

Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

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Received : July 10, 2025

Accepted : September 19, 2025

Published : January 31, 2026

Citation: Muhsyi, A., Khusna, K., & Sukarno, H., (2026). Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency. *Ilomata International Journal of Management*, 7(1), 106-119.

<https://doi.org/10.61194/ijjm.v6i4.1870>

ABSTRACT: This study explores the implementation of the Just in Time (JIT) inventory system in coffee shop MSMEs in Jember Regency, East Java, which is renowned as a coffee production center. Facing intense competition from major brands, local coffee shops must optimize inventory management to maintain sustainability. Using a descriptive qualitative approach, data were collected from 14 local coffee shops through in-depth interviews and participant observation. The findings reveal that while some MSMEs have adopted JIT, most face significant obstacles, such as inconsistent coffee quality, fluctuating raw material prices, supplier reliability, and high storage and transportation costs. These constraints hinder comprehensive JIT adoption and may impact operational efficiency. The study suggests that careful supplier selection, effective stock planning, and quality monitoring are essential to overcoming JIT barriers and ensuring sustainable business operations. The findings have practical implications for MSME inventory management and local economic development.

Keywords: Inventory Management, Raw Materials, Just in Time, Coffee Shop.



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INTRODUCTION

One crucial aspect manager must consider is the procurement and inventory system, as it directly impacts the efficiency and effectiveness of production activities. Inventory refers to the stock or storage of goods within a company ([Kaminski et al., 2020](#)). The importance of inventory management for business success and how technology can help improve inventory management ([Manday et al., 2023](#)) In manufacturing companies, the inventory system is divided into three categories, namely raw material stocks, goods that are in the production process, and finished goods that are ready to be sold. The supply of raw materials is crucial in the production process because it is the basis or beginning of the production process, so companies must implement a raw material inventory control policy with the aim of obtaining an optimal inventory level so that the costs incurred can be reduced so that the company can achieve maximum profits ([Abidin & Wiyono, 2017](#)). The availability of raw materials and the production process are factors that influence the quality of the products produced, as these activities can significantly impact the overall quality of a company's output. When the management of raw material inventory and the production process is carried out effectively, the company can reduce the rate of product failure, achieve timely completion of products according to targets, and efficiently manage all processes involved in production ([Noerpratomo, 2018](#)). According to ([I Made Weda Adnyana & I Made](#)

Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

Muhsyi, Khusna and Sukarno

[Sukadana, 2022](#)), the Just-In-Time (JIT) method is an inventory management approach that aligns the supply of raw materials with company policies and consumer demand. ([Wahyuli et al., 2022](#)) state that the Just-In-Time (JIT) inventory system seeks to reduce inventory levels to a minimum and lower inventory-related costs to zero. JIT views excessive inventory as a form of waste and a potential indicator of poor competitiveness, which may result from low product quality and high prices ([Sjahrial et al., 2017](#)).

The MSME industry often experiences various obstacles, especially in the inventory policies they implement, the obstacles experienced usually lead to high and low demand fluctuations, making it difficult to predict and manage inventory reserves. Based on these results, there is one system that can be used to overcome the inventory problem, namely JIT (Just in Time). Given these challenges, the Just in Time (JIT) inventory system emerges as a relevant approach. By minimizing excess inventory, ensuring timely supply, and tightening quality control, JIT can help small coffee businesses reduce financial burdens, improve resource allocation, and build more reliable supplier networks. JIT is an inventory management philosophy that emphasizes on delivering raw materials, parts, and finished products according to demand and not in bulk ([Heizer et al., 2017](#)). Just in time (JIT) is an approach that has benefited the healthcare industry in these regards, improving patient outcomes by reducing waste and non-value-adding activities ([Sjahrial et al., 2017](#)). JIT is a comprehensive inventory management technique that reduces waste and eliminates non-value-added items ([Jinglin, 2015](#)). Applying this method creates a stabilized work schedule and increases productivity ([Siddique, 2021](#)). JIT helps to increase inventory turnover ratios, leading to higher efficiency by preventing products from staying in storage for long periods. In addition, applying JIT saves time; with a smaller inventory, the time spent on ordering, purchasing and managing stock is lowered, which can improve productivity and services. Monitoring and management of inventory can also be improved because of the low number of items in the inventory ([Kaswan et al., 2019](#)). The purpose of implementing JIT is to reduce inventory costs and minimize the risk of over inventory and holding costs. In the implementation of JIT, raw materials and finished products are only ordered and produced according to demand and delivered on time to be used, meaning that this will be in accordance with several problems faced by MSMEs, especially demand fluctuations. The JIT philosophy can be applied to all stages of the production process, from the purchase of raw materials to the delivery of finished products to customers. The purpose of implementing JIT is to improve the efficiency and effectiveness of the production process by reducing inventory costs and minimizing the risk of overstock.

MSMEs are the largest contributors to labor absorption, namely 96% and contribute more than 60% to Indonesia's GDP ([Kemenko Perekonomian, 2022](#)). The number of MSMEs in Jember district itself is approximately 14,000 spreads across 226 villages ([Syahputri & Awwaliyah, 2022](#)). The MSME industry in the coffee sector is a leading commodity by the Jember district government because it has entered the export market ([Septianingtyas Purwandhini et al., 2023](#)). Because coffee is a leading commodity in Jember Regency, the number of MSME actors in this sector is quite large, there are at least 1000 MSMEs engaged in this field in Jember regency as of 2021 ([Jember, 2021](#)). So that the problem of storage for MSME players, especially the industry in the coffee sector, needs further attention, because with the maximum inventory system implemented, it will

Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

Muhsyi, Khusna and Sukarno

certainly bring businesspeople to production efficiency and control raw materials and minimize the waste of holding costs.

Jember is one of the coffee centers in East Java. Coffee shop MSMEs in Jember Regency face several challenges that hinder operational efficiency. First, although Jember is recognized as a coffee production center, the quality of coffee beans supplied to local shops is often inconsistent, making it difficult to maintain product standards. The inconsistency in the quality of coffee beans, primarily Robusta and Liberica, hampers product standardization, as highlighted by the lower production quality compared to other regions (Putra & Pratita, n.d.). Second, raw material prices, particularly coffee and complementary ingredients, fluctuate sharply, creating instability in production costs. Making inventory management a critical issue (Aziz et al., 2023). Third, supplier reliability remains uncertain, both in terms of supply continuity and delivery timeliness. Fourth, storage and transportation costs are relatively high for small businesses, which reduces profit margins (Pardede & Sinaga, 2020). These factors make inventory management a serious challenge for the sustainability of local coffee shops. Many types of Robusta and Liberica coffee are produced by this area. But lately, the existence of coffee shops has begun to be threatened by the presence of big brands that enter this area. In Jember Regency, coffee shops have proliferated rapidly over the past decade in response to shifting consumer lifestyles and the region's reputation as a coffee-producing hub. However, this growth has not always been accompanied by business sustainability. According to data from the East Java Cooperative and MSME Office, more than 30% of coffee shop MSMEs established between 2018 and 2022 in East Java were no longer operating by 2023, with a significant portion reported in Jember and surrounding districts. Local business associations also note that closures are often linked to inefficiencies in inventory management, particularly in handling fluctuating raw material prices and inconsistent coffee supply chains. Finally, many local coffee shops closed because they lost to big brands with a good supply system entering Jember. On the other hand, this local coffee shop has been stimulating the coffee ecosystem in Jember. Many of the coffee from farmers are purchased by local coffee shops.

In the context of competing with larger brands that possess more established supply chains, the implementation of the Just in Time (JIT) system is increasingly urgent for MSMEs in Jember. JIT enables the reduction of storage costs, improvement of raw material flow efficiency, and tighter quality control. By minimizing excess inventory, MSMEs can ease financial burdens and allocate capital more productively. Moreover, JIT adoption can strengthen long-term relationships with reliable suppliers, thereby enhancing competitiveness and ensuring business sustainability in the dynamic coffee market. This evidence highlights a research gap: while the rise and decline of coffee shops are visible at the regional level, limited scholarly work has examined how inventory management practices, especially the potential application of Just in Time (JIT), affect business survival among small coffee enterprises. Addressing this gap is crucial for understanding the operational barriers of MSMEs and for developing strategies that enhance their long-term competitiveness.

This study aims to: (1) identify the specific barriers faced by coffee shop MSMEs in Jember in adopting the JIT system; (2) analyze the urgency and relevance of JIT implementation as an inventory management strategy; and (3) provide practical recommendations to overcome JIT adoption barriers. The contribution of this study lies in offering empirical insights into the

Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

Muhsyi, Khusna and Sukarno

dynamics of JIT implementation within MSMEs, particularly in the local coffee industry, while also providing both conceptual and practical foundations for inventory management policies and regional economic development

METHOD

This study employed a descriptive qualitative approach to explore barriers to implementing the Just in Time (JIT) inventory system among coffee shop MSMEs in Jember Regency. The research subjects were 14 local coffee shops, selected purposively to represent variations in business scale and supply chain practices. Data were collected through semi-structured interviews with owners and managers, supported by participant observation to capture actual inventory practices. Thematic analysis was applied to identify recurring patterns and critical issues related to JIT adoption. To enhance validity, triangulation was conducted by cross-checking interview data with observation notes and secondary information from local MSME associations. This methodological design ensures a systematic investigation of the problem, focusing on how coffee shop MSMEs manage their inventory and the specific constraints they encounter in adopting JIT principles.

The method This study uses a qualitative research method, namely with a descriptive-qualitative approach and explores information about the application of the inventory system in Coffee Shop MSMEs in Jember Regency. The subject of the study is MSMEs of Local Coffee Shops in Jember Regency who pay attention to the availability of raw materials and the shop has not opened branches in other districts. The object of the research is the inventory method carried out by local Coffee Shop MSMEs in Jember Regency.

Informants were determined using the snowball technique, starting from a key informant, Mr. Miftakhul Fauzi, Head of Production and Business Restructuring at the Jember Regency Office of Cooperatives and Micro Enterprises. He provided a list of 32 coffee shop MSMEs operating across different sub-districts in Jember. From this list, 14 shop owners/managers were selected based on the following inclusion criteria: (1) actively operating for at least two years, (2) directly involved in inventory management decisions, and (3) representing variations in business scale. The final set of 14 informants was identified through snowball referrals from the initial list, ensuring relevance to the research theme.

Data were collected through in-depth interviews with owners, managers, and selected staff of coffee shop MSMEs. The interviews were designed to capture their perceptions and experiences regarding the implementation of JIT in raw material inventory. This approach provided detailed insights into the practical obstacles faced by MSMEs, as well as the impact of these challenges on sales turnover and raw material availability.

Researchers can also observe participants to obtain information about the process of ordering raw materials, raw material stocks, and production. These observations can help researchers understand how internal processes work and gain more detailed information about the problems faced by the shopkeeper. By combining the results of interviews and observations, researchers can have a comprehensive picture of potential obstacles in JIT implementation and understand the

Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

Muhsyi, Khusna and Sukarno

perceptions and experiences of actors in this process. This research can help understand how Coffee Shop MSMEs can solve obstacles and improve the process of ordering raw materials and purchasing. Researchers can also make direct observations at the Coffee Shop to obtain information about the process of ordering raw materials and raw material stocks. By combining information from surveys and direct observations, researchers can have a comprehensive picture of the obstacles faced by Kedai Kopi MSMEs and find solutions to overcome these problems.

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The determination of informants uses the snowball technique. The key informant is Mr. Miftakhul Fauzi (Fauzi) as the Head of Production and Business Restructuring at the Jember Regency Cooperatives and Micro Enterprises Office. Where Mr. Fauzi provided a list of local Coffee Shop MSMEs in Jember Regency. It is known that all MSME coffee shops number 32 shops and are spread across various sub-districts. From the snowball technique, information was obtained on the addresses of 14 out of 32 shops. Furthermore, information related to the theme of this research was carried out on 14 shop owners-managers.

This research was conducted in Jember Regency, a district located in East Java Province, Indonesia. Based on data obtained from Mr. Fauzi (Jember Regency Cooperatives and Micro Enterprises Office), the data collected in this study includes 9 coffee shops spread across 9 sub-districts of Jember Regency. This Coffee MSME was chosen as a representation of the MSME sector in Jember Regency, which has an important role in the local economy.

The data collection technique is an in-depth interview technique that is narrative and descriptive and seeks to understand and explain the phenomenon studied in the context of handling preparations for the smooth operation of a coffee shop. Researchers can also observe participants to obtain information about the process of ordering raw materials, raw material stocks, and production. By combining the results of interviews and observations, researchers can have a comprehensive picture of potential obstacles in JIT implementation and understand the perceptions and experiences of actors in this process.

This study applied triangulation to strengthen the credibility of findings by comparing data from multiple sources and techniques. Data from in-depth interviews were cross-checked with participant observations and secondary documents obtained from the Cooperatives and MSME Office. The analysis was carried out through three main steps: (1) data reduction by summarizing key themes from interview transcripts and observation notes, (2) data display in thematic categories related to JIT implementation barriers, and (3) conclusion drawing and verification by re-checking consistency across sources. This process ensured that the identified obstacles to JIT adoption among coffee shop MSMEs were validated and contextually grounded.

RESULT AND DISCUSSION

According to Mursyidi (Mursyidi, 2018), just in time emphasizes on the purchase of raw materials that are in accordance with the needs of the production process, no less and no more at the time when the ingredients are needed to make the ordered product. The goal of just in time is to reduce waste. Through the just-in-time method, companies can reduce storage costs and reduce the possibility of damage or losses due to stockpiling raw material inventory in warehouses. This is because the inventory of raw materials in a warehouse is considered one of waste, which sometimes entails storage costs.

The concept of Just in Time (JIT) is a concept of change that takes place continuously and is process oriented. The JIT concept tries to reduce or even eliminate waste in the inventory system so that productivity optimization occurs. The most basic concept in the implementation of JIT is very simple, which is to carry out the production process if there is a consumer demand (pull system). The data obtained from 14 coffee shops in Jember Regency were analyzed by relying on theoretical propositions, namely basing the data and information obtained on theories related to the implementation of the JIT concept, as well as the obstacles faced in implementing JIT in each coffee shop. Based on the results of in-depth interviews, it is known that the method of raw material inventory carried out by the informant can be described through the table below.

Table 1. Interview Results on MSMEs Coffee Shops in Jember Regency

No	Coffee Shop Name	Supplier	Inventory Valuation Method	Coffee Inventory Control Methods	JIT Implementation Constraints
1	Kedai Kopi Pak Yon	Directly from farmers who have family ties.	FIFO	JIT	Quality of coffee stock Economic conditions
2	Kopi Kisah Sarinah	Directly from Sarinah's Story Team Partners	FIFO	JIT	Kondisi ekonomi karena Kenaikan Harga Kuantitas stok kopi lokal yang kurang
3	Kedai Kopi Renggan is	Directly from farmers who have MOUs	FIFO	JIT	Economic conditions due to Price Increases Insufficient quantity of local coffee stock
4	Kedai Kopi RKB	Own Property	FIFO	JIT	Economic conditions due to the increase in coffee prices
5	Kedai Kopi JCC	JCC's Farmer Group Merger	LIFO	JIT	Very small quantity of local coffee stock Leadtime from off-island shipments that take too long Increase in raw material prices Shipping costs

Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

Muhsyi, Khusna and Sukarno

No	Coffee Shop Name	Supplier	Inventory Valuation Method	Coffee Inventory Control Methods	JIT Implementation Constraints
6	Kedai Kopi Ayo Rene Cafe	Local roasters in Jember and suppliers from outside the city.	FIFO	LFL	Shipping Costs Leadtime yang lama
7	Kedai Kopi Wedang Koffie Ambulu	Local Roaster Jember Mastrip and Panti	FIFO	EOQ ROP	Increase in raw materials Leadtime dari supplier
8	Kedai Kopi Ruang Rindu	Local Roaster Jember	FIFO	EOQ	Increase in raw material prices
9	Kedai Kopi Karya Gunitir	Roaster Owned by the Karya Karya Gunitir group	FIFO	JIT	Increase in Raw Material Prices
10	Kedai Kopi Titik Balik	Several suppliers, local, national, and foreign	FIFO	POQ ROP	Long delivery lead time Increase in raw material prices Local Coffee stock that does not meet specifications
11	Kedai Kopi Birdnest	Roaster is owned by Outside Jember.	FIFO	JIT	Raw material quantity
12	Kedai Kopi Naga 99	Several suppliers, Local and Out-of-town	FIFO	LFL	Leadtime raw material Price Increase
13	Kedai Kopi Eterno	Supplier partners outside Jember	LIFO	JIT	Increase in raw material prices
14	Kedai Kopi Empat Sore	Roaster lokal Cak Wang	FIFO	LFL	Quality of coffee stock Increase in raw material prices

Source: Primary Data Processed, 2023

The findings reveal four main obstacles to implementing JIT among the 14 coffee shops studied. First, raw material availability is uncertain, as suppliers occasionally run out of green bean coffee. Second, information flow is slow and often inaccurate, especially regarding order changes. Third,

Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

Muhsyi, Khusna and Sukarno

quality control is affected by external conditions of shop owners, which influence the consistency of raw materials. Finally, inventory management practices remain limited, leading to difficulties in balancing supply with fluctuating demand.

Among these, raw material availability and information flow were identified as the most critical barriers, as they directly hinder the core principle of JIT—ensuring timely and reliable supply. Without overcoming these challenges, coffee shops in Jember face difficulties in reducing storage costs, maintaining product quality, and sustaining efficient operations. Overall, these constraints also more or less affect the implementation of the JIT method. These obstacles make it difficult to implement the JIT method comprehensively. Based on the assessment of JIT implementation, 57% of the coffee shops have applied certain JIT practices, such as reducing excess inventory and relying on frequent supplier deliveries, although none have implemented the system comprehensively. Their adoption can be considered partially effective in addressing storage and cost issues, but full effectiveness has yet to be achieved due to persistent supplier and quality challenges. According to Tjiptono and Diana ([Tjiptono & Diana, 2001](#)), just in time identify the causes of waste and implement strategies to minimize the time interval from the start of the product process until the product is completed and delivered to the customer. The study found both similarities and differences in the obstacles faced by coffee shops that applied JIT and those that did not. For shops already implementing JIT practices, the main challenges were maintaining consistent coffee quality, adapting to changing customer preferences, and managing higher shipping costs from outside Jember. In contrast, shops that had not yet adopted JIT faced more fundamental barriers, such as unreliable supplier capacity, longer lead times, and high storage costs.

Overall, the comparison suggests that JIT adopters struggle primarily with external market dynamics (quality consistency, customer demand, shipping), while non-adopters are constrained by internal supply chain limitations (stock availability, storage, and delivery time). This indicates that while JIT can reduce certain internal inefficiencies, its effectiveness is highly dependent on the stability of suppliers and external cost factors.

The findings of this study indicate that the implementation of the Just in Time (JIT) concept in coffee shops in Jember faces complex challenges, which are not only related to the technical aspects of raw material storage but also to supply chain reliability, cost dynamics, and demand uncertainty. From the supply chain perspective, coffee shops are highly dependent on the consistency of quality and availability of raw materials from suppliers. However, the quality of green beans is often inconsistent, especially when the beans have been stored for too long at the supplier's warehouse. One informant explained, "Sometimes the beans we receive taste flat, as if they've been stored too long, and customers can immediately notice the difference." This situation reflects a misalignment with JIT principles, which require timely delivery and consistent quality. Dependence on a limited number of suppliers also increases vulnerability, as stock shortages at the supplier level may quickly disrupt coffee shop operations. This finding resonates with supply chain theory, which emphasizes the importance of supplier diversification and resilient supply systems ([Seth et al., 2008](#)).

In addition to supply chain issues, another challenge arises from operational costs. Storing beans in large quantities increases warehouse costs, while purchasing smaller, more frequent batches—

Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

Muhsyi, Khusna and Sukarno

aligned with JIT—raises logistical costs, particularly shipping costs from outside Jember. These financial pressures are further intensified by the volatility of coffee prices, which are influenced by seasonal, climatic, and global market factors. As one coffee shop owner noted, “The price of beans changes all the time. If we buy in bulk, the risk is spoilage; if we buy too little, sometimes we run out of stock and disappoint customers.” This illustrates the limitations of JIT in small businesses, which often lack the financial buffer to absorb price volatility. The literature on JIT highlights that such systems may sacrifice economies of scale and increase unit costs due to higher delivery frequency.

On the demand side, fluctuating customer preferences add another layer of complexity. Coffee demand is shaped not only by menu variety but also by seasonal changes and lifestyle trends. One coffee shop owner explained, “During the rainy season, hot coffee sells more, but when it’s hot, suddenly the demand shifts to cold brew. We cannot always adjust our stock that fast.” This illustrates a gap between the JIT principle of producing or purchasing goods strictly as needed and the rapid changes in consumer demand. Prior studies in supply chain management have also acknowledged that demand volatility weakens JIT effectiveness, especially in food and beverage industries where preferences are highly influenced by external factors.

These findings provide significant theoretical and practical implications. Theoretically, this study contributes to the discourse on JIT implementation in small-scale businesses by highlighting that success depends not only on operational efficiency but also on building supply chain resilience. Recent literature on supply chain resilience ([Kamalahmadi & Parast, 2016](#)) emphasizes flexibility, robustness, and adaptability to maintain continuity under uncertainty. Our study suggests that for coffee shop MSMEs in Jember, JIT can only succeed if combined with resilience strategies such as supplier diversification, contingency planning, and simple demand forecasting tools.

The findings of this study reveal that the most pressing obstacles to JIT implementation in coffee shops are related to raw material quality degradation during storage, supplier reliability, fluctuating demand, and economic instability. Specifically, the problem of green bean oxidation when stored too long illustrates the vulnerability of coffee quality to warehouse-related constraints. This aligns with previous studies emphasizing that JIT systems are designed to minimize such risks by reducing inventory holding time and fostering synchronized supplier relationships ([Cheng & Podolsky, 1996](#)) ([Schonberger, 2007](#)). In this regard, the current results highlight that the persistence of quality issues in Jember’s coffee shops stems not from the JIT concept itself, but from insufficient integration between shops and suppliers.

In JIT theory, strong supplier coordination is essential to ensure continuous supply without overstocking ([Ohno & Bodek, 2019](#)). However, the evidence from Jember suggests that supplier inconsistency—such as unreliable stock of green beans and variation in quality—creates a bottleneck that undermines JIT’s effectiveness. This indicates that MSMEs in the coffee sector still struggle to establish long-term, trust-based supplier partnerships, which are critical to lean supply chain success ([Jones, 1995](#)). Strengthening supplier relationships through contractual agreements, information sharing, and joint planning would therefore mitigate the very issues observed in this study.

Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

Muhsyi, Khusna and Sukarno

Another obstacle identified relates to fluctuating consumer demand and diverse taste preferences. From a JIT perspective, this highlights the need for flexible production planning and responsive procurement systems. Prior research has shown that demand variability is one of the most significant threats to JIT implementation in small enterprises ([Zailani & Rajagopal, 2005](#)). Therefore, strategies such as demand forecasting using point-of-sale data, or collaborative planning with suppliers, are crucial for adapting JIT principles to the volatile context of coffee consumption.

Theoretically, these findings contribute to the literature by demonstrating how JIT obstacles manifest in micro-scale enterprises, where constraints such as limited storage facilities and dependence on local suppliers are more pronounced than in large-scale manufacturing. Practically, the study suggests that MSMEs must not only adopt JIT principles in inventory control but also adapt them by building relational supply networks and employing simple but effective forecasting tools. This dual strategy ensures that JIT becomes not merely a cost-reduction mechanism but also a resilience-building approach for small businesses in volatile markets.

Practically, this study underscores the need for supportive institutional and policy interventions to enhance the sustainability of coffee MSMEs. Local governments and coffee business associations could provide training in lean management and basic forecasting, create collaborative supplier-buyer platforms, and facilitate more affordable logistics solutions. For business owners, adaptive strategies such as using sales data for demand prediction, maintaining limited buffer stock for best-selling coffee variants, and renegotiating supplier agreements to secure consistent quality could enhance the effectiveness of JIT.

In summary, this discussion highlights that JIT implementation in the context of small-scale coffee businesses is not merely a technical issue of when and how much to order but involves the interplay between supply chain structure, cost management, and consumer preferences. This study reinforces the view that JIT in MSMEs requires contextual adaptation and institutional support in order to function effectively.

Findings in the field show that most of the Local Coffee Shops in Jember Regency have not implemented the Just in Time method to manage raw material inventory. The practical advice is to provide further assistance to Coffee Shop MSMEs to overcome the obstacles to implementing this method. Theoretically, the phenomenon of the existence of Coffee Shop MSMEs needs deeper attention in the academic literature, especially related to the quality management of coffee raw materials. Follow-up research can explore how to store unique coffee raw materials for MSMEs to maintain their quality, which is an interesting finding in field research. Field findings indicate that most local coffee shops in Jember Regency have not adopted the Just in Time (JIT) method for managing raw material inventory. While the obstacles have been identified, it is important to analyze why these barriers persist and how they can be categorized to strengthen the recommendation. The evidence suggests that the barriers to JIT adoption can be grouped into three categories: structural, behavioral, and logistical.

Structural barriers relate to the limited organizational capacity of MSMEs. Many coffee shops operate with minimal infrastructure, including small storage areas, limited financial resources, and an absence of formal supplier contracts. These conditions make it difficult for them to establish the synchronized supply chain relationships that JIT requires. Behavioral barriers arise from

Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

Muhsyi, Khusna and Sukarno

managerial practices and perceptions. Some coffee shop owners tend to rely on traditional procurement methods and maintain a “safety stock” mentality, reflecting a lack of trust in suppliers’ ability to deliver consistently. This behavioral tendency contradicts the JIT principle of reducing inventory buffers and increases resistance to adopting leaner practices.

Logistical barriers are associated with external factors such as inconsistent supplier quality, fluctuating demand, and high transportation costs, especially for shops outside the Jember city center. These issues create uncertainty in delivery schedules and inventory availability, undermining the feasibility of JIT implementation in practice. By organizing the obstacles into these categories, the recommendations for MSMEs become more actionable. For structural issues, policy-level interventions such as financial support or cooperative purchasing schemes can strengthen MSMEs’ bargaining power and infrastructure. For behavioral barriers, capacity-building programs and training in inventory management are essential to shift owner mindsets toward lean practices. For logistical challenges, fostering stronger supplier relationships and collaborative planning can reduce uncertainty in supply chains.

Theoretically, this study highlights the need to extend JIT literature into the MSME context, where barriers are not only technical but also behavioral and structural. Practically, the typology of barriers provides a clearer roadmap for policymakers, industry associations, and MSME actors to design targeted interventions. Future research could further explore how unique coffee raw materials can be stored and managed in small enterprises to preserve quality, which remains a novel insight from this fieldwork.

CONCLUSION

This study found that the implementation of Just in Time (JIT) in coffee shops in Jember is hindered by several key obstacles: (1) inconsistent quality and availability of green beans at the supplier level, (2) high storage and logistics costs due to fluctuating purchase volumes, (3) vulnerability to external factors such as price volatility and economic conditions, and (4) fluctuating customer demand shaped by trends and seasonality. These findings highlight that JIT practices in small-scale coffee businesses are not only constrained by internal operational capacities but also by broader supply chain and market dynamics.

To address these challenges, several actionable recommendations are proposed. First, building long-term partnerships with reliable suppliers is crucial to ensure consistent quality and timely delivery, which can mitigate disruptions often associated with JIT practices ([Sodhi, 2023](#)). Second, coffee shops should adopt simple demand forecasting tools based on historical sales to anticipate shifts in customer preferences and aligning supply with demand ([Trapero & Pedregal, 2012](#)) ([Chen et al., 2024](#)). Third, maintaining a limited buffer stock for best-selling variants can reduce the risk of shortages without fully contradicting JIT principles, thereby reducing the risk of shortages ([Sodhi, 2023](#)). Fourth, collaboration among coffee shops for collective purchasing and shared logistics could help reduce transportation costs and enhancing overall supply chain efficiency ([Pal, 2023](#)). These measures directly respond to the identified obstacles and provide more practical pathways for improving JIT implementation in this sector.

Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

Muhsyi, Khusna and Sukarno

Theoretically, this study contributes to the literature by contextualizing JIT within the realities of micro and small enterprises (MSMEs) in the food and beverage industry, showing that effective implementation requires a balance between efficiency and resilience. It extends supply chain management theory by highlighting that JIT in resource-constrained MSMEs cannot be understood merely as an operational tool, but as a dynamic system influenced by supplier reliability, demand volatility, and financial constraints.

Practically, the findings offer guidance for coffee shop owners, supplier networks, and policymakers. For business owners, the study demonstrates the importance of adaptive inventory practices and supplier collaboration. For policymakers, the results emphasize the need for interventions such as training in lean management, support for logistics infrastructure, and programs to stabilize supplier–buyer relationships.

This study is not without limitations. The research was geographically limited to coffee shops in Jember, which may restrict the generalizability of findings to other regions or industries. In addition, the study primarily relied on qualitative data, which may not capture the full extent of cost and efficiency implications of JIT implementation. Future research should employ mixed methods, combining financial data analysis with qualitative insights, and expand to other sectors of MSMEs to validate and refine the proposed recommendations.

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Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency

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