

The Role of Organizational Innovation as a Mediator Between Digital Payment Systems and Business Sustainability

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Abstract

This study investigates the mediating role of organizational innovation in the relationship between digital payment systems and business sustainability among creative Micro, Small, and Medium Enterprises (MSMEs) in Yogyakarta, Indonesia. Amidst the digital transformation trend, digital payment systems such as e-wallets, QRIS, and mobile banking have become critical tools for MSMEs to enhance efficiency and expand market reach. However, the sustainability of MSMEs remains challenged by limited technological adaptation, low digital literacy, and inefficiencies in operational management. Using a quantitative descriptive approach, this study collected data from 100 purposively sampled MSMEs that had adopted digital payment technologies. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the relationships between digital payment systems, organizational innovation, and business sustainability. The results reveal that while digital payment systems exert a moderate direct effect on business sustainability, their indirect effect through organizational innovation is significantly stronger. The mediation analysis confirms that organizational innovation plays a complementary and substantial role in amplifying the impact of digitalization on long-term business performance. These findings highlight the necessity of integrating technological adoption with internal innovation strategies to achieve sustainable competitiveness. The study recommends increased institutional support to foster digital literacy and innovation capacity among MSMEs and calls for future research to explore additional mediating variables and sectoral comparisons using mixed methods.

Keywords : Business sustainability, creative MSMEs, digital payment system, organizational innovation.

1. Introduction

The development of digital technology has driven a significant transformation in the business world, including within the Micro, Small, and Medium Enterprises (MSME) sector (Jurnalita, 2024; Skare, de las Mercedes de Obesso, & Ribeiro-Navarrete, 2023). One of the most prominent forms of technological innovation is the Digital Payment System, which includes e-wallets (Khando, Islam, & Gao, 2022; Utami, Sausan Shakilla, & Dhea Parlina, 2025), QRIS (Simanjuntak, Putri, & Syahidah, 2024), mobile banking (Elsaid Elmaasrawy, Tawfik, & Ali Ahmed Almashikhi, 2025), and various other digital payment applications. These systems provide transactional convenience, enhance efficiency, and expand market access, making them

increasingly relevant for MSME actors (Kilay, Simamora, & Putra, 2022). In Indonesia, MSMEs play a strategic role in the national economy, contributing more than 60% to the Gross Domestic Product (GDP) and absorbing a substantial portion of the labor force (Ministry of Cooperatives and MSMEs) (Kurniadi, Sudarmiatin, & Wardana, 2024; Wanda, Maulidar, & Hijriatin, 2024). The sustainability of MSMEs—particularly in the creative industry sector—is thus crucial for maintaining economic resilience, especially in the face of digitalization and market competition challenges (Agustina, Defri Endri, Saputri, & Zora, 2025).

Business sustainability not only refers to economic dimensions but also includes social and environmental aspects that must be maintained over the long term (Setiawati & Mastarida, 2024). Zhang, Zhang, & Chen (2024) and Akib et al. (2022) emphasize that digitalization and innovation are essential factors that strengthen business resilience in response to global changes. In Yogyakarta City, creative industry MSMEs face various challenges such as limited capital, low digital literacy, and delayed technology adoption (Anatan & Nur, 2023). Although digital payment systems have started to be implemented, their adoption remains uneven, particularly in financial systems and business management practices. Data from the Yogyakarta Office of Cooperatives and MSMEs show that many MSMEs still lack adequate financial record-keeping, which negatively impacts the quality of strategic decision-making.

Findings from interviews with MSME actors in the design and local handicraft sectors in Yogyakarta reveal that efforts to maintain business sustainability are still hindered by inefficiencies in production and a lack of adaptation to technological advancements. Traditional production processes and the absence of digital-based inventory and financial management lead to service delays and difficulties in expanding market reach. Furthermore, attention to social and environmental aspects remains low, as MSME actors tend to focus on short-term business continuity. These limitations indicate that business sustainability is not solely determined by external factors, but also depends significantly on internal capacity for organizational innovation and adaptation.

In this context, organizational innovation is considered a key element that can mediate the relationship between technology adoption—such as the Digital Payment System—and business sustainability. Huang (2023) highlighted that the diffusion of technological innovation accelerates market adaptation and enhances business competitiveness. Almasria, Alhatabat, Ershaid, Ibrahim, & Ahmed (2024) also found that organizational innovation plays a significant mediating role between fintech and business sustainability performance. Innovations in business models, marketing strategies, and operations allow MSMEs to optimize the use of financial technology more effectively and efficiently (Rofiq, Ariyani, & Muna, 2024). According to Priya S

& Divya S (2024), innovation is the primary driver of business sustainability, enabling firms to maintain competitiveness in a continuously evolving market environment.

Therefore, this study aims to analyze the role of organizational innovation in mediating the relationship between the Digital Payment System and the business sustainability of creative industry MSMEs in Yogyakarta City. This research is expected to address a gap in the literature, which has predominantly focused on the direct impact of digitalization on business performance without considering the role of internal structures and strategies. By selecting Yogyakarta – recognized as a center of the creative economy with a high number of MSMEs and strong government digitalization support programs (Bapperida DIY, 2024) – as the study location, this research intends to provide both theoretical and practical contributions in supporting the strategic and sustainable digital transformation of MSMEs.

2. Research Method

This study employed a quantitative descriptive research design, aiming to investigate the relationships among digital payment systems, organizational innovation, and business sustainability within creative micro, small, and medium enterprises (MSMEs) in Yogyakarta. The research population comprised 12,337 creative MSMEs registered with the local Department of Cooperatives and SMEs that had adopted digital payment systems. Using purposive sampling based on criteria such as operating in creative sectors (e.g., culinary, crafts, fashion, or performing arts), utilizing digital payment tools (e.g., QRIS, e-wallets, or mobile banking), and being located in Yogyakarta, a sample of 100 MSMEs was selected. The number of respondents satisfies the minimum sample size recommended for Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis, which requires at least 10 times the largest number of indicators in a construct.

Data collection involved both primary and secondary sources. Primary data were obtained through structured questionnaires using a five-point Likert scale, targeting respondents' perceptions of digital payment systems, organizational innovation, and business sustainability. Secondary data were gathered from government reports, academic journals, and previous studies relevant to the research variables. Each construct was measured through operational indicators adapted from established literature: digital payment system (Dahlberg et al., 2015; Laudon & Traver, 2021), organizational innovation (Tidd et al., 2005), and business sustainability (Elkington, 1997; Wang & Juo, 2021). The measurement model included assessments of validity and reliability through confirmatory composite analysis using SmartPLS 4.

Data analysis was conducted using PLS-SEM to evaluate both the measurement model (outer model) and the structural model (inner model). Validity was assessed using convergent validity, discriminant validity, and average variance extracted

(AVE), while reliability was measured using Cronbach's alpha and composite reliability. Structural relationships were tested through R-square, Q-square, and path coefficients to determine the explanatory and predictive power of the model. Hypothesis testing was based on t-statistics and p-values, with thresholds of $t > 1.96$ and $p < 0.05$ indicating statistical significance. Mediating effects were also evaluated, distinguishing among complementary, competitive, and full mediation pathways.

3. Results and Discussion

3.1 Outer Model Results

3.1.1 Outer Loading and Reliability Testing Results

Table 1. Results of the Measurement Model Test (Outer Model) After Adjustment

Variable	Item	Outer Loadings	Criteria	Description
Digital Payment System	X1	0.817	>0.5	Valid
	X2	0.884	>0.5	Valid
	X3	0.866	>0.5	Valid
	X4	0.618	>0.5	Valid
	X5	0.559	>0.5	Valid
Organizational Innovation	Z2	0.891	>0.5	Valid
	Z5	0.710	>0.5	Valid
	Z6	0.895	>0.5	Valid
	Z7	0.821	>0.5	Valid
	Z8	0.874	>0.5	Valid
Business Sustainability	Z9	0.885	>0.5	Valid
	Y1	0.638	>0.5	Valid
	Y2	0.869	>0.5	Valid
	Y3	0.890	>0.5	Valid
	Y4	0.918	>0.5	Valid
	Y5	0.814	>0.5	Valid
	Y6	0.939	>0.5	Valid
	Y7	0.738	>0.5	Valid
	Y8	0.791	>0.5	Valid
	Y9	0.827	>0.5	Valid
	Y10	0.833	>0.5	Valid
	Y11	0.921	>0.5	Valid
	Y12	0.915	>0.5	Valid

Table 1 presents the results of the measurement model (outer model) assessment after adjustments were made to ensure validity. Each item representing the latent constructs—Digital Payment System, Organizational Innovation, and Business Sustainability—demonstrated outer loading values above the threshold of 0.50, indicating satisfactory convergent validity. Specifically, all indicators within the three constructs meet the minimum criteria for acceptance, with outer loading values ranging from 0.559 to 0.939. These results confirm that the indicators used in this study are capable of adequately measuring their respective latent variables, thereby providing a reliable foundation for further structural model analysis.

3.1.2 Discriminant Validity Test Results

Table 2. Cross Loading

Indicator	Digital Payment System	Organizational Innovation	Business Sustainability
X1	0.817	0.595	0.633
X2	0.884	0.734	0.698
X3	0.866	0.717	0.665
X4	0.618	0.512	0.603
X5	0.459	0.354	0.286
Z5	0.688	0.710	0.623
Z6	0.606	0.895	0.792
Z7	0.495	0.821	0.687
Z8	0.554	0.874	0.723
Z9	0.696	0.922	0.885
Y1	0.479	0.638	0.656
Y2	0.689	0.654	0.833
Y3	0.754	0.746	0.921
Y4	0.803	0.744	0.915
Y5	0.814	0.786	0.869
Y6	0.632	0.783	0.890
Y7	0.683	0.815	0.918
Y8	0.678	0.814	0.857
Y9	0.703	0.842	0.939
Y10	0.501	0.687	0.738
Y11	0.596	0.778	0.791
Y12	0.554	0.704	0.827

Table 2 presents the cross-loading values used to assess discriminant validity within the measurement model. Each indicator is expected to have the highest loading value on its respective construct compared to others. The indicators X1 to X5 show higher loading values on the *Digital Payment System* construct, indicating appropriate convergence. Similarly, indicators Z5 to Z9 exhibit higher loadings on *Organizational Innovation*, while indicators Y1 to Y12 demonstrate stronger associations with *Business Sustainability*. These results confirm that each indicator distinctly represents its intended latent variable, thereby supporting adequate discriminant validity.

Table 3. Average Variance Extracted (AVE)

Variable	Criterion	AVE Value
Digital Payment System	> 0.5	0.505
Organizational Innovation	> 0.5	0.537
Business Sustainability	> 0.5	0.715

Based on Table 3, all constructs in the model have AVE values greater than 0.5. The Digital Payment System construct has an AVE of 0.505, the Organizational Innovation construct has an AVE of 0.537, and the Business Sustainability construct has an AVE of 0.715. Thus, all constructs satisfy the criteria for convergent validity as specified by

Hair, Howard, & Nitzl (2020), namely an AVE > 0.5. This indicates that more than 50% of the variance of each indicator is explained by its corresponding construct, meaning that the indicators in the model consistently and validly reflect their respective constructs.

3.1.3 Reliability Test Results

Table 4. Cronbach's Alpha and Composite Reliability

Variable	Cronbach's Alpha	Composite Reliability	Threshold	Criteria
Digital Payment System	0.795	0.848	> 0.7	Reliable
Organizational Innovation	0.874	0.911	> 0.7	Reliable
Business Sustainability	0.962	0.966	> 0.7	Reliable

Based on Table 4, the R-square value for the *Organizational Innovation* variable is 0.634, indicating that 63.4% of the variance in Organizational Innovation can be explained by the Digital Payment System. Meanwhile, the R-square value for the *Business Sustainability* variable is 0.819, meaning that 81.9% of the variation in Business Sustainability can be jointly explained by the Digital Payment System and Organizational Innovation. These findings suggest a significant influence of the Digital Payment System on Organizational Innovation, and that both the Digital Payment System and Organizational Innovation simultaneously affect Business Sustainability. This implies that the adoption of digital payment systems encourages MSMEs to innovate, and such innovations contribute to enhancing business sustainability.

3.2 Inner Model Results

3.2.1 Coefficient of Determination Results

Table 5. The Results of R²

	R-square	R-square Adjusted
Organizational Innovation (Z)	0.634	0.630
Business Sustainability (Y)	0.819	0.815

Based on Table 4, the R-Square (R²) values indicate that the structural model demonstrates a moderate predictive ability for the three endogenous variables. The R² for Quality of Work Life is 0.397, for Organizational Citizenship Behavior is 0.384, and for Employee Performance is 0.463. These results suggest that the model explains approximately 39–46% of the variance in each variable, with Employee Performance being the most strongly predicted. Although the values reflect acceptable explanatory power, they also highlight the potential for improving the model's predictive strength by incorporating additional variables or more comprehensive theoretical approaches.

3.2.2 Predictive Power Analysis Using Q-square (Q²) Results

In addition to R-square, the model's predictive capability was analyzed using Q-square (Q^2) values. The Q^2 calculation followed the approach proposed by Hussein (2015), with the following formula:

$$Q^2 = 1 - (1 - R_1^2)(1 - R_2^2)$$

Where:

$$R_1^2 = 0.634 \text{ (Organizational Innovation)}$$

$$R_2^2 = 0.819 \text{ (Business Sustainability)}$$

Thus:

$$Q^2 = 1 - (1 - 0.634)(1 - 0.819)$$

$$= 1 - (0.366 \times 0.181)$$

$$= 1 - 0.06625$$

$$= 0.9337$$

The resulting Q^2 value of 0.934 indicates strong predictive relevance according to Hair et al. (2021), who posit that $Q^2 > 0.35$ demonstrates substantial predictive power. This confirms that the research model is not only statistically valid (good fit) but also exhibits exceptionally high predictive capability – particularly in explaining relationships between endogenous variables within the context of business sustainability for creative industry SMEs.

3.3 Path Coefficients Results

Table 5. Results of Direct and Indirect Hypothesis Testing

Path Relationship	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Description	Hypothesis
Digital Payment System → Business Sustainability	0.190	0.089	2.133	0.033	Significant	Accepted
Digital Payment System → Organizational Innovation	0.796	0.031	25.394	0.000	Significant	Accepted
Organizational Innovation → Business Sustainability	0.747	0.076	9.808	0.000	Significant	Accepted
Digital Payment System → Organizational Innovation → Business Sustainability	0.594	0.061	9.717	0.000	Significant	Accepted

3.4 Discussion

3.4.1 Digital Payment System Has a Positive and Significant Effect on Business Sustainability

Path coefficients results on Table 5 revealed that it was found that the Digital Payment System has a positive and significant effect on business sustainability. This is indicated by a T-statistic value of 2.133 and a P-value of 0.033, which exceeds the minimum threshold of 1.660 and falls below the 0.05 significance level in a one-tailed test. The original sample (O) value of 0.190 indicates that the Digital Payment System has a positive influence on business sustainability, although its effect is relatively weaker compared to other paths within the research model. This result suggests that digital payment systems play a role in supporting the sustainability of MSMEs, particularly in terms of transaction efficiency and customer convenience.

Theoretically, this finding is consistent with the study by Calderon (2024), which states that payment digitalization can enhance business operational efficiency, accelerate transaction processes, and reduce costs associated with conventional payment systems. The implementation of Digital Payment Systems enables business actors to expand market access and provide faster and more secure services to customers. Although the magnitude of the effect is relatively small, this is understandable given that MSME business sustainability is also influenced by various other factors such as product quality, customer service, financial management, and market conditions. Therefore, while the Digital Payment System contributes positively, the optimization of business sustainability requires synergy with other supporting factors.

Moreover, the coefficient of determination (R^2) value for the business sustainability variable was 0.819, indicating that 81.9% of the variance in business sustainability can be explained jointly by the Digital Payment System and Organizational Innovation. This further reinforces the notion that digital payment systems contribute to business sustainability, although their influence is more dominant through the mediation of organizational innovation. Consequently, the first hypothesis in this study is accepted, as it meets both statistical criteria and conceptual relevance.

3.4.2 Digital Payment System Has a Positive and Significant Effect on Business Innovation

Based on the results of the second hypothesis test, the Digital Payment System has a positive and significant effect on Organizational Innovation. The obtained T-Statistic value is 25.394 and the P-Value is 0.000, which far exceeds the minimum threshold for the one-tailed test of 1.660 and 0.05, respectively. The original sample (O) value of 0.796 indicates a very strong positive influence of the Digital Payment System on organizational innovation. This coefficient is the highest among all the path relationships in the research model, suggesting that the adoption of a digital

payment system is the main driving factor for innovation within the creative industry MSMEs.

Theoretically, these findings are consistent with the studies by Almasria, Alhatabat, Ershaid, Ibrahim, & Ahmed (2024), which assert that the use of digital payment systems compels organizations to adjust their strategies and operations in response to the demands of digital technological advancements. Business actors are required to develop technology-based services, modify business processes, and optimize digitally integrated operational applications. Additionally, digital payments encourage innovation in customer service, product diversification, digital-based marketing strategies, and real-time financial data management.

From a quantitative perspective, the R^2 value of 0.634 for the organizational innovation variable indicates that 63.4% of the variance in organizational innovation can be explained by the implementation of the Digital Payment System. This is considered a high value in socio-economic research involving MSMEs, considering that other factors such as leadership characteristics, organizational culture, and access to capital also influence the level of innovation. Therefore, the second hypothesis in this study is accepted, as it meets statistical criteria and is also supported by existing theories and previous empirical findings.

3.4.3 Organizational Innovation Has a Positive and Significant Effect on Business Sustainability

Based on the results of testing the third hypothesis, the T-statistic value was 9.808 with a P-value of 0.000, indicating a positive and significant influence of organizational innovation on business sustainability. The original sample value (O) of 0.747 demonstrates a strong influence between these two variables. This value also represents the second largest direct path coefficient in the model, following the influence of the Digital Payment System on organizational innovation. These results suggest that the higher the level of innovation implemented by creative industry MSMEs, the greater the likelihood of achieving long-term business sustainability. This finding is consistent with the innovation theory of Tidd & Bessant (2020), which posits that organizations capable of continuous innovation are more adaptive to market changes and technological advancements. Innovation within organizations encompasses not only product development but also business process innovation, customer service improvements, business model adaptation, and the adoption of digital technologies. Consistent innovation positively affects cost efficiency, customer satisfaction, and market expansion – factors that are crucial for sustaining business in the creative industry sector. Quantitative analysis further demonstrates that business sustainability is significantly influenced by organizational innovation, with a greater statistical contribution compared to the direct effect of the Digital Payment System. This is evident from the comparison of path coefficients, with organizational

innovation at 0.747 and the Digital Payment System at 0.190 in relation to business sustainability. Therefore, the third hypothesis is accepted, as it satisfies the statistical significance test and aligns with theoretical frameworks and prior empirical findings.

3.4.4 Digital Payment System Positively and Significantly Affects Business Sustainability through Organizational Innovation as a Mediating Variable

Based on the results of the fourth hypothesis test in this study, it is proven that the Digital Payment System has a positive and significant effect on business sustainability through organizational innovation as a mediating variable. Quantitative analysis shows that the T-statistic for this indirect effect is 9.717 with a P-value of 0.000, far exceeding the minimum threshold of 1.660 and 0.05 for a one-tailed test at the 5% significance level. Meanwhile, the original sample (O) value for the indirect path is 0.594. This value indicates that the indirect effect is strongly positive, and quantitatively greater than the direct effect of the Digital Payment System on business sustainability, which is only 0.190.

These findings reinforce the theories of organizational innovation and the digital economy, which suggest that the implementation of new technologies in business yields optimal impact on sustainability when accompanied by organizational adaptation in the form of innovation (Almasria et al., 2024). In the context of creative industry MSMEs, the adoption of a Digital Payment System encourages business actors to innovate in areas such as customer service, distribution systems, digital marketing strategies, and digital product development. These innovations not only enhance customer satisfaction but also strengthen market positioning, improve operational efficiency, and open up new market opportunities.

Therefore, organizational innovation acts as a mediating factor that amplifies the positive impact of payment digitalization on business sustainability. Quantitatively, the contribution of organizational innovation as a mediating variable is reflected in the magnitude of the indirect path coefficient, 0.594. When combined with the direct effect (0.190), it results in a total effect of 0.784 on business sustainability. This indicates that over 75% of the Digital Payment System's contribution to business sustainability occurs through organizational innovation. This illustrates that the success of digital payment system implementation does not solely derive from transaction digitalization, but is largely determined by the MSMEs' ability to innovate organizationally and leverage the potential of digital technologies. Consequently, the fourth hypothesis of this study is accepted, as it satisfies the statistical significance test and is supported by relevant theoretical and empirical evidence.

4. Conclusion

The findings of this study confirm that the Digital Payment System has a significant influence on the business sustainability of creative industry MSMEs in

Yogyakarta, both directly and indirectly through organizational innovation. Although the direct effect of digital payments on business sustainability is moderate, the system has a strong influence on stimulating organizational innovation, which in turn greatly contributes to enhancing business sustainability. The mediating role of innovation is particularly critical, as it amplifies the impact of digital payment adoption by enabling MSMEs to improve customer service, digital marketing, operational efficiency, and product development. These results underscore the importance of combining technological adoption with continuous innovation to ensure long-term competitiveness and adaptability in a rapidly evolving business environment.

In light of these findings, MSME actors are encouraged to further integrate digital payment systems into their operations and actively pursue innovation across business processes. Local governments and related institutions should expand training programs and technological support to enhance both digital literacy and innovation capabilities among MSMEs. Future research is advised to broaden the scope of variables by including other relevant factors such as financial management, product quality, and digital marketing, while also exploring different sectors and regions. Applying mixed-method approaches in future studies can also yield deeper insights into the dynamics of digital transformation and innovation within MSME ecosystems.

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