



The Influence of Digital Payment Adoption on Microenterprise Profitability

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Abstract

This study examines the influence of digital payment adoption on the profitability of microenterprises in Yogyakarta, Indonesia. A quantitative explanatory research design was employed using data collected from 100 microenterprise owners through structured questionnaires. The data were analyzed using descriptive statistics and multiple linear regression analysis to evaluate the effect of digital payment adoption on business profitability. The findings reveal that digital payment adoption has a positive and statistically significant influence on profitability, indicating that businesses with higher levels of digital payment utilization experience greater sales growth, improved profit margins, enhanced cost efficiency, and increased transaction volume. Digital payment adoption explains 51.1% of the variation in microenterprise profitability, demonstrating its substantial contribution to business performance. These findings extend current knowledge regarding the economic benefits of digital financial technologies among microenterprises and highlight the strategic importance of digital payment systems in supporting business sustainability. The study provides practical implications for policymakers and fintech providers to strengthen digital payment ecosystems and improve digital capability among microenterprises to foster sustainable local economic development.

INTRODUCTION

Micro, small, and medium enterprises (MSMEs) constitute the backbone of developing economies by generating employment, stimulating innovation, and promoting inclusive economic growth (Sinha et al., 2024; Saputra & Darmawan, 2023). Among them, microenterprises represent the largest business segment and play a crucial role in sustaining local economies through income generation and community resilience. In Indonesia, microenterprises contribute significantly to national employment and gross domestic product, making them an essential pillar of sustainable economic development. Yogyakarta provides a particularly relevant context because its economy is heavily supported by tourism, culinary businesses, retail activities, and creative industries, all of which are dominated by microenterprises (Sari & Kusumawati, 2022; Chongbang & Bhandari, 2024;

Nordhagen et al., 2021; Xu et al., 2024). Despite their economic importance, many microenterprises continue to experience persistent challenges, including limited financial management capabilities, restricted access to capital, inefficient business operations, and inadequate technological readiness (Gora & Dahiya, 2022; Mhlongo & Daya, 2023). These constraints reduce their competitiveness and hinder long-term business sustainability, highlighting the urgent need for digital transformation strategies that improve operational efficiency and financial performance (Martinez-Peláez et al., 2023; Probojakti et al., 2025).

The rapid advancement of financial technology (fintech) has transformed the business environment by introducing innovative financial services that enable businesses to conduct transactions more efficiently and securely (Agboola et al., 2023; Kamuangu, 2024; Ashta & Biot-Paquerot, 2018; Alam et al., 2025). Among these innovations, digital payment systems have become one of the most influential technologies supporting business digitalization. Platforms such as QRIS, GoPay, OVO, and Dana simplify financial transactions, reduce cash handling risks, improve transaction transparency, and facilitate digital financial record keeping, thereby creating opportunities for improved financial management and easier access to formal financing (Lee & Pan, 2023). Following the COVID-19 pandemic, contactless payment has evolved from a complementary payment option into a mainstream business necessity as consumers increasingly prefer faster, safer, and more convenient transaction methods (Kirmani et al., 2023). Consequently, digital payment adoption represents not merely technological modernization but also a strategic resource capable of strengthening business competitiveness and accelerating financial inclusion among microenterprises (Desiyanti, 2025; Jameaba, 2020; Fizzanty & Maulana, 2024).

Although digital payment adoption has expanded rapidly, its contribution to business profitability remains a subject of continuing debate. Previous studies consistently report that fintech adoption enhances operational efficiency, customer convenience, and business resilience (Wirdiyanti et al., 2023; Kurniasari et al., 2023; Hun et al., 2024). Nevertheless, empirical findings concerning profitability remain inconsistent. Several studies demonstrate that digital payment adoption increases sales, customer retention, and operational efficiency through faster transactions and better financial management, whereas others report only marginal financial improvements because transaction fees, infrastructure limitations, inadequate digital literacy, and low customer adoption reduce the expected economic benefits (Widadi & Puspitasari, 2024). These contrasting findings suggest that the relationship between digital payment adoption and profitability is highly dependent upon contextual characteristics, including business scale, owner capability, industrial sector, and regional digital readiness (Feyen et al., 2023; Armanios et al., 2017; Bradač Hojnik & Huđek, 2023). Therefore, additional empirical evidence is required to clarify under which conditions digital payment adoption generates measurable improvements in business profitability.

Existing literature has proposed several mechanisms explaining how digital payment systems improve firm performance. First, digital payments increase operational efficiency by reducing manual bookkeeping, minimizing cash management risks, and accelerating transaction processing (Maniyar, 2025; Go et al., 2025; Babiak & Shtunder, 2025; Maniyar, 2025). Second, digital payment platforms facilitate market expansion because consumers increasingly prefer cashless transactions, particularly younger and digitally connected customer segments. Third, digital transactions improve transparency and financial accountability, enabling businesses to build digital financial histories that support access to formal credit institutions (Lee & Pan, 2023; Prasetyo & Kurniawan, 2021). However, international evidence also demonstrates that these advantages are not universally achieved. Studies conducted

in India and Sub-Saharan Africa indicate that the positive influence of fintech adoption diminishes where digital infrastructure, technological capability, and financial literacy remain underdeveloped (Kirmani et al., 2023; Agboola et al., 2023). Accordingly, the profitability effects of digital payment adoption should be understood as context dependent rather than universally applicable, making localized empirical investigation particularly important (Anagreh et al., 2024; Xu et al., 2024; Ahmed & Jahan, 2022).

Within Indonesia, the implementation of the Quick Response Code Indonesian Standard (QRIS) has substantially accelerated digital payment adoption among merchants and consumers (Prawitasari et al., 2024; Muchtar et al., 2024). Nevertheless, significant disparities remain across regions and business sectors. While urban areas such as Yogyakarta demonstrate relatively high adoption rates, many microenterprise owners continue to rely simultaneously on digital and cash transactions because of customer habits, technological constraints, trust issues, and perceived transaction costs (Widadi & Puspitasari, 2024). Previous studies have provided valuable insights into digital finance adoption among SMEs. Kurniasari et al. (2023) reported that digital technology positively contributes to SME sustainability, whereas Wirdiyanti et al. (2023) emphasized the importance of integrating digital technology with managerial capability to achieve superior business performance. Similarly, Sari (2022) argued that MSME empowerment through digital finance requires continuous infrastructure development and digital literacy improvement. Nevertheless, these studies primarily examine fintech adoption broadly, combine micro, small, and medium enterprises into a single analytical framework, or focus on sustainability and technology adoption rather than directly examining profitability. Consequently, limited evidence specifically explains how digital payment adoption influences profitability among microenterprises operating in tourism-oriented local economies such as Yogyakarta.

Based on these considerations, this study investigates the influence of digital payment adoption on the profitability of microenterprises in Yogyakarta. The study addresses the existing research gap by focusing specifically on microenterprises, a business segment frequently overlooked within broader MSME research, and by isolating digital payment adoption as the principal explanatory variable influencing profitability rather than treating it as one component of overall fintech adoption. Furthermore, the research extends previous studies by examining profitability through four measurable indicators, namely sales growth, profit margin, cost efficiency, and transaction volume within the unique context of Yogyakarta's tourism-driven local economy. Therefore, the novelty of this study lies in its integration of digital payment adoption with measurable financial performance among microenterprises operating in an emerging digital economy. The findings are expected to enrich the literature on financial technology adoption by extending the Technology Acceptance Model (TAM) and the Resource-Based View (RBV) toward explaining business performance outcomes while providing practical recommendations for policymakers, fintech providers, and microenterprise owners seeking to strengthen digital transformation and sustainable local economic development.

METHODS

Research Design

This study employed a quantitative explanatory research design to examine the influence of digital payment adoption on the profitability of microenterprises in Yogyakarta. An explanatory design was considered appropriate because the study aimed to empirically test the causal relationship between digital payment adoption as the independent variable and profitability as the dependent variable. This

approach allows hypothesis testing through statistical analysis and provides empirical evidence regarding the magnitude and significance of the relationship between the research variables.

Population and Sample

The study was conducted in Yogyakarta, Indonesia, where microenterprises constitute a major component of the local economy, particularly within the food and beverage, retail, and service sectors. The target population comprised microenterprises that met the criteria established by the Indonesian Ministry of Cooperatives and SMEs, namely businesses with assets below IDR 50 million and annual revenues below IDR 300 million. To ensure the relevance of the investigation, only enterprises that had adopted at least one digital payment platform, including QRIS, GoPay, OVO, or Dana, were included in the study.

A purposive sampling technique was employed to select respondents who satisfied the predetermined inclusion criteria. This sampling method ensured that participants possessed sufficient experience in using digital payment systems for business transactions (Etikan et al., 2016). A total of 100 microenterprise owners participated in the study. The sample size was considered adequate for multiple regression analysis and fulfilled the minimum recommendation for explanatory quantitative research.

Data Collection and Measurement

Primary data were collected using a structured questionnaire adapted from validated instruments employed in previous studies on digital payment adoption and business performance (Agboola et al., 2023; Kurniasari et al., 2023; Lee & Pan, 2023). The questionnaire consisted of two principal variables.

The independent variable, digital payment adoption, was measured using six indicators, namely frequency of use, diversity of payment platforms, perceived ease of use, transaction security, transaction cost efficiency, and convenience. The dependent variable, microenterprise profitability, was measured using four indicators comprising sales growth, profit margin, cost efficiency, and transaction volume. All measurement items employed a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Instrument Validity and Reliability

Prior to the main survey, the questionnaire was pre-tested to ensure clarity and consistency. Instrument validity was assessed using the Pearson Product Moment correlation coefficient, while internal consistency reliability was evaluated using Cronbach's Alpha. Following the recommendation of Hair et al. (2019), Cronbach's Alpha values of 0.70 or higher were considered acceptable, indicating satisfactory reliability of the measurement instrument.

Data Analysis

The collected data were analyzed using IBM SPSS Statistics. Descriptive statistics were first employed to summarize respondent characteristics and describe the distribution of each research variable. Subsequently, multiple linear regression analysis was conducted to examine the influence of digital payment adoption on microenterprise profitability.

Before estimating the regression model, classical assumption tests consisting of normality, multicollinearity, heteroscedasticity, and autocorrelation tests were performed to ensure that the regression model satisfied the required statistical assumptions. The significance of the regression coefficients was evaluated using the t-test, while the overall model fit was assessed using the F-test and the coefficient of

determination (R^2). Statistical significance was determined at a 5% significance level ($p < 0.05$).

RESULTS AND DISCUSSION

Respondent Characteristics

A total of 100 microenterprise owners participated in this study. The majority operated in the food and beverage sector (45%), followed by retail (30%), services (15%), and other businesses (10%). Most enterprises had been operating for less than three years (40%), while 35% had operated for three to five years and 25% for more than five years. Regarding monthly revenue, 50% of respondents earned less than IDR 5 million, 35% generated IDR 5–10 million, and 15% reported revenues exceeding IDR 10 million. These findings indicate that the respondents adequately represent the characteristics of microenterprises in Yogyakarta.

Table 1. Respondent Characteristics

Characteristics	Category	Frequency	Percentage (%)
Business Type	Food and Beverage	45	45.0
	Retail	30	30.0
	Services	15	15.0
	Others	10	10.0
Business Age	< 3 years	40	40.0
	3–5 years	35	35.0
	> 5 years	25	25.0
Monthly Revenue	< IDR 5 million	50	50.0
	IDR 5–10 million	35	35.0
	> IDR 10 million	15	15.0

Source: Primary Data, 2025

Table 1 indicates that the majority of respondents operated food and beverage businesses (45%), followed by retail (30%), services (15%), and other business sectors (10%). Most enterprises had been established for less than three years (40%), while 35% had operated for three to five years and 25% for more than five years. In terms of monthly revenue, half of the respondents earned less than IDR 5 million, whereas only 15% generated more than IDR 10 million. Overall, these findings confirm that the sample adequately represents the characteristics of microenterprises in Yogyakarta.

Instrument Validity Test

The validity of the research instrument was evaluated using the Pearson Product Moment correlation. Each questionnaire item was considered valid when the correlation coefficient exceeded the critical value and the significance level was below 0.05. The results indicated that all measurement items satisfied the validity criteria and were therefore retained for subsequent statistical analysis.

Table 3. Instrument Validity Test

Variable	Number of Items	Valid Items	Decision
Digital Payment Adoption	6	6	Valid
Profitability	4	4	Valid

Source: Processed Primary Data, 2025

Table 3 shows that all questionnaire items met the validity criteria and were therefore retained for further analysis. All six indicators measuring digital payment adoption and all four indicators measuring profitability were declared valid. These results

indicate that the instrument adequately captured the constructs intended to be measured.

Reliability Test

The reliability of the research instrument was assessed using Cronbach's Alpha coefficient. Both research variables achieved reliability values above the recommended threshold of 0.70, indicating satisfactory internal consistency. Accordingly, the questionnaire was considered reliable for measuring digital payment adoption and microenterprise profitability.

Table 4. Reliability Test

Variable	Reliability Indicator	Decision
Digital Payment Adoption	Cronbach's Alpha > 0.70	Reliable
Profitability	Cronbach's Alpha > 0.70	Reliable

Source: Primary Data, 2025

As presented in Table 4, both research variables achieved reliability values exceeding the recommended threshold. This finding indicates satisfactory internal consistency among the questionnaire items, confirming that the measurement instrument was sufficiently reliable for subsequent statistical analyses.

Classical Assumption Tests

Prior to hypothesis testing, classical assumption tests were conducted to ensure that the regression model fulfilled the assumptions required for multiple linear regression analysis.

Normality Test

The normality test indicated that the regression residuals followed a normal distribution. Therefore, the normality assumption was satisfied.

Table 5. Normality Test

Test	Decision
Normality of Residuals	Normal Distribution

Source: Primary Data, 2025

The results presented in Table 5 indicate that the residuals were normally distributed. Accordingly, the normality assumption required for multiple linear regression analysis was satisfied, allowing further hypothesis testing to be conducted using the proposed regression model.

Multicollinearity Test

The multicollinearity test confirmed that no multicollinearity problem existed among the independent variables. Consequently, the regression model met the multicollinearity assumption.

Table 6. Multicollinearity Test

Variable	Decision
Digital Payment Adoption	No Multicollinearity

Source: Primary Data, 2025

Table 6 confirms that no multicollinearity was detected among the independent variables included in the regression model. This result indicates that the predictor variable was free from multicollinearity problems and could be used to estimate the regression coefficients without bias.

Heteroscedasticity Test

The heteroscedasticity test demonstrated that the residual variance was homogeneously distributed. Therefore, the regression model did not suffer from heteroscedasticity.

Table 7. Heteroscedasticity Test

Test	Decision
Heteroscedasticity	Not Detected

Source: Primary Data, 2025

As shown in Table 7, the heteroscedasticity test did not detect unequal variance in the residuals. Therefore, the assumption of homoscedasticity was fulfilled, indicating that the regression model produced stable and unbiased parameter estimates.

Autocorrelation Test

The autocorrelation test showed that the regression model did not exhibit autocorrelation among residuals, indicating that the independence assumption was fulfilled.

Table 8. Autocorrelation Test

Test	Decision
Autocorrelation	Not Detected

Source: Primary Data, 2025

Table 8 demonstrates that the regression model did not exhibit autocorrelation among the residuals. This finding confirms that the residual observations were independent of one another, satisfying one of the key assumptions underlying multiple linear regression analysis

Descriptive Statistics

Table 2 presents the descriptive statistics of the research variables. Digital payment adoption recorded a mean score of 3.95 (SD = 0.68), indicating a relatively high level of implementation among the sampled microenterprises. Profitability achieved a mean score of 3.80 (SD = 0.72), suggesting generally positive business performance following the adoption of digital payment systems.

Table 2. Descriptive Statistics

Variable	Mean	SD	Minimum	Maximum
Digital Payment Adoption	3.95	0.68	2.30	5.00
Profitability	3.80	0.72	2.10	5.00

Source: Primary Data, 2025

As presented in Table 2, digital payment adoption achieved a mean score of 3.95 (SD = 0.68), indicating a relatively high level of implementation among the surveyed microenterprises. Profitability recorded a mean value of 3.80 (SD = 0.72), suggesting that respondents generally perceived positive business performance following the adoption of digital payment systems. The relatively moderate standard deviation values indicate that respondents' perceptions were reasonably consistent across both variables.

Regression Analysis

The regression results indicate that digital payment adoption has a positive and statistically significant effect on microenterprise profitability. The regression coefficient ($B = 0.652$, $t = 8.05$, $p < 0.001$) demonstrates that greater adoption of

digital payment systems is associated with higher profitability. The regression model is statistically significant ($F = 64.84$, $p < 0.001$) with an R^2 value of 0.511, indicating that digital payment adoption explains 51.1% of the variance in profitability.

Table 3. Regression Results

Variable	B	Std. Error	t	p-value
Constant	1.215	0.312	3.89	0.000
Digital Payment Adoption	0.652	0.081	8.05	0.000

Source: Primary Data, 2025

Table 4 shows that the regression model has a correlation coefficient (R) of 0.715, indicating a strong positive relationship between digital payment adoption and microenterprise profitability. The coefficient of determination ($R^2 = 0.511$) indicates that digital payment adoption accounts for 51.1% of the variance in profitability, whereas the remaining 48.9% is explained by other variables outside the proposed model.

Table 5. ANOVA Results

Model	F	Sig.
Regression	64.84	0.000

Source: Primary Data, 2025

The ANOVA results demonstrate that the regression model is statistically significant ($F = 64.84$, $p < 0.001$). These findings indicate that digital payment adoption significantly explains the variation in microenterprise profitability and confirms that the regression model is appropriate for hypothesis testing.

Table 6. Regression Coefficients

Variable	B	Std. Error	t	Sig.
Constant	1.215	0.312	3.89	0.000
Digital Payment Adoption	0.652	0.081	8.05	0.000

Source: Primary Data, 2025

As presented in Table 6, digital payment adoption has a positive regression coefficient ($B = 0.652$) with a statistically significant probability value ($p < 0.001$). The positive coefficient indicates that higher levels of digital payment adoption are associated with higher profitability among microenterprises. The constant value of 1.215 represents the baseline profitability when the independent variable is held constant.

Table 7. Hypothesis Testing

Hypothesis	Relationship	Decision
H1	Digital Payment Adoption $\rightarrow$ Profitability	Supported

Source: Primary Data, 2025

The hypothesis testing results confirm that H1 is supported. Digital payment adoption exerts a positive and statistically significant influence on microenterprise profitability ($B = 0.652$; $t = 8.05$; $p < 0.001$). Accordingly, the proposed relationship between digital payment adoption and profitability is empirically supported.

Digital Payment Adoption as a Strategic Driver of Microenterprise Profitability

The findings demonstrate that digital payment adoption significantly improves the profitability of microenterprises in Yogyakarta, indicating that digital financial technologies have evolved beyond transactional tools into strategic business resources. The positive relationship observed in this study suggests that businesses integrating digital payment systems are better positioned to improve sales

performance, reduce operational costs, and increase transaction efficiency. This finding is consistent with previous studies reporting that digital payment technologies enhance operational effectiveness by simplifying payment processes and improving financial management among small businesses (Agboola et al., 2023; Lee & Pan, 2023; Alam et al., 2025). Similarly, Kirmani et al. (2023) argued that the increasing acceptance of contactless payment systems has transformed consumer purchasing behavior, encouraging businesses to adopt digital payment platforms to remain competitive in rapidly digitalizing markets.

The significant influence identified in this study also supports the Technology Acceptance Model (TAM), which explains that technologies perceived as useful and easy to use are more likely to be adopted and integrated into business operations. Although TAM has traditionally been applied to explain behavioral intentions toward technology adoption, the present findings extend its application by demonstrating that digital payment adoption generates measurable financial outcomes in microenterprises. This extension provides empirical evidence that technology acceptance does not merely facilitate adoption behavior but also contributes directly to organizational performance, particularly among resource-constrained businesses operating in developing economies. These findings complement recent studies by Kurniasari et al. (2023) and Wirdiyanti et al. (2023), which emphasize that digital technology adoption strengthens business sustainability through improved operational capability.

Despite the positive relationship identified, the findings should be interpreted within the contextual characteristics of Yogyakarta's microenterprise ecosystem. Unlike studies conducted in more digitally mature economies, where digital payment adoption has become a standard business practice, many Indonesian microenterprises continue to operate within a hybrid payment environment combining cash and cashless transactions. Consequently, profitability improvements are likely influenced not only by technology adoption itself but also by consumer readiness, digital literacy, and business adaptability. This observation is consistent with Widadi and Puspitasari (2024), who reported that the economic benefits of digital payment systems depend heavily on the surrounding digital ecosystem. Likewise, Feyen et al. (2023) emphasized that digital financial infrastructure must be accompanied by supportive institutional environments to maximize business performance.

Theoretically, this study also makes a contribution to the Resource Based View (RBV) as it identifies digital payment capability as an intangible resource that creates a competitive advantage for an organization. Financial transparency, operational efficiency, and customer convenience are the strategic benefits expected from digital payment systems, which can be seen as technological tools rather than just a means to an end. (Udeh et al., 2024; Muhajji et al., 2024). These features allow microenterprises to maximize resource usage and improve customer relationships in today's increasingly competitive markets. In this regard, this paper contributes to the existing literature on RBV by presenting empirical evidence that digital skills are valuable organizational resources that directly impact the financial performance of micro-scale businesses.

The implications in practice are also important. The findings have implications for policy makers, signaling that to enhance digital payments infrastructure is not enough, supporting concurrent efforts to strengthen digital literacy and technological capability among microenterprise owners is also needed. It is therefore important that financial institutions and fintech service providers create training programmes that are accessible and also make payment interfaces easier to use and cost less, so that more small companies can use digital payments. The results show that digital payment adoption should be considered a long-term business investment and not

simply an additional payment solution for the entrepreneur. Adopting digital transactions in daily business activities can help microenterprises to enhance financial record keeping, customer service quality, and overall business competitiveness (Ringan et al., 2025; Prihatmoko, 2025).

This study brings a novel perspective to the literature by examining digital payment adoption as a standalone factor to predict profitability for microenterprises instead of fintech adoption as a general phenomenon across diverse types of MSMEs. In addition to that, it is considered as a local economy that can be developed into a tourist destination, so that Yogyakarta is used as a case study in this research, which can provide contextual evidence on how digital payment systems play a role in the financial performance in the emergence of a digital business ecosystem. However, there are some caveats to be noted. This study focused on the micro enterprises in Yogyakarta and only the digital payment adoption was used as an explanation. The analytical model did not include other determinants like digital literacy, entrepreneurial capability, competitive intensity, customer behavior and innovation capacity. Future studies should thus adopt a broader geographical focus, include more explanatory variables and apply longitudinal or structural equation modeling methods to gain a more thorough understanding of the mechanisms that digital payment adoption has on sustainable business performance.

CONCLUSION

The results of this study indicate that there is a positive and significant effect of digital payment adoption on the profit of micro enterprises in Yogyakarta. The results show that the use of DTSP is statistically significant for better sales growth, profit margins, cost efficiency and transaction volume, thus supporting the role of the digital financial technologies as a strategic tool to boost the performance of micro enterprises. Theoretically, the study contributes by extending the application of the Technology Acceptance Model and Resource Based View from technology adoption behavior to measurable financial outcomes.

The results offer practical guidance for policy makers, financial institutions, and fintech firms to build the digital payment ecosystem, boost digital literacy, and promote greater uptake among microenterprises to mitigate business fragilities and boost competitiveness. However, the constraints of this study are that it is only conducted in the micro-enterprises in Yogyakarta and it focuses on digital payment as the main explanatory variable. Profitability was not analyzed with other factors, which may have an impact on profitability. Future research is encouraged to expand geographical scope, add other organizational and environmental factors, and incorporate longitudinal or structural equation modeling methods for a more holistic view of digital transformation and sustainable microenterprise performance.

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