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Empowering MSME Performance Through Fintech and E-Commerce: The Moderating Role of Cashless Society

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Abstract

This study explores the impact of fintech payment and e-commerce adoption on the performance of Micro, Small, and Medium Enterprises (MSMEs), focusing on the moderating role of the cashless society. Using a quantitative approach, data were collected from MSMEs operating in Central Java to examine how digital financial solutions influence business performance. The findings reveal that fintech payment adoption enhances MSME performance by improving transaction efficiency, financial management, and access to a broader market. However, e-commerce adoption does not directly affect MSME performance, which may be attributed to challenges such as technological readiness, digital literacy, and infrastructure limitations. The cashless society strengthens the impact of fintech payments on MSME performance, indicating that the shift toward digital transactions provides competitive advantages for MSMEs. However, its role in moderating the effect of e-commerce on MSME performance remains limited, suggesting that successful e-commerce adoption requires additional supporting factors. These findings underscore the importance of digital payment integration for MSMEs and highlight the need for financial literacy programs, digital mentoring, and infrastructure development to support MSMEs in adapting to an increasingly digital economy. This study provides valuable insights for policymakers, financial institutions, and MSME stakeholders in shaping strategies to enhance digital transformation and financial inclusion in the MSME sector.

JEL Classification: G21, L81, O33

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Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in Indonesia's economic growth, contributing significantly to employment and national income. According to the Ministry of Cooperatives and SMEs, MSMEs contribute more than 60.5% of Indonesia's GDP and absorb over 96.9% of the workforce (KEMENKOPUKM, 2023). Despite their substantial contribution, MSMEs face persistent challenges, particularly in accessing financial services and expanding their market reach (Octiva et al., 2024). Traditional banking requirements, such as collateral and credit history, often hinder MSMEs from securing working capital (Sunaningsih et al., 2019). Furthermore, digital technology's limited adoption restricts operational efficiency and market penetration (Zaelani, 2019). Recent technological advancements, particularly in financial technology (fintech) and e-commerce, have provided promising solutions to address these challenges (Yulida, 2019). Fintech payments, including digital wallets, electronic payments, and online lending, offer MSMEs more accessible and efficient financial services. Meanwhile, e-commerce platforms enable MSMEs to expand their market presence, reaching local and international consumers (Rahayu & Ningtyas, 2021). Integrating fintech and e-commerce is increasingly considered a strategic approach to accelerate MSME growth (Nizar & Lubis, 2020). Through fintech adoption, MSMEs can streamline transactions, reduce operational costs, and improve cash flow. Simultaneously, e-commerce provides a broader market reach and various digital marketing tools to enhance sales performance (Triandra et al., 2019).

Despite the potential benefits of fintech and e-commerce, their adoption among MSMEs in Indonesia remains relatively low. A recent survey indicates that only 30% of MSMEs utilize e-commerce platforms, with many still relying on traditional marketing methods (Hahalongan et al., 2024). This slow adoption is attributed to limited digital literacy, lack of financial inclusion, and concerns over digital transaction security (Ndraha et al., 2024). Moreover, previous studies have yielded mixed findings regarding the impact of fintech and e-commerce on MSME performance. For instance, Chita et al. (2024) found that fintech significantly enhances MSME performance, while Ainur Hardianti et al. (2022) emphasized e-commerce's critical role in driving MSME growth. However, Yunita Leatemia et al. (2023) reported that payment gateways did not significantly affect MSME income. Handayani and Badjuri (2022) suggested that fintech payments did not directly contribute to MSME development.

A critical research gap exists in understanding the moderating role of a cashless society in the relationship between fintech, e-commerce, and MSME performance. A cashless society, where electronic transactions dominate over cash-based transactions, is rapidly emerging in Indonesia, driven by government and private sector initiatives (Wardani et al., 2024). While previous research has explored fintech and e-commerce individually, few studies have examined their integrated impact on MSME performance while considering the cashless society as a moderating factor. Studies by Kustina and Aji (2023) suggest that a cashless society can strengthen the positive effect of digital payment systems on MSME financial performance. However, there remains limited empirical evidence on how the transition towards a cashless society influences MSME adaptation to fintech and e-commerce.

This study seeks to fill the existing research gap by investigating the integration of fintech payment and e-commerce on MSME performance, with cashless society as a moderating variable. Unlike previous studies that examined fintech and e-commerce separately, this research introduces a novel approach by analyzing how the cashless society facilitates adopting digital financial services and online business transactions. Given the increasing shift towards cashless transactions, this study argues that MSMEs operating in a more digitally oriented society are more likely to adopt fintech payments and e-commerce, leading to improved performance outcomes. The objectives of this study are to analyze the impact of fintech payment and e-commerce integration on MSME performance, to examine the moderating role of a cashless society in strengthening the relationship between fintech, e-commerce, and MSME performance, and to provide

empirical evidence on the influence of digital transformation in financial transactions on MSME sustainability and growth.

This research contributes to the literature by offering a comprehensive perspective on how fintech and e-commerce can synergistically improve MSME performance, particularly in an evolving cashless society. The findings will be valuable for policymakers, financial institutions, and MSME practitioners in designing strategies to enhance digital adoption. Furthermore, by emphasizing the role of a cashless society, this study introduces a novel moderating framework, highlighting the significance of digital financial transformation in shaping MSME competitiveness. The study advances current knowledge on digital financial inclusion, technological adoption, and MSME performance in emerging markets by addressing this gap. The findings are expected to support future research on digital ecosystems and their implications for small business development in an increasingly cashless economy.

Literature Review

Hypothesis Development

The Effect of Fintech Payment on MSME Performance

Financial Technology (fintech) has revolutionized financial services by integrating technology to facilitate more efficient and seamless transactions. Fintech payments, such as digital wallets, electronic payments, and peer-to-peer (P2P) lending, have significantly transformed the traditional cash-based transaction model into a digital ecosystem that offers convenience, speed, and security (Sukma et al., 2024). For MSMEs, fintech is crucial in overcoming financial constraints, improving transaction efficiency, and enhancing business operations. Adopting fintech payment solutions allows MSMEs to streamline their financial management, reduce transaction costs, and provide customers with a more flexible and efficient payment system (Sholeha et al., 2024). Furthermore, fintech enables MSMEs to access alternative financing options, such as digital lending platforms, which help bridge the funding gap that often hinders their growth. By facilitating more straightforward and faster access to financial resources, fintech contributes to MSMEs' ability to expand their market, optimize cash flow, and improve overall business performance (Wahyuni et al., 2024).

Several studies have confirmed the positive impact of fintech payments on MSME performance. Fintech adoption has been linked to increased financial inclusion, greater operational efficiency, and higher profitability among small businesses (Sholeha et al., 2024). The ability to conduct remote transactions, automate payment processes, and manage financial transactions in real-time has enabled MSMEs to enhance their competitiveness in an increasingly digital marketplace. Additionally, fintech solutions provide more transparent financial records, which can improve MSMEs' creditworthiness and access to additional funding (Wahyuni et al., 2024). Given these advantages, fintech payments are expected to influence MSME performance positively.

H1: *Fintech Payment has a positive effect on MSME Performance*

The Effect of E-Commerce on MSME Performance

E-commerce has transformed the way businesses operate by utilizing the Internet as a medium for sales, marketing, and communication in both Business-to-Business (B2B) and Business-to-Consumer (B2C) transactions (Triandra et al., 2019). The rise of digital marketplaces and online selling platforms has provided MSMEs new opportunities to expand their market reach beyond geographical limitations. Through e-commerce, MSMEs can connect with a broader customer base, optimize inventory management, and implement cost-effective marketing strategies (Wijaya & Widjaja, 2023). Engaging in online transactions allows MSMEs to operate more efficiently, reduce operational costs, and streamline supply chain management. Additionally, e-commerce platforms support the integration of digital marketing tools such as search engine optimization (SEO), targeted advertising, and customer relationship management (CRM), which can enhance brand visibility and customer engagement (Triandra et al., 2019).

Several empirical studies have demonstrated that adopting e-commerce has a significant positive impact on MSME performance. E-commerce facilitates business scalability by enabling MSMEs to automate sales processes, expand distribution channels, and increase sales volume (Wijaya & Widjaja, 2023). Moreover, the flexibility of online business models allows MSMEs to diversify revenue streams, respond to market demand in real-time, and enhance customer service experiences. Research by Triandra et al. (2019) highlights that MSMEs utilizing e-commerce platforms experience higher growth rates and improved financial performance compared to traditional sales methods, given the role of e-commerce in increasing business efficiency, market access, and profitability.

H2: *E-commerce has a positive effect on MSME Performance*

The Effect of Fintech Payment on MSME Performance with Cashless Society Moderation

The Theory of Planned Behavior (TPB) explains that individual decisions regarding behaviour are influenced by three key factors: attitudes, subjective norms, and perceived behavioural control. These factors are relevant in understanding the adoption of a cashless society, where individuals transition from cash-based transactions to digital payments due to evolving financial technologies (Ainur Hardianti et al., 2022). The growing acceptance of electronic money and digital payment systems reflects consumer behaviour changes driven by convenience, security, and efficiency. As financial transactions become increasingly digital, MSMEs must integrate fintech payment systems to remain competitive and meet customer expectations. The shift towards a cashless society is facilitated by technological advancements, government policies, and changes in lifestyle preferences, making digital payments more accessible and widely adopted. Using fintech payments, such as mobile banking, digital wallets, and online payment gateways, aligns with the transition toward a cashless society, ensuring faster, more efficient, and more secure transactions (Kustina & Aji, 2023). Several studies have shown that the extent to which fintech payments improve MSME performance depends on external factors, including the level of digital adoption within society. A cashless society moderates the relationship between fintech payments and MSME performance by accelerating the adoption of digital transactions and reducing barriers to electronic payments (Kustina & Aji, 2023). As non-cash transactions become more prevalent, MSMEs experience increased financial efficiency, reduced transaction costs, and improved financial management, ultimately enhancing their overall performance. Additionally, the ease of cashless transactions encourages more lavish consumer spending, benefiting MSMEs through faster and more reliable payments, given the increasing role of the cashless society in shaping digital payment behaviour.

H3: *Fintech Payment has a positive effect on MSME performance with moderation Cashless Society*

The Effect of E-Commerce on MSME Performance with Cashless Society Moderation

The adoption of e-commerce by MSMEs has been widely recognized as a strategic approach to enhancing business performance. According to the Technology Acceptance Model (TAM), technology's perceived usefulness and ease of use influence its adoption, leading to improved efficiency and competitive advantage (Davis, 1989). E-commerce facilitates MSMEs by broadening market access, reducing operational costs, and improving customer engagement through digital platforms. Several empirical studies have confirmed that MSMEs leveraging e-commerce experience increased sales, enhanced customer interaction, and better operational efficiency (Rahayu & Day, 2017). Moreover, digital transformation in MSMEs allows them to respond quickly to market changes, ensuring business sustainability and growth.

In the digital economy, cashless transactions have become essential to e-commerce adoption, forming a more integrated and seamless business process. The cashless society, characterized by the widespread use of digital payment systems such as e-wallets and mobile banking, enhances transactional efficiency, minimizes fraud risks, and improves financial record-keeping, thus strengthening MSME performance. The presence of a cashless society moderates the relationship between e-commerce and MSME performance by further simplifying transactions, reducing reliance on cash, and fostering greater consumer trust in digital transactions.

H4: *E-commerce has a positive effect on MSME performance with moderation Cashless Society*

Based on the hypothesis development, the research model is formulated according to the illustration shown in Figure 1 below:

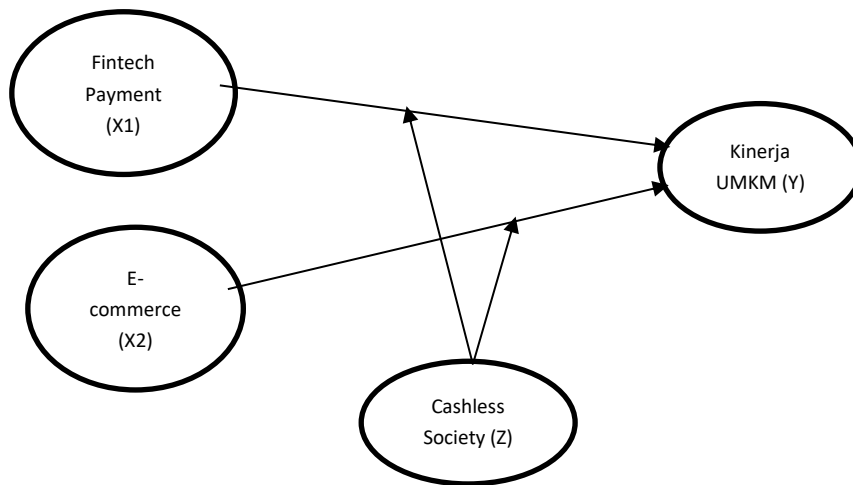


Figure 1. Framework of Thought

Method

This study employs a quantitative research approach using a survey-based questionnaire method to examine the effect of e-commerce and fintech payment on MSME performance, with cashless society as a moderating variable. A cross-sectional design was adopted, allowing for analyzing relationships between the studied variables at a single point in time. The research focuses on MSME entrepreneurs in Central Java, Indonesia, who have integrated e-commerce and fintech-based payment systems into their business operations. The sampling technique used in this study is purposive sampling, ensuring that respondents meet specific inclusion criteria. The selected MSMEs must be actively engaged in business operations, have adopted e-commerce for transactions, and utilize fintech-based payment solutions such as mobile banking, internet banking, and e-wallets. Data collection was conducted through online and offline questionnaires between September 6 and October 19, 2024, yielding 102 valid responses for analysis.

The study examines four main variables. As the endogenous variable, MSME performance is measured through dimensions such as financial management, human resource competence, and government support. Fintech payment, as one of the exogenous variables, is defined as an innovation in financial transactions through electronic media, including SMS banking, mobile banking, internet banking, and e-wallets. E-commerce, another exogenous variable, refers to buying and selling transactions conducted via digital platforms. Meanwhile, as a moderating variable, a cashless society represents the societal shift towards non-cash financial transactions, enhancing transaction efficiency and security. The study adopts a six-point Likert scale to measure all constructs, where 1 = Strongly Disagree and 6 = Strongly Agree, thereby eliminating a neutral response and encouraging more definitive assessments.

This study analyses the data using SmartPLS software with Partial Least Squares Structural Equation Modeling (PLS-SEM). This method is particularly suitable for examining complex models with multiple dependent constructs and moderating effects, allowing for more robust hypothesis testing. The analysis process includes descriptive analysis to summarize respondents' characteristics, outer model evaluation to test construct validity and reliability, and inner model evaluation to assess structural relationships between variables. The hypothesis testing procedure examines the direct effects of e-commerce and fintech payment on MSME performance, as well as the moderating role of the cashless society, using bootstrapping techniques in SmartPLS. This methodological approach ensures a rigorous analysis of the relationships

among variables and provides empirical evidence on how digital financial innovations influence MSME performance in Indonesia.

Result and Discussion

Characteristics of Respondents

Table 1. Respondent Characteristics

Description	Frequency	Percentage	Description	Frequency	Percentage
Gender	102	100	Payment Method	102	100
Men	29	28.4	Cash	37	36.3
Woman	73	71.6	E-money	15	14.7
Age	102	100	Mix	50	49.0
<20 Year	16	15.7	Fintech Usage	102	100
21-35 Year	41	40.2	< 1 Year	32	31.4
36-45 Year	38	37.3	1 s/d 3 Year	35	34.3
> 45 Year	7	6.9	3 s/d 5 Year	13	12.7
Length of business	102	100	> 5 Year	22	21.6
<1 Year	22	21.6	Use of E-Commerce	102	100
1-10 Year	63	61.8	< 1 Year	40	39.2
> 10 Year	17	16.7	1 s/d 3 Year	26	25.5
Place of Business	102	100	3 s/d 5 Year	17	16.7
Offline	38	37.3	> 5 Year	19	18.6
Online	22	21.6			
Mix	42	41.2			

Source: Data processed SmartPLS 4.0, 2024

The demographic analysis of respondents reveals that the majority are women, accounting for 71.6% of the total sample. Regarding age distribution, most respondents fall within the productive age range, with 40.2% aged between 21-35 years and 37.3% aged between 36-45 years, while only 6.9% of respondents are over 45 years old. Regarding business experience, 61.8% of respondents have been operating for 1-10 years, suggesting that most are in the growth stage of their business lifecycle. Regarding business strategies, 41.2% of respondents adopt offline and online approaches, while a smaller proportion (21.6%) operate exclusively online. Regarding payment preferences, 49% of respondents utilize a combination of cash and e-money, indicating an increasing acceptance of digital payment solutions, though traditional methods remain in use. The adoption of fintech services is relatively recent, with 34.3% of respondents having used fintech for 1-3 years, followed by 31.4% who have adopted fintech within the last year. Similarly, using e-commerce platforms is a relatively new phenomenon among MSMEs, with 39.2% of respondents adopting e-commerce within the past year. However, a notable proportion (18.6%) have used e-commerce platforms for over five years. This analysis underscores the ongoing digital transformation among MSMEs, with increasing but gradual adoption of e-commerce and fintech solutions, reflecting a shift towards a more digitalized business environment.

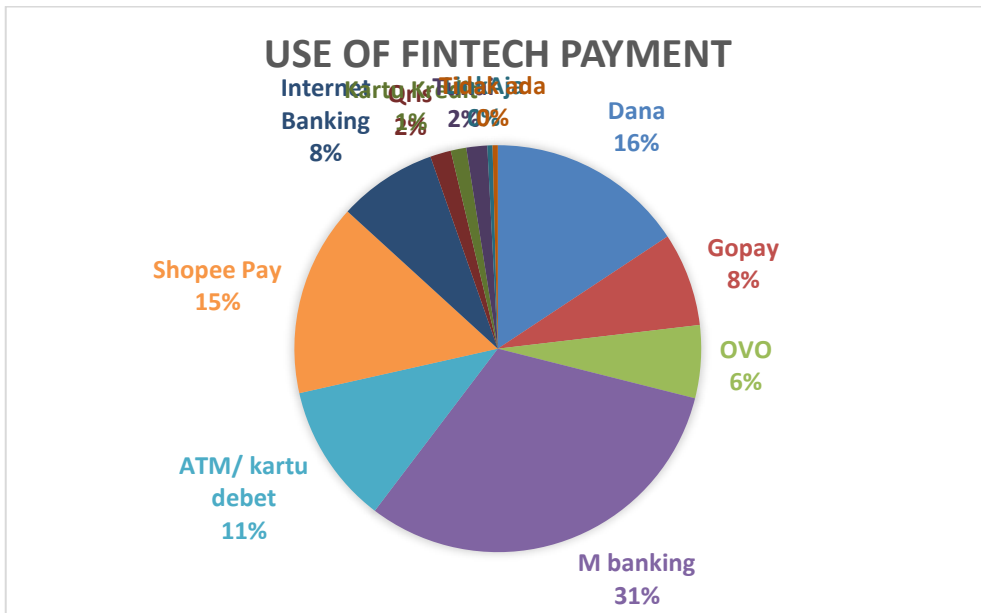


Figure 2. Use of Fintech Payment

The data shows that M-Banking is the most popular payment method (31%), followed by Dana (16%), Shopee Pay (15%) and ATM/Debit Card (11%). Digital wallets such as Gopay (8%) and OVO (6%) are also widely used, while traditional methods such as cash (2%) and credit cards (2%) are less popular. This trend reflects the significant shift to digital payments in everyday life.

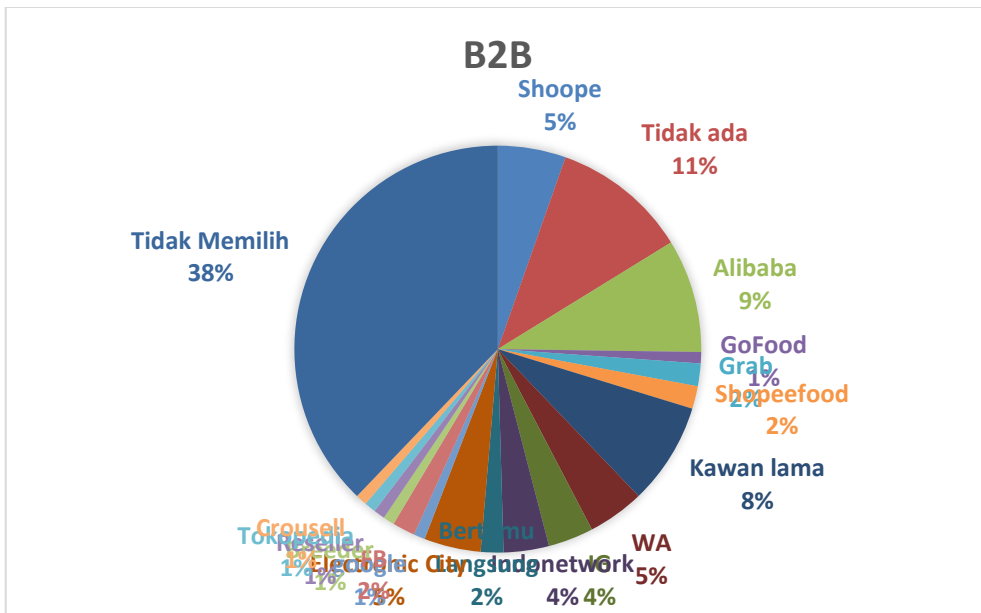


Figure 3. Business to Business (B2B)

The data shows that most respondents did not choose (38%) or answered none (11%), indicating unclear preferences. Popular platforms such as Alibaba (9%), Kawan Lama (8%), and Shopee (5%) have higher usage than others, while platforms such as GoFood, Tokopedia, and others are only used by 1-2% of respondents. This reflects the dominance of a few big players, with many respondents undecided.

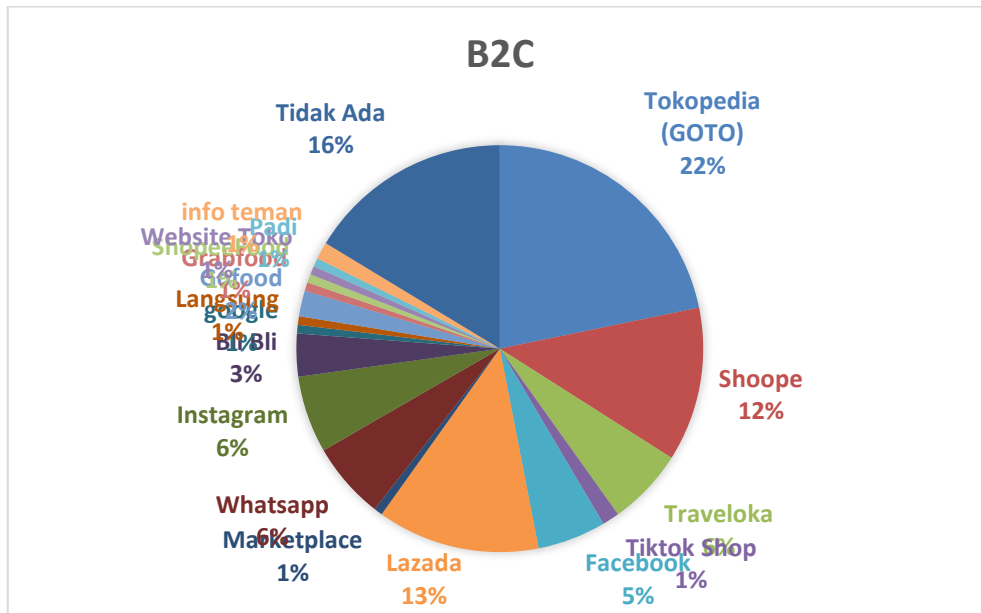


Figure 4. Business to Consumer (B2C)

The data shows that Tokopedia is the most popular B2C platform, with 29%, followed by Lazada (17%) and Shopee (16%). Platforms such as Traveloka, WhatsApp, and Instagram earned 8% each. Most respondents chose the None category (22%), indicating unclear or unspecific preferences. Other platforms have a smaller share, with each below 5%.

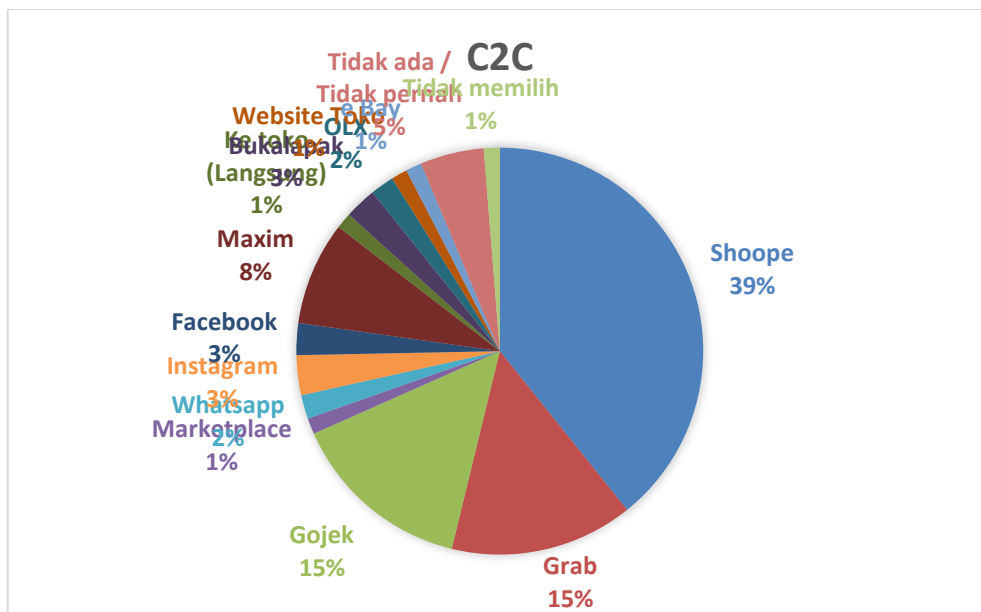


Figure 5. Consumer to Consumer (C2C)

The data shows Shopee as the dominant platform (56%), followed by Grab and Gojek (21% each). Other platforms, such as Maxim (12%) and social media, such as Instagram (5%) and Facebook (4%), have more minor usage. Respondents who have never used or did not vote account for 7%, indicating some are still unreached by these services.

Validity and Reliability Test Results

Tabel 2. Construct Reliability and Validity

Variable	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Mo. Cashless Society	0.821	0.851	0.879	0.645
X1. Fintech Payment	0.963	0.976	0.968	0.769
X2. e-Commerce	0.982	1.008	0.984	0.871
Y. Kinerja UMKM	0.922	0.941	0.938	0.717

Source: Data processed SmartPLS 4.0, 2024

Hair et al. (2021) propose the Rules of Thumb criteria for assessing the validity of reflective constructs, mainly through convergent validity testing. According to these criteria, the Average Variance Extracted (AVE) value should exceed 0.50 to confirm convergent validity. As presented in Table 2, all construct validity values surpass this threshold, indicating that all indicators meet the validity requirements. This suggests that the observed variables effectively represent the latent variables being measured.

Furthermore, Table 2 demonstrates that the measurement model successfully assesses how the manifest variables represent the latent constructs. This model analysis determines the relationship between latent variables and their indicators. The results confirm that all variables have passed the reliability test, as evidenced by Cronbach’s alpha values, which exceed the acceptable threshold of 0.7. Specifically, Cronbach’s alpha values for Cashless Society (0.821), Fintech Payment (0.963), E-Commerce (0.982), and MSME Performance (0.922) indicate strong internal consistency. Similarly, the composite reliability values for Cashless Society (0.851), Fintech Payment (0.976), E-Commerce (1.008), and MSME Performance (0.941) further support the reliability of the constructs, as they all exceed 0.7.

Tabel 3. Heterotrait Monotrait Ratio (HTMT)

Variabel	Mo. Cashless Society	X1. Fintech Payment	X2. e-Commerce	Y. Kinerja UMKM	Mo. Cashless Society x X2. E-Commerce	Mo. Cashless Society x X1. Fintech Payment
X1. Fintech Payment	0.840					
X2. e-Commerce	0.529	0.749				
Y. Kinerja UMKM	0.422	0.417	0.271			
Mo. Cashless Society x X2. e-Commerce	0.084	0.220	0.118	0.096		
Mo. Cashless Society x X1. Fintech Payment	0.156	0.308	0.187	0.085	0.930	

Source: Data processed SmartPLS 4.0, 2024

The Heterotrait-Monotrait Ratio (HTMT) test assessed discriminant validity by evaluating the relationships between constructs within the research model. According to the Gold Standard criterion, an HTMT value below 0.90 is required to establish adequate discriminant validity. As presented in Table 3, most construct relationships satisfy this criterion, confirming sufficient discriminant validity across most variables. However, an exception is observed in the interaction term Mo. Cashless Society × X1. Fintech Payment, where the HTMT value exceeds 0.90. This result suggests a potential discriminant validity issue, indicating that the constructs in this interaction term may share overlapping variance. This finding warrants further examination to ensure that the constructs in the model remain conceptually distinct and do not exhibit multicollinearity.

Hypothesis Test Results

Tabel 5. Direct Effect dan Indirect Effect

Variable	Original sample (O)	T statistics (O/STDEV)	P values
X1. Fintech Payment -> Y. Kinerja UMKM	0.396	2.172	0.030
X2. e-Commerce -> Y. Kinerja UMKM	-0.039	0.203	0.839
Mo. Cashless Society x X2. e-Commerce -> Y. Kinerja UMKM	-0.390	1.517	0.129
Mo. Cashless Society x X1. Fintech Payment -> Y. Kinerja UMKM	0.381	1.657	0.098

Source: Data processed SmartPLS 4.0, 2024

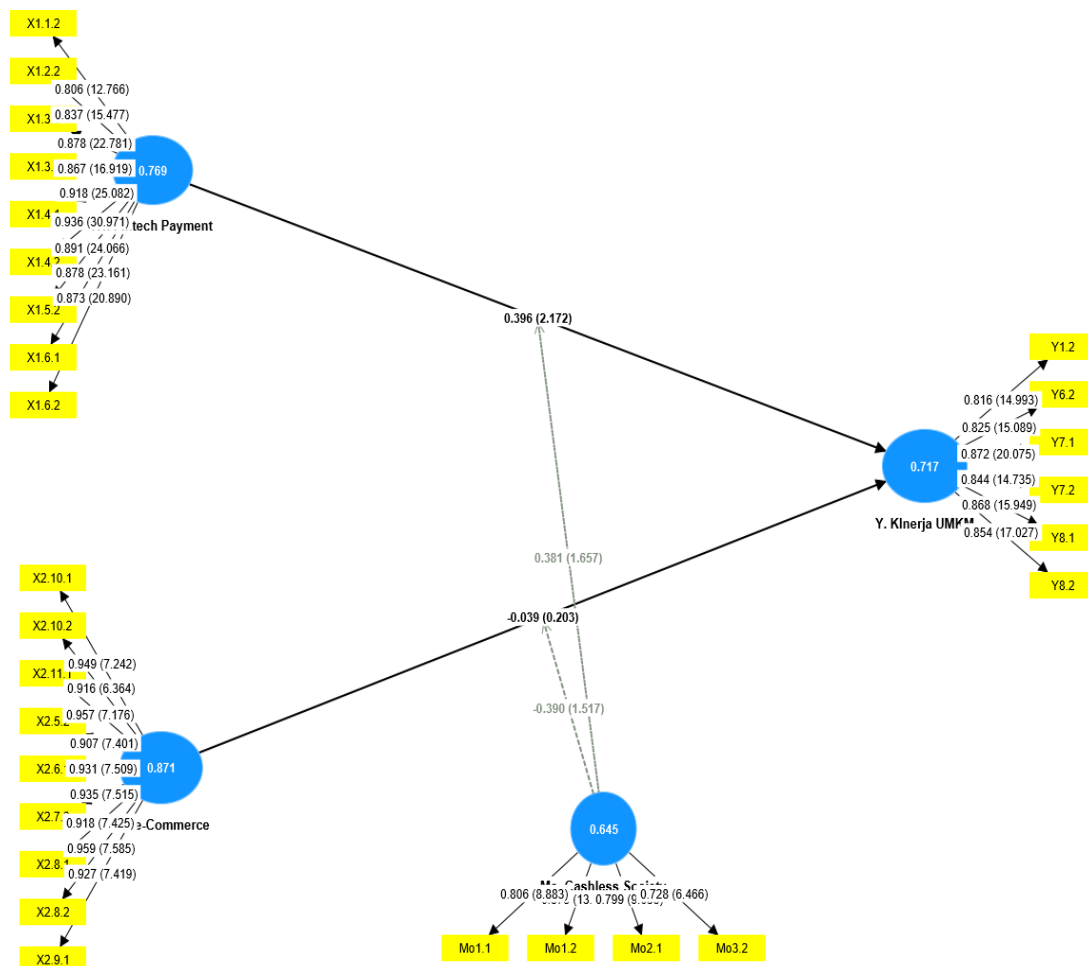
The hypothesis testing results in this study are evaluated based on the p-values presented in Table 5, which includes both Direct Effect and Indirect Effect analyses. A hypothesis is considered statistically significant if the p-value is less than 0.10.

The results of the Direct Effect analysis indicate that the relationship between Fintech Payment and MSME Performance is statistically significant, with a p-value of 0.030 (<0.10). This finding suggests that H_0 is rejected while H_a is accepted, confirming that Fintech Payment significantly affects MSME Performance. Conversely, the relationship between E-Commerce and MSME Performance is not statistically significant, with a p-value of 0.839 (>0.10). This result indicates that H_0 is accepted and H_a is rejected, implying that E-Commerce does not directly impact MSME Performance.

The Indirect Effect analysis further examines the mediating role of Cashless Society. The results reveal that the mediation effect of Cashless Society on the relationship between Fintech Payment and MSME Performance is statistically significant, with a p-value of 0.098 (<0.10) and a positive coefficient of 0.381. This indicates that Cashless Society positively and significantly mediates the relationship between Fintech Payment and MSME Performance. In contrast, the mediation effect of Cashless Society on the relationship between E-Commerce and MSME Performance is not statistically significant, with a p-value of 0.129 (>0.10) and a negative coefficient of -0.390. This suggests that Cashless Society does not effectively mediate the relationship between E-Commerce and MSME Performance.

The proposed model provides valuable insights into the key factors influencing MSME performance, particularly about fintech payments, e-commerce, and the cashless society. The results indicate that the Fintech Payment (X1) construct significantly positively affects MSME performance (Y), with a coefficient of 0.396 and a t-value of 2.172, confirming its substantial impact. Conversely, the E-Commerce (X2) construct does not significantly affect MSME performance, as evidenced by its coefficient of -0.039 and a t-value of 0.203, indicating that its influence is statistically insignificant.

Regarding the mediating role of Cashless Society, the analysis reveals that this variable influences the indirect effects of other constructs. However, specific path coefficients display low significance levels, suggesting that the mediating effect of a Cashless Society may not be consistently strong across all relationships. These findings emphasize the critical role of fintech payments in driving MSME performance while highlighting the need for further investigation into the mechanisms through which e-commerce and the cashless society contribute to MSME growth and sustainability.



Source: Data processed SmartPLS 4.0, 2024

Figure 6. LTO Model

Discussion

Fintech Payment on MSME Performance

The findings of this study indicate that fintech payments have a positive and significant effect on MSME performance, with a p-value of 0.030 (< 0.10). This result suggests that adopting fintech-based payment technologies, such as e-wallets, QR payments, and other digital transaction platforms, contributes to improving operational efficiency, financial management, and market reach for MSMEs. The increasing adoption of fintech payments enables MSMEs to enhance transaction efficiency, reduce cash handling risks, and facilitate access to digital financial services, ultimately leading to improved business performance. These findings align with the work of Zebua (2024), which highlights how fintech-based payments have revolutionized the MSME landscape by fostering digital transactions and expanding market accessibility.

From a theoretical perspective, these findings are supported by the Resource-Based View (RBV) theory, which suggests that a firm's competitive advantage is derived from its ability to leverage valuable, rare, inimitable, and non-substitutable (VRIN) resources (Silvia et al., 2022). In the context of MSMEs, fintech payment adoption represents a strategic resource that enhances competitive positioning by streamlining financial transactions, improving record-keeping, and broadening customer reach. Fintech payment systems offer convenience and security, making them highly attractive to consumers who prioritize seamless digital transactions (Rahman et al., 2024). MSMEs integrating fintech solutions are better positioned to capture tech-savvy customers, leading to increased sales and profitability.

Empirical studies further support these findings. Leatemia et al. (2023) argue that the cashless society movement, driven by fintech innovations, enables businesses to expand their operations beyond local

markets without incurring significant costs. This transition fosters greater consumer engagement and enhances sales performance for MSMEs. Similarly, [Rahardjo et al. \(2019\)](#) emphasize that the widespread adoption of financial technology among micro, small, and medium enterprises has facilitated greater financial inclusion, a key determinant of MSME sustainability. The results of this study are also in line with the research of [Sholeha et al. \(2024\)](#) and [Hidayatullah and Sartika \(2024\)](#), all of which confirm the positive influence of fintech payment adoption on MSME performance. Furthermore, [Lestari et al. \(2020\)](#) and [Purnamasari \(2020\)](#) highlight the significant impact of payment gateway systems in supporting MSME development, reinforcing the argument that digital payments play a crucial role in MSME growth. Likewise, [Dalimunthe et al. \(2023\)](#) emphasize the importance of digital payment adoption in the expansion and sustainability of MSMEs.

Despite its positive impact, fintech payment adoption also presents several challenges that MSMEs may encounter, including technological readiness, transaction costs, and digital literacy barriers. MSMEs with limited technological infrastructure or low digital literacy may struggle to leverage fintech solutions' benefits fully. Additionally, transaction fees associated with fintech payment platforms could deter adoption, particularly among micro-enterprises with tight profit margins. These findings highlight the need for further policy interventions and financial education programs to enhance fintech adoption among MSMEs.

E-Commerce on MSME performance

The findings of this study indicate that e-commerce adoption does not significantly affect MSME performance, as evidenced by a p-value of 0.839 (>0.10). This suggests that while e-commerce platforms continue to expand, their impact on MSME performance remains limited or inconsistent. One possible explanation for this result is the lack of access to digital resources and insufficient technological literacy among MSME actors. Although e-commerce platforms offer opportunities for business expansion, not all MSMEs have the capacity to integrate digital platforms into their operations effectively. Challenges such as limited digital skills, inadequate training, and insufficient technological infrastructure, including uneven internet access, may hinder the optimal utilization of e-commerce for business growth.

From a theoretical perspective, these findings can be analyzed using the Technology Acceptance Model (TAM), which suggests that technology adoption is influenced by perceived usefulness and ease of use ([Yusvita Aprilyan et al., 2022](#)). If MSME owners perceive e-commerce platforms as complex, costly, or irrelevant to their specific business needs, their willingness to adopt such technology diminishes. For instance, due to consumer preferences and cultural transaction practices, MSMEs specializing in locally produced goods may find traditional sales channels more effective than digital platforms. Moreover, MSMEs operating in rural or underserved areas may struggle with digital infrastructure limitations, making it difficult to engage fully in online commerce.

Empirical evidence also suggests that the impact of e-commerce on MSME performance is not always immediate. Unlike fintech payments, which provide instant transaction efficiency, e-commerce adoption requires a more extended adjustment period for MSMEs to establish an effective online presence, optimize digital marketing strategies, and build customer trust. This process includes refining product presentation, ensuring timely delivery, and navigating consumer behaviour in digital marketplaces. Therefore, the short-term impact of e-commerce adoption may not be significant, even though long-term benefits could emerge once businesses fully adapt to digital ecosystems.

These findings align with previous studies conducted by [Prasetyo and Farida \(2022\)](#), [Subagio and Saraswati \(2021\)](#), and [Triandra et al. \(2019\)](#), which also concluded that e-commerce adoption does not directly enhance MSME performance. However, these results contrast with the findings of [Khaira and Jalaluddin \(2021\)](#); [Noviani Hanum and Sinarasri \(2018\)](#); and [Ramdhani and Anandya \(2022\)](#), who found that e-commerce significantly improves MSME performance when supported by human resource capabilities, stable internet access, and practical information systems. This discrepancy suggests that external factors, such as

technological readiness, infrastructure availability, and digital literacy levels, moderate the relationship between e-commerce adoption and MSME performance.

The Role of Cashless Society in Moderating the Relationship between Fintech Payment and MSME Performance

The findings of this study indicate that the cashless society has a positive and significant effect on MSME performance, with a coefficient value of 0.381 and a p-value of 0.098 (< 0.10). This result suggests that the greater the adoption of digital payments, the better the performance of MSMEs. The presence of a cashless society facilitates faster, more efficient, and more secure financial transactions, reducing operational inefficiencies and enhancing financial management for MSMEs. These findings are consistent with prior research indicating that transitioning to digital payment systems can significantly enhance business performance (Lestari et al., 2020).

The results further confirm that the cashless society moderates and strengthens the impact of fintech payments on MSME financial performance, acting as a quasi-moderator. This implies that cashless transactions not only function as a moderating variable but also play a direct role in influencing MSME performance. The Unified Theory of Acceptance and Use of Technology (UTAUT) provides a relevant framework to explain these findings, as it suggests that technology adoption is influenced by performance expectancy, effort expectancy, social influence, and facilitating conditions (Wardani et al., 2024). MSMEs that perceive digital payment solutions as convenient, efficient, and beneficial are more likely to integrate them into their business models, resulting in improved financial performance.

Empirical evidence supports this argument, as consumers in a cashless society increasingly trust digital transactions, mainly when businesses provide secure and seamless fintech payment options. MSMEs that utilize fintech-based payment systems, such as e-wallets and payment gateways, tend to attract more customers, enhance customer retention, and increase sales volume. Research by Kustina and Aji (2023) also confirms that the interaction between payment gateways and a cashless society positively and significantly impacts MSME financial performance. Similarly, Abiba and Indrarini (2021) found that the widespread adoption of electronic money (e-money) plays a crucial role in fostering the cashless society movement, reinforcing digital payments' impact on business growth.

Despite these advantages, the successful implementation of fintech payments in MSMEs depends on several key factors, including financial literacy and technological adaptation. MSMEs with limited digital knowledge may struggle to fully utilize fintech solutions fully, thereby limiting their ability to capitalize on the benefits of a cashless society. Research by Evitria et al. (2024) highlights that automated digital payment systems enhance transactional security for both buyers and sellers. However, MSMEs need adequate digital infrastructure and training to integrate these technologies effectively. Thus, digital education and financial literacy programs are essential to bridge the gap in fintech adoption among MSMEs.

Interaction Between E-Commerce and Cashless Society on MSME Performance

The findings of this study indicate that the interaction between E-Commerce and Cashless Society does not have a significant positive effect on MSME performance, as evidenced by a p-value of 0.129 (> 0.10). This suggests that although cashless transactions are becoming more prevalent, they do not necessarily enhance the impact of E-Commerce on MSME performance. One possible explanation is that many MSMEs establish a presence on E-Commerce platforms without fully utilizing advanced features such as digital marketing strategies, optimized inventory management, or seamless integration with digital payment systems. As a result, the full potential of E-Commerce remains untapped, limiting its ability to drive business performance improvements.

A key challenge in this regard is infrastructure limitations, particularly in rural and remote areas, where unstable internet connections and limited digital technology access hinder the smooth operation of E-

Commerce. Additionally, many MSMEs face resource constraints, including limited capital and human resources, which prevent them from maximizing the advantages of E-Commerce platforms. Even though the Cashless Society is expanding, not all MSMEs possess adequate financial literacy to manage digital transactions effectively. Many business owners remain comfortable with traditional payment methods and are reluctant to transition to cashless transactions, reducing the potential benefits of E-Commerce adoption.

The Technology Acceptance Model (TAM) provides a theoretical framework for understanding this phenomenon. According to TAM, adopting digital technologies such as E-Commerce and cashless payments largely depends on perceived usefulness and perceived ease of use (Yusvita Aprilyan et al., 2022). Suppose MSME owners do not perceive E-Commerce as adding sufficient value to their business operations or find it difficult to navigate digital platforms. In that case, the Cashless Society is unlikely to moderate the relationship between E-Commerce and MSME performance effectively. This aligns with the findings of Nurbayani and Nurhidayati (2024), who argue that MSME players must achieve high levels of business performance before fully leveraging the benefits of E-Commerce and cashless transactions.

The findings of this study are consistent with previous research by Ainur Hardianti et al. (2022), which indicates that despite the high volume of E-Commerce transactions in Indonesia, these transactions have not yet fostered an optimal Cashless Society, nor have they significantly improved MSME performance. This highlights the importance of external factors, such as technological readiness, digital education, and access to financial services, in ensuring that E-Commerce adoption translates into tangible business benefits. However, these findings contrast with the study conducted by Syaharani et al. (2024), which found that E-Commerce adoption positively influences MSME development, particularly when MSMEs also integrate e-wallets and digital financial services. This suggests that the impact of E-Commerce on MSME performance may be context-dependent, with specific business models or industries benefiting more than others.

Conclusions and Recommendations

The findings of this study provide empirical evidence that fintech payment has a positive and significant impact on MSME performance, as it enhances transaction efficiency, financial management, and access to financing opportunities. MSMEs integrating digital payment solutions, such as e-wallets and QR payments, experience improved operational performance and market reach. Conversely, e-commerce adoption does not exhibit a significant direct impact on MSME performance. This may be attributed to technological limitations, lack of digital literacy, and inadequate infrastructure, which hinder the effective utilization of e-commerce platforms among MSMEs. Furthermore, the findings confirm that the cashless society is a moderating variable, strengthening the positive effect of fintech payment on MSME performance. However, challenges such as financial literacy gaps and technological adaptation barriers remain critical factors that must be addressed to maximize the potential benefits of digital transformation in the MSME sector.

Theoretically, this study contributes to the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) by demonstrating that perceived usefulness and ease of use are critical determinants of digital payment adoption among MSMEs. The findings also reinforce the Resource-Based View (RBV) theory, highlighting that fintech payment adoption is a strategic resource that enhances MSME competitiveness. Additionally, this study extends the discussion on the role of the cashless society as a quasi-moderator, indicating that digital payment ecosystems not only complement fintech adoption but also act as an independent driver of MSME performance. From a practical standpoint, the findings offer valuable insights for MSME players, policymakers, and financial institutions. MSME owners should focus on enhancing digital competencies to maximize the benefits of fintech and e-commerce. Policymakers must implement financial literacy programs, infrastructure development initiatives, and regulatory support to facilitate a seamless transition to digital payment ecosystems. Financial institutions and fintech providers should develop affordable, user-friendly payment solutions tailored to MSME needs, ensuring digital transactions become more accessible and inclusive.

Despite its contributions, this study has several limitations. First, the research focuses on a specific geographic region (Central Java, Indonesia), which may limit the generalizability of the findings to other regions with different technological infrastructure and financial literacy levels. Future research should expand the sample size and geographical scope to examine the impact of fintech and e-commerce adoption across diverse MSME ecosystems. Second, this study employs a cross-sectional research design, capturing only a snapshot of fintech and e-commerce adoption. Future research could utilize a longitudinal approach to assess the long-term effects of digital transformation on MSME performance. Third, the moderating role of the cashless society suggests that other contextual variables, such as government policies, digital trust, and cybersecurity concerns, may also influence MSME adoption of fintech and e-commerce. Future studies should explore additional moderating or mediating factors that shape the relationship between digital financial solutions and MSME growth. By addressing these limitations, future research can provide deeper insights into the evolving role of financial technology and digital business models in enhancing MSME resilience and sustainability in an increasingly digital-driven economy.

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