

E-Commerce Distribution Efficiency Analysis to Enhance Culinary MSMEs' Performance in Jabodetabek

Aisyah Indarsari

Politeknik Bisnis Digital Indonesia

Email: aisyahindarsari@polbis.ac.id

Abstract. With the rapid growth of e-commerce in Indonesia, many micro, small, and medium enterprises (MSMEs) have shifted to online platforms to expand their market reach and enhance competitiveness. However, the distribution efficiency of these MSMEs, particularly in the culinary sector, remains underexplored due to challenges related to logistics costs, delivery time, and service quality. This study aims to describe the level of efficiency in the distribution of culinary MSME products through e-commerce platforms in the Greater Jakarta area based on cost, time, service, and output indicators. The research method used was quantitative descriptive, employing a Likert-scale (1–5) questionnaire compiled from the SCOR model, logistics distribution theory, and the Logistics Service Quality (LSQ) and SERVQUAL dimensions. A total of 30 culinary MSMEs that actively use GoFood, GrabFood, and ShopeeFood participated as respondents. The findings show relatively high distribution costs (average 3.16), mainly due to platform commissions and packaging expenses. The distribution time dimension falls under the good category (3.74), while service reliability scored higher (3.87), reflecting customer satisfaction with order accuracy, product condition, and tracking. The output dimension (3.84) indicates growth in sales, reach, and customer satisfaction. An efficiency index of 1.12 confirms that distribution via e-commerce platforms is relatively efficient, as the output outweighs cost and time inputs. These results highlight the strategic role of e-commerce platforms in supporting MSME distribution efficiency, although further optimization of cost management and platform selection is still required to ensure long-term sustainability.

Keywords: culinary MSMEs, distribution efficiency, e-commerce, Jabodetabek, logistics performance

INTRODUCTION

The micro, small, and medium enterprises (MSMEs) sector in Indonesia has shown consistent growth and contributed significantly to the national economy (Ridwan Maksum et al., 2020). This trend aligns with the broader digital transformation in developing countries, where digitalization and e-commerce are creating new opportunities for small businesses to access broader markets, increase productivity, and enhance inclusiveness in global trade (UNCTAD, 2024). In Indonesia, the adoption of digital tools among MSMEs has accelerated since the COVID-19 pandemic, supported by an expanding digital ecosystem and innovative platforms that promote productivity and job creation, positioning the country among the most dynamic digital economies in ASEAN (OECD, 2024).

Based on research conducted by Tampubolon (2023), the most appropriate policy to mitigate health crises, food insecurity, and even potential bankruptcy and mass unemployment is indirectly through supporting MSME businesses. MSMEs play a crucial role in enhancing regional economic growth, and national growth in general (Candraningrat et al., 2021). Statistically, MSMEs contribute to poverty reduction in Indonesia, both directly and indirectly (Nursini, 2020). With MSMEs accounting for nearly 90% of Indonesia's economic cycle annually, the culinary sector has emerged as a dominant contributor in several regions (Abduh et al., 2024).

In recent years, the role of e-commerce platforms has become increasingly important in supporting product distribution, particularly for culinary MSME players. A key component

of these e-commerce platforms is logistics services, acting as vital intermediaries between sellers and end consumers (Harlan et al., 2025). Beyond serving as intermediaries, many small business operators acknowledge that e-commerce platforms offer improved interaction with consumers through better data access, enhanced opportunities for service improvement, and more efficient product distribution (Setyowati et al., 2024). Furthermore, according to Wahyundaru et al. (2024), the adoption of e-commerce by MSMEs serves as a key driver that enhances the efficiency and sustainability of product distribution. By expanding market access and streamlining vendor–customer interactions, e-commerce platforms enable culinary MSMEs to shorten supply chains, reduce delivery times, and improve overall service performance, thereby strengthening business sustainability.

Several studies have revealed the opportunities created through e-commerce, including increased sales (Kusnandar et al., 2023), more efficient distribution (Nahry & Ayu, 2021), and wider market reach with higher consumer engagement (Diatmika & Rahayu, 2025). However, some researchers have also identified various challenges such as food quality issues, driver reliability, poor customer service, and non-user-friendly applications (Juniarty et al., 2025), as well as high commission fees and increased shipping costs (Li & Li, 2025). While these studies have discussed the benefits and constraints of e-commerce, few have examined how these opportunities and challenges collectively influence the efficiency of distribution among culinary MSMEs, particularly within Indonesia’s urban delivery ecosystem.

This complexity is increasingly apparent in the Greater Jakarta area, recognized as the center of e-commerce growth in Indonesia. The concentration of digital business activity in this region reflects its status as the nation’s primary e-commerce hub, accounting for nearly 60–70% of Indonesia’s total online shopping volume (DBS Bank, 2024). Java Island, particularly Greater Jakarta, remains the epicenter of Indonesia’s e-commerce ecosystem, supported by advanced digital infrastructure and the highest density of MSMEs adopting online platforms (Rosmelia et al., 2025). According to Indosat Ooredoo Hutchison (2024), the digital economy has long been driven by metropolitan areas such as Jabodetabek, which continues to serve as the economic powerhouse for digital transformation and innovation. Therefore, a study is needed that not only examines consumer behavior but also explores how distribution efficiency can be achieved by culinary MSMEs through e-commerce platforms.

Several previous studies have discussed distribution through e-commerce, particularly in relation to consumer behavior in using food delivery services. However, studies focusing on distribution efficiency from the perspective of MSME actors remain limited. This issue is crucial, as inefficient distribution can result in higher logistics costs, delivery delays, and decreased customer satisfaction, ultimately weakening MSMEs’ competitiveness in the digital marketplace. Understanding distribution efficiency is therefore essential for MSMEs to manage costs, time, and service quality more effectively. Accordingly, this research provides novelty by examining the micro-level efficiency of distribution processes among culinary MSMEs in Jabodetabek, offering empirical insights that have not been sufficiently addressed in previous studies.

Some earlier studies have focused more on consumer behavior in digital-based food delivery services, such as those by Rombach et al. (2023) and Prasetyo et al. (2021), which investigated factors influencing customer loyalty toward online food delivery applications. Other research has examined logistics efficiency, particularly the challenges of last-mile

delivery in urban areas. However, most of these studies emphasize large retail companies or service provider platforms rather than culinary MSMEs as small business operators. This research gap highlights the need to analyze how culinary MSMEs manage distribution through e-commerce platforms and the extent to which these processes can be considered efficient.

Based on this background, the current study focuses on two main research questions: (1) What are the distribution patterns of culinary MSME products through e-commerce platforms in the Greater Jakarta area? and (2) How efficient is the distribution in terms of cost, time, and consumer satisfaction? The primary objective of this study is to analyze the level of distribution efficiency of culinary MSME products through e-commerce platforms in the Greater Jakarta area. The findings are expected to provide practical insights for MSME practitioners and policymakers in formulating more effective distribution strategies, improving service quality, and enhancing the competitiveness of the culinary e-commerce sector.

MATERIALS AND METHOD

This study employed a quantitative descriptive approach to provide an overview of the efficiency level of culinary MSME product distribution through e-commerce platforms in the Greater Jakarta area. The research focused on culinary MSMEs that marketed their products through e-commerce platforms such as GoFood, GrabFood, ShopeeFood, and Tokopedia. A non-probability convenience sampling technique was used due to limited access to the entire population of culinary MSMEs. Thus, the findings were not intended to be generalized but to offer an initial overview of distribution efficiency patterns among culinary MSMEs in the region. The study involved 30 MSME respondents, which was considered adequate for descriptive and exploratory research based on prior methodological recommendations (Wutich, Beresford, & Bernard, 2024; Ahmed, 2025).

The research instrument consisted of a questionnaire developed based on the SCOR model's performance indicators—reliability, responsiveness, agility, cost, and asset management efficiency (Van Engelenhoven et al., 2023). The items were measured using a five-point Likert scale, following the approach used in previous SCOR-based performance measurement studies (Özkanlısoy & Bulutlar, 2023). Additional dimensions were drawn from Logistics Service Quality (Ogunnowo & Sule, 2021; Do et al., 2023) and SERVQUAL (Abdelaziz & Munawaroh, 2025; Ricardianto et al., 2023). The key indicators included:

1. Distribution cost (platform commission, shipping cost, packaging cost, multi-platform efficiency).
2. Time/speed (lead time, delivery timeliness, driver response time).
3. Service/reliability (order accuracy, product condition, tracking information, complaint rate).
4. Performance/output (sales, market reach, repeat orders, profit margin, customer satisfaction).

Data analysis was conducted using descriptive statistics with Microsoft Excel and SPSS. The mean, standard deviation, and frequency distribution were calculated for each indicator to represent the level of distribution efficiency among culinary MSMEs.

RESULTS AND DISCUSSION

Before discussing the results of the distribution efficiency analysis, this study first explains the characteristics of the respondents. A total of 30 culinary MSMEs in Greater Jakarta participated in the survey. The distribution of respondents based on the most dominant e-commerce platforms used is presented in Table 1 below. This provides an initial overview of the preferences of the distribution platform chosen by MSMEs in running their business.

Table 1. Distribution of Respondents by Dominant Platform

Dominant Platform	Total MSMEs	Percentage (%)
GoFood	10	33.3%
GrabFood	12	40.0%
ShopeeFood	8	26.7%
Total	30	100.0%

Source: Processed researcher (2025)

After explaining the characteristics of the respondents, a descriptive analysis of the research indicators was then carried out, which included distribution costs, distribution time, service/reliability, business output, and efficiency index. Based on the results of a survey of 30 culinary MSMEs in Greater Jakarta, it was obtained that distribution through e-commerce platforms showed a fairly good level of efficiency. A summary of the results of the calculation of the average, standard deviation, minimum value, and maximum for each indicator is shown in the following Table 2:

Table 2. Descriptive Statistics of Indicators of Distribution Efficiency of Culinary MSMEs

Indicators	Average	Std Deviation	Minimum	Maximum
Cost	3.16	0.42	2.52	3.95
Time	3.74	0.49	3.05	4.45
Services	3.87	0.53	3.01	4.78
Output	3.84	0.50	3.04	4.58
Efficiency Index	1.12	0.17	0.82	1.47

Source: Processed researcher (2025)

From the table above, it can be seen that:

1. The distribution cost has an average value of 3.16. This figure shows that most MSMEs still feel the cost burden, especially from platform commissions and packaging costs.
2. Distribution time obtained an average of 3.74, indicating that the delivery speed was relatively maintained despite the congestion constraints.
3. Service/reliability scored 3.87, describing a fairly high level of customer satisfaction regarding order accuracy, product condition, and tracking information.
4. Business output has an average score of 3.84, which means that the use of e-commerce platforms is able to increase sales, expand customer reach, and improve business margins.
5. An Efficiency Index of 1.12 indicates that in general, the output produced by MSMEs is higher than inputs in the form of cost and distribution time. Thus, distribution through e-commerce platforms can be said to be relatively efficient.

Discussion

The findings of this study provide further evidence that the distribution performance of culinary MSMEs in Greater Jakarta is shaped by structural cost factors, platform integration, and customer-oriented logistics services. The relatively high distribution cost (average 3.16) reflects the persistent dependence of MSMEs on third-party platforms that impose commissions and service fees, as previously observed by Li and Li (2025) and Nahry and Ayu (2021). These costs indicate that while digitalization has expanded market reach, it has not yet fully reduced the operational cost burden at the micro-enterprise level. Nevertheless, the moderate to high score on distribution time (average 3.74) suggests that MSMEs have begun to benefit from improved synchronization between sellers, delivery partners, and customers—an outcome consistent with Setyowati et al. (2024) and Wahyundaru et al. (2024), who noted that e-commerce platforms enable faster coordination and reduced delivery delays through integrated digital systems.

In terms of logistics service quality, the findings highlight the growing importance of reliability and responsiveness as perceived by consumers. A service score of 3.87 indicates that customers value consistency in order accuracy, product condition, and tracking transparency—key attributes described in the LSQ framework (Ogunnowo & Sule, 2021; Do et al., 2023). This confirms that customer satisfaction can compensate for moderate cost inefficiencies, aligning with the idea that perceived service reliability directly influences repurchase behavior in online food distribution. Furthermore, the SERVQUAL-based dimensions of responsiveness and assurance (Abdelaziz & Munawaroh, 2025; Ricardianto et al., 2023) appear particularly relevant to MSMEs, as they enhance perceived trust and strengthen consumer retention in competitive delivery environments.

From a performance perspective, the business output score (average 3.84) reveals that digital platforms serve not only as sales channels but also as enablers of growth and visibility for MSMEs. This finding complements prior studies (Kusnandar et al., 2023; Diatmika & Rahayu, 2025) that identified e-commerce as a mechanism for expanding consumer reach and improving market responsiveness. The SCOR-based evaluation (Van Engelenhoven et al., 2023) supports this interpretation: efficiency is not merely a matter of minimizing cost but of achieving operational balance among cost, time, and agility. When viewed holistically, the current findings show that MSMEs can still achieve distribution efficiency despite high-cost components, provided that their service quality and delivery reliability remain strong.

Thus, this discussion underscores a structural paradox within Indonesia's digital economy—where e-commerce offers accessibility and market expansion but introduces new layers of cost and competition. The capacity of MSMEs to remain efficient depends on their ability to leverage logistics partnerships, maintain customer satisfaction, and adapt to platform-based operational models. Further research could explore how technology adoption, environmental sustainability, and logistics innovation influence long-term efficiency, especially as MSMEs navigate the transition toward more data-driven and sustainable supply chain ecosystems.

CONCLUSION

This study aimed to describe the level of efficiency in the distribution of culinary MSME products through e-commerce platforms in Greater Jakarta based on cost, time, service,

and output indicators. The results indicate that distribution costs remain relatively high (average 3.16), mainly due to platform commissions, packaging, and shipping expenses, making cost efficiency a major challenge for MSMEs. However, distribution time was considered relatively good (average 3.74), suggesting that delivery speed can still be maintained despite congestion issues in the Greater Jakarta area. The service dimension achieved a high average score (3.87), reflecting customer satisfaction with order accuracy, product condition, and tracking information. Business output also showed positive results (average 3.84), as e-commerce platforms have helped MSMEs increase sales, expand market reach, and enhance customer relationships. An efficiency index of 1.12 confirms that distribution through e-commerce platforms is relatively efficient, as the resulting output exceeds input costs and time. Future research may extend this study by examining comparative efficiency across different e-commerce platforms or integrating digital logistics technologies to explore their impact on MSME performance sustainability.

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