

## Supply Chain Dynamics: The Effect of Digital Platform Costs on the Financial Performance of MSMEs

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### A R T I C L E I N F O

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### A B S T R A C T

The development of digital platforms, such as Gojek, Grab, and Maxim, has transformed the distribution and supply chain systems for Halal culinary Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. Although digital platforms provide easy market access, platform usage costs often put pressure on profitability and operational efficiency. This study aims to analyze the influence of digital platform costs and supply chain sustainability on the financial and operational performance of halal culinary MSMEs. The research approach employed was a quantitative explanatory design, with data collected through a survey of halal culinary MSMEs that actively use digital platforms. Data analysis was conducted using Structural Equation Modeling (SEM). The results show that digital platform costs significantly influence financial performance, but not operational performance. Conversely, supply chain sustainability does not significantly influence financial performance or operational performance. These findings suggest that the financial performance of MSMEs is more influenced by their cost structure and transaction efficiency through digital platforms than by sustainability initiatives that are still largely administrative and long-term. This study contributes to the digital supply chain management literature by emphasizing the importance of platform cost optimization and the integration of more strategic sustainability practices to increase the competitiveness of halal culinary MSMEs in the current digital economic era.

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## **INTRODUCTION**

In the last decade, digital transactions through the platform economy have become a crucial foundation for global business transformation. The concept of platformization explains how digital platforms act as key intermediaries in the relationships between production, distribution, and consumption, including in the culinary sector. Digital transformation has become a key driver of change in the business models of MSMEs worldwide. The adoption of digital platforms in the culinary sector, particularly for online food delivery (OFD) services, enables MSMEs to increase market access, expand consumer reach, and modernize product distribution methods.(Sharffudin & Yadav, 2025a)OFD provides opportunities for MSMEs to enter the digital supply chain with relatively low initial costs compared to developing their own systems; however, the platform charges varying fees or commissions on each transaction made by MSME partners.

The development of the digital economy and the adoption of technology platforms have transformed the way MSMEs operate, particularly in terms of supply

chains, marketing, distribution, and consumer interactions. Halal culinary MSMEs, as one of the fastest-growing micro-business segments, are increasingly relying on digital platforms like Gojek, Grab, and Maxim to reach a wider market and increase transaction volume. These digital platforms not only facilitate product distribution but also create a new economic ecosystem that encourages the integration of technology into MSME supply chain functions. (Sharffudin & Yadav, 2025a). In a global context, sustainable supply chain management (SSCM) has become a major focus of research due to its potential to improve business performance, including operational efficiency, the triple bottom line (TBL) concept (encompassing economic, social, and environmental aspects), and brand reputation. (Shekarian et al., 2022a) Systematic research indicates that implementing sustainability practices in the supply chain can have a positive impact on a company's performance metrics by integrating environmental, social, and economic aspects. However, the degree of influence varies depending on the business context and the level of digital technology adoption.

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Recent literature indicates that the adoption of digital technology in MSMEs has a positive impact on operational efficiency and financial performance, as evidenced by increased revenue, reduced marketing costs, and faster transaction management. (Rosyidiana & Narsa, 2024a, 2024b) However, the process of integration into the platform economy also creates new challenges, particularly related to the fee structure charged by the platform to MSMEs. (Sharffudin & Yadav, 2025a) For example, commission fees and service charges can erode profit margins, especially for small businesses with limited financial capacity to absorb or pass them on through selling prices. This is relevant because the use of digital platforms by culinary MSMEs is not only related to product distribution but also affects the cost structure and financial flows within the entire digital supply chain. Research on human technology and digital platforms also notes that the platform economy brings about major changes in the relationships between MSMEs, consumers, and other stakeholders in the digital supply chain, including the emergence of fixed and variable costs set by the platform as part of the intermediation model. (Liang & Zhang, 2024a, 2024b).

Literature on supply chain finance and e-commerce demonstrates how the digitalization of supply chains and digital financial systems enhances the financial performance of MSMEs by providing access to capital, improving cost efficiency, and facilitating better cash management. (Guo, 2022). Several empirical studies in the MSME sector also demonstrate that sustainable supply chain practices can enhance operational efficiency, customer satisfaction, and market reputation, ultimately impacting overall business performance. For example, research on culinary MSMEs in West Java found that sustainable supply chain practices have a positive impact on business performance, improving process efficiency, customer satisfaction, and the competitive position of MSMEs in the local market. (Fauzan & Sudrajat, 2025a; Shekarian et al., 2022a)

While numerous studies have examined the adoption of digital technology in general and the use of platforms to expand market reach, understanding how platform costs directly impact the financial performance of halal culinary MSMEs remains relatively limited. Most current literature focuses on indicators of technology adoption or customer perceptions, but few empirically isolate platform costs as a specific cost factor in relation to the financial performance of MSMEs in the halal culinary sector.

Several research gaps were identified based on the literature review, including the general focus on digital technology adoption rather than the platform fee structure directly imposed on MSMEs. Many studies highlight the benefits of digitalization in terms of increased revenue or operational efficiency, but not enough specifically analyze the impact of platform cost components on MSME profitability. (Rosyidiana & Narsa, 2024a)(Sharffudin & Yadav, 2025a). Second, there are limitations to empirical quantitative studies in the halal culinary MSME sector that specifically examine the relationship between platform costs (e.g., commission per order, service fees, internal digital marketing costs) and financial performance (e.g., net profit margin, ROI, cash flow). Much of the literature remains descriptive or conceptual in nature without statistical measurements of the platform cost variables themselves. Third, the context of halal culinary MSMEs, which have their own market characteristics, consumer preferences, and regulations governing production and distribution, is relatively underrepresented in international studies. The halal context is a significant factor that can influence marketing strategies, supply chains, and cost sensitivity in this sector.

This research offers several novel contributions to the literature and practice. It isolates the role of platform costs as an independent variable that directly impacts the financial performance of halal culinary MSMEs using digital platform services such as Gojek, Grab, and Maxim. This focus differs from most previous research on digital technology adoption, which generally examines the topic without explicitly separating platform cost structures as the primary analytical variable. The empirical context focuses on halal culinary MSMEs, a significant economic segment in Muslim countries characterized by distinct consumer and supply chain characteristics compared to the general culinary segment. This research expands the literature on supply chain financial performance in the context of the rapidly growing halal industry, which has received little empirical attention in the international literature.

This study aims to analyze the impact of platform and supply chain costs on the financial and operational performance of halal culinary MSMEs. Therefore, this study offers practical policy implications for MSMEs, digital platform managers, and policymakers on how platform costs can be designed, negotiated, and regulated to enhance MSME economic policies in the digital supply chain without compromising profitability.

Against this background, it is essential to empirically understand the relationship between digital platform costs, supply chain sustainability, and the financial and operational performance of halal culinary MSMEs, thereby filling the existing literature gap and contributing to MSME supply chain strategies in the digital era.

## **THEORETICAL FRAMEWORK AND HYPOTHESES**

## **Theoretical background**

### **Digital Platforms and Their Impact on SME Performance**

The rapid adoption of digital platforms such as Gojek, Grab, and Maxim has significantly transformed the business environment for SMEs, particularly in sectors like food delivery and halal culinary services. Digital platforms serve as intermediaries, providing SMEs with access to a broader market while reducing entry barriers for market penetration (Sharffudin & Yadav, 2025b). However, the costs associated with using these platforms, such as commissions and service fees, can negatively affect the profitability and financial performance of SMEs (Díaz-Arancibia et al., 2024a).

Recent studies suggest that while digital platforms provide operational efficiencies, they also impose financial burdens that may reduce profit margins for SMEs, particularly those with limited financial capacity (Rosyidiana & Narsa, 2024c). This framework considers how the operational benefits from digital platform adoption need to be weighed against the rising platform costs to assess their net effect on SME performance.

### **Supply Chain Sustainability and Its Influence on Performance**

Sustainable supply chain management (SSCM) is another critical factor influencing business performance, especially in terms of long-term growth and market reputation. SSCM involves integrating environmentally friendly and socially responsible practices within supply chain activities (Shekarian et al., 2022b). While sustainable practices may not provide immediate operational efficiencies, they are believed to create long-term benefits, such as improved customer loyalty and reduced resource costs (Kumar et al., 2023a).

For SMEs in the halal culinary sector, SSCM can involve using local, eco-friendly materials, ensuring halal certification, and adhering to sustainable production processes. However, the integration of sustainability into operations often requires substantial upfront investment, which may not immediately translate into improved financial or operational performance (Fauzan & Sudrajat, 2025b).

### **The Role of Platform Costs and Sustainability on Financial and Operational Performance**

The relationship between digital platform costs and business performance is not always straightforward. While digital platforms offer access to larger markets, they charge fees that can erode profits. On the other hand, supply chain sustainability practices, while important for long-term viability, may not immediately affect the financial performance of SMEs (Shekarian et al., 2022b). Therefore, it is essential to explore how these variables interact and affect the operational and financial outcomes of SMEs in the halal culinary sector.

## **HYPOTHESIS DEVELOPMENT**

### **H1: Digital Platform Costs Significantly Affect the Financial Performance of SMEs**

Building on previous research, it is hypothesized that as the costs associated with digital platforms (such as commissions, service fees, and registration fees) increase, the financial performance of SMEs will suffer. These costs can lead to

reduced profit margins and may make it difficult for SMEs to remain competitive in the market. The literature indicates a negative relationship between platform costs and financial performance, as higher transaction fees can erode profitability (Sharffudin & Yadav, 2025b), (Rosyidiana & Narsa, 2024c).

### **H2: Digital Platform Costs Do Not Significantly Affect Operational Performance**

While platform costs can affect profitability, it is expected that they will have less influence on operational performance. Digital platforms offer standardized systems for order management, payment processing, and distribution, which can help SMEs maintain operational efficiency despite the associated costs (Díaz-Arancibia et al., 2024a).

### **H3: Supply Chain Sustainability Has a Positive Effect on Operational Performance**

Sustainable practices in the supply chain, including the use of environmentally friendly raw materials and halal production processes, can improve operational efficiency. Although these practices may require an initial investment, they are expected to yield long-term operational benefits, including process optimization and waste reduction (Kumar et al., 2023b). Therefore, it is hypothesized that supply chain sustainability has a positive influence on operational performance in the halal culinary sector.

### **H4: Supply Chain Sustainability Significantly Affect the Financial Performance of SMEs**

While sustainability can enhance a company's market reputation and operational efficiency in the long run, it may not immediately lead to improvements in financial performance. Halal culinary SMEs may face challenges in translating sustainability initiatives into direct financial gains, especially if consumers are not yet fully aware of these practices (Shekarian et al., 2022b).

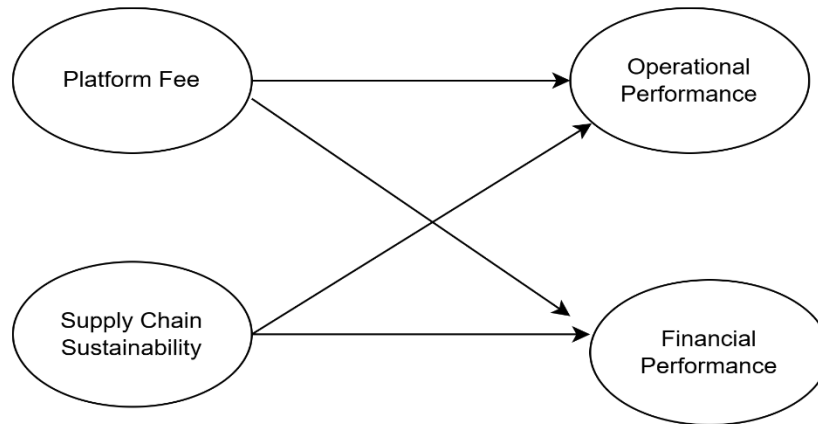
## **METHODS**

### **Research Design**

This study employs a quantitative explanatory approach, aiming to investigate the causal relationship between independent and dependent variables within an empirical context. This approach was chosen because it can explain the influence of digital platform costs and supply chain sustainability on the financial and operational performance of halal culinary MSMEs operating using digital platforms. The explanatory research design also allows for the analysis of direct and indirect relationships between research variables through a structural modeling approach.

The study focuses on the context of halal culinary MSMEs, a sector that plays a crucial role in the national economy, particularly in driving the growth of the halal industry in Indonesia. The use of digital platforms such as Gojek, Grab, and Maxim has become a key strategy for culinary MSMEs to distribute their products to consumers. However, the emergence of platform costs and challenges to supply chain sustainability has consequences for business performance that require scientific

examination. Therefore, this research is expected to provide empirical evidence on these dynamics.



**Figure 1 Research Framework.**

Source: Processed data, 2025

### Population and Sample

The population of this study consisted of all halal culinary MSMEs in Samarinda, East Kalimantan, that utilize digital platforms for product distribution and sales. This population was selected because it represents businesses that actively participate in the digital supply chain ecosystem and are directly affected by platform fee policies.

The research sample was taken using a purposive sampling method, with the following criteria: (1) halal culinary MSMEs that have been operating for at least 6 months; (2) actively using one of the digital platforms (Gojek, Grab, or Maxim) for operational and sales activities; and (3) having a business permit or halal certification from an authorized institution.

Based on the Cochran formula with a population size of 81, a 95% confidence level, and a 5% margin of error, the required sample size is 67 (Abbas, 2022), (Josephs et al., 2024), (Patel, 2024). The sample size used in this study was 67 respondents. This number was selected based on considerations of the Partial Least Squares (PLS)-based Structural Equation Modeling (SEM) model, which requires a minimum of 5–10 times the number of research indicators for valid interpretation of the estimation results.(TomassMHultt, nd). Data were collected through online questionnaires and in-depth interviews by enumerators. The sampling method used is purposive sampling

### Measurement of Variables

**Table 2.1 Operational Definitions**

Variables	Indicator	Source
Operational Performance of MSMEs (Y1)	1. Order Completion Time	(Tumiwa et al., 2023)
	2. Stock Management	
	3. Quality of Service	
	4. Managerial Skills	
MSME Financial Performance (Y2)	1. Profit Margin	(Ika et al., 2025). (Gao et al., 2023)
	2. Net Income	
	3. Cash Flow	
Platform Fee (X1)	1. Platform Commission Fee	(Tendencia, 2022)
	2. Shipping and Service Fees	
	3. Platform Subscription/Registration Fees	
Supply Chain Sustainability (X2) (Analyzing the sustainability of the halal product supply chain of MSMEs.)	1. Use of Local and Environmentally Friendly Raw Materials	(Tendencia, 2022)
	2. Environmentally Friendly Production Process	
	3. Halal Certification and Sustainability	

Source: Processed data

## RESULTS AND DISCUSSION

This study aims to explore the relationship between platform costs, supply chain sustainability, operational performance, and financial performance of MSMEs in Indonesia. Data analysis was conducted using Structural Equation Modeling (SEM) through SmartPLS. Based on the results obtained, this study shows significant findings regarding the influence of platform costs and supply chain sustainability on both aspects of MSME performance.

**Table 3.1 Research Results**

Information	Path Coefficient	P Value
Platform Fees – Financial Performance	0.539	0.000
Platform Cost --- Operational Performance	0.516	0.189

Supply Chain Sustainability---Financial Performance	-0.193	0.345
Supply Chain Sustainability---Operational Performance	0.043	0.808

Based on the results obtained, this study reveals significant findings related to the influence of platform costs and supply chain sustainability, which have a negative but non-significant relationship with the financial performance of MSMEs.

**The Impact of Platform Costs on Financial Performance**

The analysis results indicate that platform fees have a significant influence on the financial performance of MSMEs, with a path coefficient of 0.539 and a p-value of 0.000. This indicates that the higher the fees charged by digital platforms, the greater the impact on MSMEs' profit margins, net income, and cash flow.

Digital platforms provide MSMEs with broad market access, consumer trust, and technological infrastructure that would be difficult to acquire independently. However, heavy reliance on platforms also has the potential to undermine long-term profitability and weaken MSMEs' bargaining position.(Cutolo & Kenney, nd)

The adoption of digital platforms contributes to the development of MSMEs' financial capabilities, including implications for organizational financial performance, increased financial access, and integration into digital supply chains..(Telukdarie et al., 2024). Previous research has shown that digital platforms serve as operational enablers for MSMEs, despite the relatively high costs.(Díaz-Arancibia et al., 2024b). Thus, MSMEs receive platform fees as a consequence of the operational convenience and efficiency they gain. MSME involvement in digital platform groups for MSMEs improves transaction efficiency and business performance, including financial components.(Tandilino et al., 2025) The increased use of digital platforms is generally associated with improved financial performance among MSMEs.(Anatan, 2023).

The impact of digitalization on the financial performance of MSMEs and the influence of digital components on the profitability and performance of small businesses.(Anatan, 2023)

**The Impact of Platform Costs on Operational Performance.**

On the other hand, platform costs did not significantly impact MSME operational performance, with a p-value of 0.189.

The insignificant impact of platform costs on operational performance suggests that MSMEs can maintain their operational processes despite facing cost pressures from digital platforms. Platforms offer relatively standardized systems, including ordering, payment, and distribution, which help MSMEs maintain operational efficiency.

The impact of digital marketing (a key part of the digital platform) on the overall performance of MSMEs, including aspects of efficiency and operational results, shows that the integration of digital tools contributes to improving business performance.(Sharabati et al., 2024)

Overall, digital transformation strategies help MSMEs enhance operational efficiency, contributing to improved operational performance.(Sharabati et al., 2024)

### **The Impact of Supply Chain Sustainability on Operational Performance.**

The lack of a significant relationship between supply chain sustainability and operational performance indicates that sustainability practices have not been effectively integrated into the operational systems of MSMEs. The adoption of environmentally friendly raw materials and halal production processes often requires additional investment, certification, and process changes that do not necessarily lead to improved efficiency in the short term. Many MSMEs implement “sustainable” practices only declaratively or administratively, not operationally.

Sustainable supply chain practices have a direct impact on company performance, which includes operational performance as part of performance outcomes.(Mukhsin & Suryanto, 2022).

*Sustainable supply chain management* and performance improvement is an operational process and efficiency as part of operational performance outcomes.(Rasheed et al., 2023) Literature review meta-analysis confirms that sustainable supply chain practices are generally positively associated with organizational performance, including operational effectiveness.(Shekarian et al., 2022c)

### **The Influence of Supply Chain Sustainability on Financial Performance.**

The research also indicates that supply chain sustainability has no significant impact on the financial performance of MSMEs. This indicates that the financial benefits of sustainability are long-term and highly dependent on consumer awareness and policy support.

Sustainable supply chain management (SSCM) practices are positively correlated with business performance, which encompasses both economic aspects and overall organizational performance, including an implicit financial dimension through increased effectiveness in resource use.(Shekarian et al., 2022d)

## **LIMITATIONS**

The limitations of this study are as follows: First, there is a limited focus on the specific platform cost components, such as commission fees and service charges, despite their significant impact on the financial performance of MSMEs, particularly within the halal culinary sector. While much of the existing literature discusses the broader benefits of digital platform adoption, there is a lack of empirical research that quantitatively analyzes the direct relationship between platform costs and financial outcomes. Second, the study primarily focuses on halal culinary MSMEs in Indonesia, limiting the generalizability of the findings to other regions or sectors with different market dynamics or regulatory environments. Furthermore, the research on the impact of supply chain sustainability on MSME performance shows that sustainable practices have not been effectively integrated into operations, with many MSMEs adopting them only administratively rather than operationally, which limits their

short-term impact. Lastly, the lack of detailed, quantitative analysis of the fee structure and its direct influence on profitability represents a significant gap in the current literature on digital platforms and MSME performance.

## CONCLUSION

This study concludes that digital platform costs significantly influence the financial performance of halal culinary MSMEs, while supply chain sustainability has not shown a significant impact on financial or operational performance. These findings highlight the importance of striking a balance between cost efficiency, digital integration, and sustainability strategies to enhance the competitiveness of halal MSMEs within Indonesia's digital supply chain ecosystem

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