the characteristics and habits of customers. Therefore, the most appropriate step for SMEs is to provide both payment methods by combining digital and non-digital payments simultaneously. This approach enables business operators to serve all types of customers, both those accustomed to using technology and those still comfortable with cash, thereby improving customer satisfaction and maintaining customer loyalty.

## 5. Conclusion

After conducting comprehensive research and discussion, it can be concluded that the use of payment systems has a different effect on SME performance, particularly in transaction efficiency and customer satisfaction. Digital payments are proven to be superior in accelerating the payment process as they are carried out automatically without requiring manual calculation, while non-digital payments require more time and demonstrate an inconsistent level of efficiency influenced by customer volume and purchase quantity. In terms of customer satisfaction, no single payment method is entirely superior for all conditions. Digital payments are more capable of satisfying customers accustomed to using technology, while non-digital payments continue to provide comfort for customers accustomed to transacting directly and less familiar with technology. Consequently, customer satisfaction tends to depend on individual habits, so neither payment method can improve satisfaction across all groups; rather, customer satisfaction is limited to specific customer groups. The contribution of this study provides an understanding that the success of a payment system implementation is not solely determined by technological advancement, but by customer characteristics and the readiness of business operators.

This study contributes by providing empirical evidence from Madura shop SMEs in Denpasar City regarding the implementation of digital and non-digital payment systems. The research findings indicate that although digital payments are superior in improving transaction efficiency, non-digital payments remain necessary to serve certain customers. The novelty of this study lies in the finding that the effectiveness of a payment system is not only

determined by technological advancement, but also by customer characteristics, transaction habits, and the readiness of business operators to adopt payment technology.

Therefore, the implications of this study indicate that SME operators need to provide diverse payment alternatives in order to improve service quality. This enables business operators to serve various customer characteristics, thereby improving transaction efficiency while maintaining overall customer satisfaction. This study has limitations as it was conducted only on some SMEs in Denpasar City with a limited number of informants, so the findings cannot be broadly generalized to the entire SME sector. Future research is recommended to involve a greater number of informants, encompassing various types of SMEs and different regions, in order to obtain broader findings regarding the effect of payment systems on SME performance.

## 6. References

Adelia, H. O. P., Nurjannah, R., Sari, C. P., & Panorama, M. (2025). Daya Saing Usaha Kecil dan Menengah (UMKM) di Bidang Kuliner di Era Digital dengan Pemanfaatan QRIS. *Indonesian Journal of Islamic Economics and Business*, *10*(1), 149–161. https://doi.org/10.30631/qsyxrd88

Alfiana, Y., Veronica, A., Yanti, D., & Winarsih, W. (2024). Sistem Pembayaran Tunai Dan Non Tunai Pada PT. Kedamaian. *Jurnal Media Akuntansi (Mediasi)*, *6*(2), 189–201. https://doi.org/10.31851/jmediasi.v6i2.15009

Amanda, A. Y., Fatichah, Z., Nazila, W., Rahmadi, Z. T., & Dharma, D. A. (2025). Pelatihan Optimalisasi Pembayaran dengan Menggunakan Aplikasi untuk Meningkatkan Efisiensi pada UMKM. *Puan Indonesia*, *7*(1), 209–218. https://doi.org/10.37296/jpi.v7i1.363

Astono, A. D. (2024). Account for the Role of Digital Literacy and Behavior Intention on Electronic Payment and Its Impact on Customer Satisfaction. *Communications on Applied Nonlinear Analysis*, *32*(3), 605–617. https://doi.org/10.52783/cana.v32.2072

Bowo, F. A. (2023). Penguatan UMKM Melalui Pembayaran Digital: Strategi Digital Marketing dalam Era Baru. *Jurnal Studi Interdisipliner Perspektif*, *22*(2), 134–140. https://ejournal-jayabaya.id/Perspektif/article/view/110

Effendy, A., & Sunarsi, D. (2020). Persepsi Mahasiswa Terhadap Kemampuan dalam Mendirikan UMKM dan Efektivitas Promosi Melalui Online di Kota Tangerang Selatan. *Jurnal Ilmiah Manajemen, Ekonomi & Akuntansi (MEA)*, *4*(3), 702–714. https://doi.org/10.31955/mea.v4i3.571

Efilia, R. Y., Putri, S. A., Riskiyana, S., Azizah, A. N., & Saridawati. (2024). Peran UMKM dalam Meningkatkan Perekonomian di Indonesia. *Jurnal Penelitian Ilmiah Multidisiplin*, *8*(10), 217–225. https://sejurnal.com/pub/index.php/jpim/article/view/5760

Ekaputra, P. S., Ciptosari, F., & Halim, T. (2024). Adopsi Teknologi Pembayaran Digital QRIS di Kalangan UMKM Labuan Bajo: Tantangan dan Peluang. *Jurnal Akademisi Vokasi*, *3*(2), 1–13. https://doi.org/10.63604/javok.v3i2.138

Fahrudin, F., & Isnaini, P. L. (2023). Pengaruh Penggunaan Quick Response Code Indonesian Standard (QRIS) Oleh UMKM Terhadap Pendapatan Usaha. *Jurnal Manajemen Stratejik Dan Simulasi Bisnis*, *4*(1), 1–11. https://doi.org/10.25077/mssb.4.1.1-12.2023

Fajriah, Y. (2025). Strategi Adaptasi UMKM Terhadap Perubahan Tren Konsumen di Era Digita. *Jurnal Economina*, *4*(1), 1–8. https://doi.org/10.55681/economina.v4i1.1522

Haikal, A. A., Wijaya, A., Putri, M. D., & Niska, D. Y. (2025). SmartCanteen: Sistem Pemesanan dan Pembayaran Digital Kantin Berbasis Web untuk Meningkatkan Efisiensi dan Kenyamanan Pelanggan. *STORAGE: Jurnal Ilmiah Teknik Dan Ilmu Komputer*, *4*(4), 414–424. https://doi.org/10.55123/storage.v4i4.6822

Hamzah, M., & Pratiwi, M. P. (2025). Pengaruh Inovasi Produk dan Kualitas Pelayanan

Terhadap Kepuasan Pelanggan King Geprek Sumberanyar. *RIGGS: Journal of Artificial Intelligence and Digital Business*, *4*(3), 1661–1669. https://doi.org/10.31004/riggs.v4i3.2199

Hanafi, A. E. (2026). Analisis Penggunaan QRIS sebagai Metode Transaksi Pembayaran Digital di Kota Metro. *RIGGS: Journal of Artificial Intelligence and Digital Business*, *5*(1), 8679–8685. https://doi.org/10.31004/riggs.v5i1.7245

Hanim, J. F., & Syihabuddin, M. (2025). Analisis Dampak Sistem Pembayaran Tunai terhadap Kepuasan Konsumen di SPBU Mart Sumber Surakarta. *RIGGS: Journal of Artificial Intelligence and Digital Business*, *4*(4), 3005–3011. https://doi.org/10.31004/riggs.v4i4.3969

Harahap, L. M., Nuraina, A. L., Kartika, R., Zuhra, N., Manurung, I. S., & Irfandi, M. (2026). Strategi Adaptasi UMKM dalam Menghadapi Perubahan Perilaku Konsumen di Era Ekonomi Digital. *Jurnal Ilmiah Ekonomi Dan Manajemen (JIEM)*, *4*(4), 122–135. https://doi.org/10.61722/jiem.v4i4.9318

Hasan, H., Fajriati, F., Kuncoro, D. S., Sunarsih, U., & Mais, R. G. (2025). Penerapan Transaksi Uang Elektronik Dalam Meningkatkan Penerimaan Pajak Di Indonesia. *RIGGS: Journal of Artificial Intelligence and Digital Business*, *4*(2), 1323–1331. https://doi.org/10.31004/riggs.v4i2.667

Hendrawan, M. R. N. A., Marits, S. A., & Herman, S. (2023). Development of Digital Payment Systems in Indonesia. *Jurnal Ilmiah Manajemen Kesatuan*, *11*(3), 1335–1344. https://jurnal.ibik.ac.id/index.php/jimkes/article/view/2328

Juliandhani, A. F. (2022). Comparative Analysis of the Effectiveness of Cash Payment and QRIS Payment. *International Journal Administration, Business & Organization*, *3*(1), 53–60. https://doi.org/10.61242/ijabo.22.335

Lestari, D., Sudiyanto, T., & Emilda, E. (2023). Analisis Prediksi Kebangkrutan Pada PT. Elnusa Tbk Menggunakan Model Altman Ohlson dan Zmijewski yang Terdaftar di Bursa Efek Indonesia. *ECo-Buss*, *6*(2), 668–675. https://doi.org/10.32877/eb.v6i2.869

Lubis, A. L., & Rahmadi. (2026). Strategi Kewirausahaan dalam Pembentukan Persepsi Nilai Layanan Sarapan Hotel Resort NWN Berbasis Ulasan Tamu. *Jurnal Mekar*, *5*(1), 10–19. https://doi.org/10.59193/jmr.v5i1.507

Maharani, N. P., Saputri, M. I., & Suhatmi, E. C. (2025). Transformasi Sistem Pembayaran di Era Society 5.0. *Prosiding Seminar Nasional Hukum, Bisnis, Sains Dan Teknologi*, *5*(1), 618–624. https://ojs.udb.ac.id/HUBISINTEK/article/view/4427

Mendrofa, L., Zendrato, B., & Zai, I. (2025). Pengaruh Digitalisasi Pada Peningkatan Efisiensi Operasional Usaha Mikro, Kecil, dan Menengah (UMKM) di Indonesia Tahun 2023. *Jurnal Ilmu Ekonomi, Pendidikan Dan Teknik*, *2*(1), 100–108. https://doi.org/10.70134/identik.v2i1.251

Mursalini, W. I., Putri, D. R. O., & Nasrah, R. (2023). Analisis Prediksi Kebangkrutan Menggunakan Model Springate (S-Score) Pada Perusahaan Sub Sektor Ritel Di Bursa Efek Indonesia 2016-2020. *GEMILANG: Jurnal Manajemen Dan Akuntansi*, *3*(1), 1–20. https://doi.org/10.56910/gemilang.v3i1.297

Ndraha, A. B., Zebua, D., Zega, A., & Zebua, M. K. (2024). Dampak Ekonomi Digital Terhadap Pertumbuhan UMKM di Era Industri 4.0. *Jurnal Ilmu Ekonomi Dan Bisnis*, *1*(1), 27–32. https://doi.org/10.70134/jukoni.v1i1.23

Pangestika, Z. N., Putri, D. K., Angelica, S. F., Nuryana, I., & Nihayah, D. M. (2025). Systematic Literature Review: Persepsi Penggunaan QRIS Sebagai Peningkatan Efektivitas Alat Pembayaran dan Sistem Keuangan Digital. *Jurnal Pendidikan Ekonomi (JUPE)*, *13*(2), 103–115. https://doi.org/10.26740/jupe.v13n2.p103-115

Pradani, R. F. E., & Puspita, W. (2025). Pengaruh Penggunaan Media Sosial TikTok sebagai Media Promosi Online terhadap Peningkatan Penjualan Produk Fashion pada Toko Baju Adzkiya Maron. *RIGGS: Journal of Artificial Intelligence and Digital Business*, *4*(2), 2138–2142. https://doi.org/10.31004/riggs.v4i2.817

Putra, T. W. A., Solechan, A., & Hartono, B. (2023). Transformasi Digital Pada UMKM Dalam Meningkatkan Daya Saing Pasar. *Jurnal Informatika Upgris*, *9*(1), 7–12. https://doi.org/10.26877/jiu.v9i1.15096

Ruisli, M., Hardini, M., Ayu Sanjaya, Y. P., Padeli, & Agustian, H. (2024). Exploring Key Factors Driving QR Payment Adoption in Digital Banking in Indonesia. *2024 12th International Conference on Cyber and IT Service Management (CITSM)*, 1–5. https://doi.org/10.1109/CITSM64103.2024.10775738

Sabrina, L., Inayah, N., & Syahbudi, M. (2026). QRIS Dan Fenomena Cashless Society: Efisiensi Pembayaran Digital Terhadap Perspektif Gen Z. *Owner*, *10*(1), 509–526. https://doi.org/10.33395/owner.v10i1.3042

Sahabuddin, R., Arif, H. M., Nurfatimah, I., Atirah, R., Nengsia, S., & Rahmayani, S. N. (2024). Fintech dan Kepuasan Pelanggan: Menggali Peran Kemudahan Transaksi Melalui QRIS Sebagai Variabel Intervening di Warung Sari Laut Mas Joko Kota Makassar. *Jurnal Ilmu Manajemen, Bisnis, Dan Ekonomi*, *2*(1), 61–70. https://doi.org/10.59971/jimbe.v2i1.275

Sangapan, L. H., Manurung, G., & Manurung, A. H. (2025). Analisis Strategi Personalisasi Layanan Dalam Meningkatkan Loyalitas Pelanggan. *Journal of Strategic and Human Resources (JSHR)*, *1*(1), 11–25. https://journal.adlermanurungpress.com/index.php/jshr/article/view/9

Setiawati, T. (2021). The Effect of Service Quality and Delivery Service on Consumer Satisfaction at Pizza Hut Paramount Bintaro Branch. *Kontigensi: Jurnal Ilmiah Manajemen*, *9*(2), 481–490. https://doi.org/10.56457/jimk.v9i2.193

Siddiqi, M. F., Masruro, U., Azizah, D. U., & Syifaiyah, Y. (2025). Pendampingan Teknologi Digital dengan Pengembangan Sistem Pembayaran QRIS sebagai Solusi Praktis bagi Pelaku UMKM Kota Probolinggo. *Jurnal Pengabdian Masyarakat Bhinneka*, *4*(2), 1101–1108. https://doi.org/10.58266/jpmb.v4i2.610

Simangunsong, M. M., & Simanjorang, F. (2025). The Influence of Perceived Ease of Use and Perceived Risk on the Decision to Use the GoPay Application in Medan City. *Jurnal Ekonomi Kreatif Dan Manajemen Bisnis Digital*, *3*(3), 343–356. https://doi.org/10.55047/jekombital.v3i3.910

Sopiawadi, M., Naifah, Z., & Mentari, N. P. (2026). Analisis Strategis Implementasi Kualitas Pelayanan Terhadap Kepuasan Pelanggan pada UMKM Barber Shop Knockout Subang. *Abdi Cendekia: Jurnal Pengabdian Masyarakat*, *5*(1), 584–595. https://doi.org/10.61253/abdicendekia.v5i1.530

Susanti, M., Aqidah, N., & Rahman, M. A. (2025). Analisis Persepsi Pelanggan pada Penggunaan QRIS sebagai Alat Transaksi UMKM di Kota Probolinggo. *Jurnal Tabarru': Islamic Banking and Finance*, *8*(1), 105–112. https://doi.org/10.25299/jtb.2025.vol8(1).22508

Tarantang, J., Awwaliyah, A., Astuti, M., & Munawaroh, M. (2019). Perkembangan sistem pembayaran digital pada era revolusi industri 4.0 di indonesia. *Jurnal Al-Qardh*, *4*(1), 60–75. https://doi.org/10.23971/jaq.v4i1.1442

Triningsih, W. I. (2024). *Implementasi Sistem Pembayaran QRIS Pada UMKM (Studi Di Bank Muamalat Indonesia KCP Metro)*. IAIN Metro.

Utami, N. (2024). Transformasi Digital Usaha Mikro Mendukung Ekonomi Digital. *JPEK (Jurnal Pendidikan Ekonomi Dan Kewirausahaan)*, *8*(3). https://doi.org/10.29408/jpek.v8i3.25796

Wibisana, K. O. (2025). *Implementasi Transaksi Non Tunai (Cashless Payment) dalam Penerimaan Kas Berbasis Kartu dan Digital di Tropical Restaurant*. Politeknik Negeri Bali.