Al-Kharaj: Journal of Islamic Economic and Business
Volume 8 (3), 2026: xxx - xxx
P-ISSN: 2686-262X; E-ISSN: 2685-9300

Supply Chain Management of Ginger Coffee at UD Bintang Surayyah, Palu : A Qualitative Case Study

Zulfadli Romi Lakadjo[1], Fatlina Zainuddin[2], Syamsuddin[3], Suryadi Hadi[4]
[1,2,3,4]*Tadulako University, Indonesia*
Email: zulfadlilakadjo@gmail.com,

***Keywords**: Supply chain management, ginger coffee, inventory control, distribution*

Abstract

***purpose:** This study aims to examine the ginger coffee supply chain management at UD Bintang Surayyah, identify the main challenges, and develop appropriate strategies to improve the effectiveness of sustainable supply chain management. **Methods**: This study is a qualitative study using a descriptive approach with observation, interviews, and documentation as research methods. The informants in this study were selected through purposive sampling and consisted of business owners, farmers, and retailers; their responses were then analyzed using triangulation.. **Results**: The research findings show that the ginger supply chain at UD Bintang Surayyah consists of upstream, internal, and downstream segments involving farmers, production facilities, retailers, and consumers. The main challenges identified include inconsistent quality of ginger raw materials, high prices for ginger raw materials due to competition for supply from other businesses, a weak inventory control system, and high distribution costs and lead times. Building stronger partnerships with farmers through formal cooperation agreements, implementing a more structured system for demand forecasting and inventory control, and optimizing the distribution system are expected to be strategies that improve operational efficiency and support business sustainability. **Implications**: The study is expected to provide practical implications for MSME operators in improving operational efficiency and business sustainability through better supply chain management.*

INTRODUCTION

In the context of MSME operations management, supply chain management is one of the critical aspects that determine business sustainability. Supply chain management is an integrated and coordinated process that involves various parties in the supply chain, including suppliers, manufacturers, distributors, and customers. This process aims to achieve operational efficiency, improve the flow of information, provide added value to customers, and enhance the long-term performance of the company and the supply chain as a whole (Hani Sirine, 2024). In general, supply chain management encompasses three main components: the upstream supply chain, the internal supply chain, and the downstream supply chain. (Nursani & Rachman, 2022). This concept warrants further examination in the context of MSMEs, which are characterized by simpler supply chains but are vulnerable to fluctuations in demand and supply. Supply chain management will be one approach that can serve as a strategy for gaining a competitive edge in the market (Calystania et al., 2022). The implementation of supply chain management in the MSME sector faces various challenges, such as high costs, regulatory complexity, dependence on suppliers, and resistance to organizational change. This situation makes it difficult for MSMEs to grow their businesses and meet market demand on a sustainable basis, as it leads to inconsistent supplies of raw materials and other product constraints. (Simanjuntak et al., 2025).

The application of this supply chain management concept is worth examining in the context of food-processing MSMEs in Indonesia. One such MSME is UD Bintang Surayyah, which produces processed goods made from coffee and ginger. Based on preliminary observational data, production activity over the course of a year shows fluctuations, with production capacity ranging from 50 kg to 150 kg per month depending on market demand. Demand is generally highest during certain months that coincide with long holidays, such as during Ramadan and the end of the year.. Based on the same observations, a number of challenges were identified in the management of the coffee and ginger raw material supply chains. At certain times, the ginger received did not meet production standards because supplier farmers harvested it earlier than scheduled, while coffee raw materials were procured at relatively high prices due to strong demand from various other businesses. Second, businesses face difficulties in accurately forecasting their raw material needs because inventory control is not yet functioning effectively. Third, there is a greater likelihood of supply delays and higher distribution costs because suppliers are located three to four hours away by road. This situation indicates that the company's operational effectiveness may be hampered by fundamental supply chain management issues.

The situation faced by UD Bintang Surayyah actually reflects a broader issue within Indonesia's MSME ecosystem. Micro, small, and medium-sized enterprises commonly abbreviated as MSMEs are a strategic sector of the Indonesian economy that plays a major role in job creation and contributes significantly to GDP (Munthe et al., 2023). According to data from the Ministry of Cooperatives and SMEs for 2024, the number of MSMEs in Indonesia has reached 64.2 million business units and continues to grow each year, with the raw materials trade and food production sectors being the largest among all sectors (Hapsari et al., 2024). In general, MSMEs are classified based on the size of their assets and annual revenue, as stipulated in Law No. 20 of 2008, whereby micro enterprises have assets of up to Rp50 million and annual revenue of up to Rp300 million, small enterprises have assets ranging from more than Rp50 million to Rp500 million with annual revenue of Rp300 million to Rp2.5 billion, and medium-sized enterprises have assets ranging from more than Rp500 million to Rp10 billion with annual revenue of Rp2.5 billion to Rp50 billion.. Although MSMEs play a significant role in economic activity, they still face various challenges in running their businesses, particularly with regard to operational management. One of the main challenges is the suboptimal implementation of efficient supply chain management, which affects the smooth flow of production and the overall sustainability of the business. (Hanif et al., 2023).

Although this issue is quite critical, research on the supply chain management of coffee and ginger in food-processing MSMEs, particularly in the city of Palu, remains very limited. A study by Suarini & Laksmayani (2024) analyzed ginger inventory management with a focus on raw material inventory, but did not examine supply chain management comprehensively. In another study conducted by Tanjung et al (2025), although it addressed ginger supply chain management, the study was conducted in Karanganyar Regency, which has different characteristics from the study location; furthermore, the study focused more on the farmer and marketing institution levels and did not specifically address supply chain management at the level of processing MSMEs. Therefore, a more comprehensive study is needed on the characteristics, challenges, and prospects for strengthening the ginger supply chain in small businesses to address this research gap.

Given this context, the objective of this study is to examine ginger supply chain management at UD Bintang Surayyah in Palu City. This study specifically aims to: (1) identify the coffee and ginger supply chain from suppliers to consumers as finished products; (2) examine the main challenges in supply chain management; and (3) develop a plan to improve the effectiveness of sustainable supply chain management for UD Bintang Surayyah. The results of this study are expected to contribute to our understanding of supply chain management in small-scale food and beverage processing companies and to provide useful recommendations for MSMEs.

METHODS

This study employs a qualitative approach with a descriptive design; the purpose of this study is to understand and describe in depth the phenomenon of ginger supply chain management at UD Bintang Surayyah in Palu City, Central Sulawesi, as it exists in its real-world context. The research was conducted from April to June 2026. The research site was selected purposefully—namely, UD Bintang Surayyah in Palu City based on the consideration that this business unit represents the phenomenon of ginger-processing MSMEs that face real and observable supply chain management complexities. The selection of these locations was also based on data accessibility and the informants' willingness to participate in the research process.

Informants were selected using purposive sampling, based on the criterion that they were parties directly involved in the supply chain of UD Bintang Surayyah, which consists of: (1) business owners, as the key players who understand the entire production and distribution system; (2) farmers who supply ginger as raw material, as upstream stakeholders who have information about the primary production process and shipping patterns; (3) retailers, as downstream partners who provide insights into demand dynamics and distribution patterns; and (4) consumers, the ultimate decision-makers and evaluators of the entire supply chain management system. The number of informants was determined based on the principle of data sufficiency; that is, the study was terminated once the information obtained had reached data saturation.

Data collection was conducted using three complementary techniques: (1) in-depth interviews using a semi-structured interview guide, to explore the informants' experiences, knowledge, and perspectives in a flexible and contextual manner; (2) direct observation of supply chain operations, from the receipt of raw materials through the production process to product distribution; and (3) a review of production records, shipping data, and other relevant business documents. The collected data was analyzed thematically through three stages: data reduction, presentation, and drawing conclusions. To ensure the credibility of the findings, this study employed source triangulation verifying the consistency of data obtained from the three groups of informants (business owners, farmers, retailers, and consumers) as well as methodological triangulation by comparing data from interviews, observations, and documentation..

RESULTS AND DISCUSSION

Supply Chain Flow

Based on the results of observations and interviews conducted at UD Bintang Surayyah, it was found that the ginger supply chain consists of three main components: the upstream supply chain (farmers as suppliers), the internal supply chain (production process), and the downstream supply chain (distribution to consumers). The three components of the supply chain are divided into two streams that are quite similar but each have their own advantages. For more details, see the following figure;

1. First model: Direct distribution to consumers

Figure 2 .1 *The first SCM model at UD Bintang Surayyah*

In the upstream phase which includes planning, supplier sourcing, and the procurement of ginger raw materials UD Bintang Surayyah relies on supplies from farmers located outside the city of Palu, with a distribution time of approximately 3–4 hours. Procurement is conducted directly, with farmers delivering the raw materials themselves to the production facility in batches ranging from 500 kg to 1 metric ton per order. An interesting finding from the interviews is that the initiative to contact the buyer for shipping comes predominantly from the farmers. As one farmer informant (IP-01) explained: "*As soon as we finish harvesting, we contact the owner of Bintang Surayyah.*"

In addition to ginger, UD Bintang Surayyah also requires a supply of coffee beans as the primary raw material for its ginger coffee products. As with ginger, the coffee beans are sourced from supplier farmers who deliver their harvest directly to the production facility without going through intermediaries. Although the delivery process is similar, the characteristics of coffee procurement differ from those of ginger, particularly in terms of price and the level of competition for raw materials. Based on the results of observations and interviews, the purchase price of coffee tends to be higher and more volatile than that of ginger because this raw material is also in high demand by other businesses from various regions particularly Palu City such as coffee shops, ground coffee producers, and other small- to medium-scale coffee processing businesses, all of which are competing for coffee bean supplies from the same farmers. These conditions have put UD Bintang Surayyah in a position where it must compete to secure coffee beans that meet production standards, so the business owner often places orders well in advance of the harvest season to ensure a steady supply. Business owner (IP-2) noted that when demand for coffee from other parties is high, the purchase price paid to farmers can rise in a relatively short period of time, which in turn affects the production costs of the ginger coffee they produce.

Upon arrival at the production facility, the coffee beans undergo a quality inspection, which includes checking their level of ripeness and physical condition. They are then cleaned, sun-dried, and stored until they are processed further into raw material for ginger coffee. Thus, both ginger and coffee follow an upstream supply chain that relies on direct shipments from farmers to the production facility.

In the internal supply chain, the process includes receiving raw materials from suppliers, production, inventory allocation, and material usage. The ginger raw materials received first undergo a quality inspection; ginger that is too young is returned to the farmers and replaced to meet production standards. As stated by the business owner (IP-2), "*We always check the quality of the ginger as soon as it arrives, especially regarding its harvest age, because we can't process it if it's not ripe*." Ginger that passes the quality test is then cleaned of any remaining soil before proceeding to the drying stage and stored in a special raw material storage area; it is then processed directly into finished products when stock begins to run low. Production capacity fluctuates between 50 and 150 kg per month, heavily influenced by seasonal demand such as during Ramadan and the year-end holidays as well as extraordinary circumstances like the COVID-19 pandemic. A business owner (IP-02) described the situation this way: "*During Ramadan or at the end of the year, we can triple our production because we get so many orders*."

Another important step in the internal supply chain is the packaging of ginger coffee products before distribution. Based on our observations, UD Bintang Surayyah handles the packaging process independently, using its own equipment to package instant ginger coffee in plastic containers. Business owners choose to use their own equipment because it is considered more practical, can be used at any time as production demands require, and does not rely on third-party packaging services, thereby reducing packaging operating costs. This independence in the packaging process also gives UD Bintang Surayyah the flexibility to adjust the number of packages produced to accommodate fluctuating order volumes, especially during periods of high demand such as Ramadan and the year-end holidays. This type of in-house packaging practice is commonly found among small-scale MSMEs that seek to reduce production operating costs while maintaining flexibility in responding to changes in production volume (Hanif et al., 2023).

In the downstream supply chain, once the production process is complete, the products are sold directly at a store located in the same building as the production facility, as well as online through marketplaces and various social media platforms. Business Owner (IP-2) explained, "*Once the products are ready, we immediately display them out front (at the store) we also sell them on Shopee and social media platforms like Instagram*." Direct sales provide an opportunity for closer interaction with customers and make it easier to monitor product quality. Business Owner (IP-2) added, "*And here (at the store), even though there haven't been any problems yet, we always keep an eye on the products. Plus, we can talk directly to customers, so we can get to know the kind of people who are buying*."

2. 2. Second Model: Distribution Through Retail Outlets

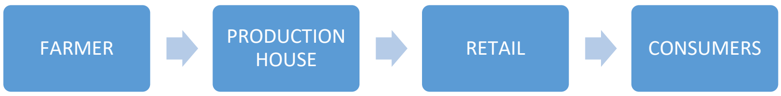

Figure 2.2 *The Second SCM Model at UD Bintang Surayyah*

This second process is not much different from the first; the raw materials coffee and ginger are still sourced from farmers, and the raw materials are then processed at the production facility. The difference lies in the distribution process in the downstream supply chain, which involves retailers as third parties before the products ultimately reach consumers.. The owner of UD Bintang Surayyah stated that their products are distributed to several retailers in Palu City on a consignment basis. Retail Informant (IR-01) said: "*We restock two to three times a month, depending on demand. Demand is usually highest leading up to long holidays. So, once our stock starts to run low, we send a product order to Bintang Surayyah*." For retailers, profits are generated by setting prices slightly higher than those of UD Bintang Surayyah's direct sales. Through this process, retailers serve as an additional distribution channel that can expand the product's marketing network to reach end consumers. The products thus reach a broader market compared to direct sales from a single location.

The research findings indicate that the ginger supply chain at UD Bintang Surayyah forms a system comprising interconnected upstream, internal, and downstream components. The existence of two distribution channels direct sales and retail distribution reflects the business operators' efforts to adapt their marketing strategies to prevailing market conditions. According to Hani Sirine, (2024), supply chain management is an integrative process that links procurement, production, distribution, and customer service activities to create added value for all parties involved. The findings of this study show that although these functions are already in place, the relationships among supply chain participants remain rudimentary and have not yet been formally integrated.

This situation is commonly found among MSMEs that still rely on experience and social connections as the basis for operational decision-making, as confirmed by Hasibuan et al. (2025) which states that most MSMEs in Indonesia still operate their supply chains in a rudimentary manner, with limited human resources, technology, and information systems. Thus, the characteristics of the supply chain identified in this study indicate that the success of MSMEs is determined not only by product quality but also by their ability to manage relationships and coordination among actors in the supply chain.

In terms of coordination, this study found that the relationship between suppliers and businesses is still based on trust rather than formal agreements. Karman & Santosa (2024) explain that information integration and collaboration among supply chain participants have a positive impact on organizational performance because they reduce uncertainty and improve operational efficiency. At UD Bintang Surayyah, the lack of a formal coordination system means that information regarding harvest times, supply volumes, and the quality of raw materials cannot always be accurately predicted, which ultimately increases the risk of operational disruptions.

Key Challenges in Supply Chain

Based on the results of observations and interviews, several key challenges were identified that affect the effectiveness of supply chain management at UD Bintang Surayyah. These challenges arise in every component of the supply chain at the upstream, internal, and downstream levels.

In the upstream supply chain, the main challenges relate to cooperation that takes place without formal contracts and the fact that suppliers are located quite far from the production facilities. Both farmers (IP-2) and business owners (IP-2) agreed that transactions are indeed conducted on the basis of mutual trust without written contracts. When asked why they chose that supplier, the business owner (IP-2) explained, "*We'd actually be happy to work with a local supplier, but we haven't yet found a farmer who can provide enough to meet our production needs*." As a result, on several occasions, raw materials were found to fall short of quality standards because they had been harvested too early, which could potentially disrupt the production process and affect the quality of the final product. The business owner (IP-2) explained, "*We've received unripe ginger before usually during the rainy season so we ask for it to be replaced with ripe ginger*." After confirming this with the farmers, it turns out that this situation does indeed occur frequently during the rainy season to avoid losses caused by flooding.

Inconsistencies in the quality of raw materials reflect the existence of supply risks that can affect production continuity and the quality of the final product. Kholisoh & Mahmud (2025) explain that supply risks are one of the greatest sources of uncertainty in the food MSME supply chain because they directly affect production stability and customer satisfaction. The practice of early harvesting caused by extreme weather conditions indicates that risks at the upstream level are not merely managerial in nature, but are also influenced by natural factors that require adaptive mitigation mechanisms.

In addition to challenges related to ginger raw materials, another challenge identified in the upstream supply chain concerns the procurement of coffee raw materials, namely the high purchase price of coffee due to competition for supply from various other businesses both within and outside the city of Palu that also use coffee beans as their primary raw material, such as coffee shops and other small- to medium-scale coffee processing industries. This situation means that UD Bintang Surayyah does not always have strong bargaining power when setting purchase prices, so the cost of coffee raw materials tends to rise, especially during periods of high market demand. The business owner (IP-2) explained that this situation necessitates raising product prices to ensure the business remains profitable.

. High raw material prices resulting from market demand competition represent a form of supply risk stemming from external factors beyond the direct control of business operators. Kholisoh & Mahmud (2025) explain that fluctuations in raw material prices are one dimension of supply risk that must be managed through mitigation strategies, such as supplier diversification and more thorough procurement planning. At UD Bintang Surayyah, the absence of price contracts or long-term purchase volume agreements with coffee farmers makes the business vulnerable to price pressures whenever market demand for coffee increases, thereby contributing to uncertainty regarding overall production costs.

Regarding the internal supply chain, the business owner did not mention any obstacles or challenges encountered in the production process; however, after in-depth interviews, it became clear that the inventory control system is still rudimentary. Planning for raw material and production needs is still based on the business owners' experience, without the support of structured forecasting methods. As a result, production volumes fluctuate according to market demand. A statement from a business owner (IP-2) reinforces this finding: "*Our production is normally* *around 50 kg per month, but during long holidays like Ramadan and the end of the year, there are usually even more customers, so we might end up producing 2–3 times a month*."

The main challenges identified relate to weak inventory control systems and the lack of a structured demand forecasting mechanism. Production planning is still based on the business owner's experience, making it prone to errors in estimating raw material requirements. This situation leads to a mismatch between the amount of inventory on hand and actual production needs, especially during periods of increased market demand. In operations management theory, inventory control plays a crucial role in maintaining a balance between the availability of raw materials and storage cost efficiency. When the inventory control system is not functioning optimally, a company risks experiencing either stockouts or excess inventory, which can impact operational efficiency. These findings support the research by Laksmayani (2024), which shows that raw material inventory management remains one of the main challenges in the small-scale ginger processing industry. Therefore, strengthening inventory planning and control systems is essential for improving the operational stability of these businesses..

Meanwhile, in the downstream supply chain, the main challenge stems from a distribution system that is not yet optimal. Products distributed to retailers offer greater market reach than direct sales; however, to reap these benefits, business owners must travel directly to the retail locations, resulting in constraints in terms of time, labor, and costs, as well as the distribution area. The business owner (IP-2) explained the situation directly "*We once received an offer from a well-known retailer, but we turned it down because we would have had to deliver the products ourselves to each of their branches in other regencies*." In line with this situation, consumers mentioned the difficulty of obtaining the products when they were outside the city of Palu: "*It's easier to get the products in Palu, but when we're outside the city, it's a bit difficult*."

Distribution that is still handled independently by business owners creates a high operational burden while also limiting market reach. Hidayat et al. (2024) emphasize that efficient distribution plays a crucial role in improving service speed, reducing operational costs, and strengthening business competitiveness. This situation indicates that the challenges facing the three components of the supply chain upstream, internal, and downstream are interrelated and have cumulative implications for the overall sustainability of the business.

Overall, the main supply chain management challenges at UD Bintang Surayyah include inconsistent raw material quality, weak inventory control, and a still-limited distribution reach. These challenges indicate that the existing supply chain system still requires improvement in order to optimally support the sustainability of the business..

Strategies for Strengthening Sustainable Supply Chain Management

Based on interviews with business owners, supplier farmers, retailers, and consumers, it was found that efforts to strengthen the supply chain at the upstream level should focus on improving the partnership between UD Bintang Surayyah and its supplier farmers. To date, this cooperative relationship has remained informal and is based solely on direct communication and mutual trust between the parties. This situation is considered quite helpful in maintaining good relations, but it does not yet provide certainty regarding the quality, quantity, and continuity of the raw material supply. Business owners noted that information regarding harvest times and the amount of ginger available is often not known until farmers contact the business just before shipment. In addition, there is a need to identify alternative suppliers located closer to the production facility in order to improve distribution cost efficiency. Regarding coffee procurement, the researchers also propose considering a strategy to diversify coffee suppliers and exploring purchase agreements with farmers for specific quantities and time periods, in order to reduce the risk of price spikes caused by intense competition for supply from other businesses in Palu City..

With regard to strategies for strengthening the upstream supply chain, this study found that formalizing partnerships with suppliers is an urgent step. Nuraeni & Adman (2024)Nuraeni & Adman (2024) explain that strong collaboration with suppliers can improve procurement efficiency, strengthen coordination, and reduce the risk of supply. In the context of UD Bintang Surayyah, establishing agreements on quality standards, harvest schedules, and shipping mechanisms will provide a more structured supply chain. Diversifying suppliers should also be considered as a risk mitigation strategy to reduce reliance on a single source of raw materials..

Internally, the research findings indicate that strategies to strengthen the supply chain should focus on improving inventory control and production planning systems. Based on observations, the recording of raw material and finished goods inventories is still carried out using simple methods and does not yet employ structured planning methods. Business owners acknowledge that decisions regarding the purchase of raw materials are generally based on previous production experience and subjective estimates of market demand. This situation leads to a mismatch between the amount of raw materials available and production needs during a given period. To address these issues, the researchers recommend implementing a more organized inventory tracking system and using sales data as the basis for estimating future production needs. The interview results also indicate the need to conduct periodic inventory evaluations to determine the amount of raw materials still available and the optimal time to place reorders. According to researchers, this measure can help businesses reduce the risk of raw material shortages when demand rises, while also avoiding inventory buildup that could increase storage costs and reduce operational efficiency..

Implementing a demand forecasting system based on historical sales data is a relevant solution. Jufriyanto (2020) shows that forecasting methods based on historical data can improve the effectiveness of production decision-making and reduce the risk of raw material shortages. In addition, more systematic inventory tracking will improve the accuracy of stock monitoring, enabling businesses to anticipate spikes in demand during Ramadan and the end of the year in a more planned manner.

On the downstream side, the strategies for strengthening the supply chain identified in this study relate to optimizing distribution and expanding the marketing reach of products. The interview results indicate that the distribution process is still handled independently by business owners, both for direct sales and for shipping products to retailers. This situation has resulted in a portion of operational time being devoted to distribution activities, thereby reducing the focus on production and business development. In addition, limited resources have prevented the distribution network from reaching a broader market beyond the current marketing territory. Therefore, the researchers recommend the need for a more carefully planned distribution schedule and strengthened collaboration with retail partners who have become marketing channels for the products. It is also important to enhance promotions and marketing through digital media to make it easier for consumers to shop online without significantly increasing distribution costs. This strategy is considered capable of expanding market reach, increasing sales volume, and supporting the long-term sustainability of the business. Overall, the research findings indicate that strengthening the supply chain must be carried out in an integrated manner across upstream, internal, and downstream aspects in order to sustainably improve the operational effectiveness of UD Bintang Surayyah.

In the downstream sector, optimizing distribution and leveraging digital marketing are effective strategies for expanding market reach without proportionally increasing operating costs. Hulu et al. (2025) assert that optimizing distribution and implementing sound logistics management can reduce operating costs while improving service effectiveness. The integration of strategies across the three components of the supply chain upstream, internal, and downstream is a prerequisite for achieving effective, adaptive, and sustainable supply chain management at UD Bintang Surayyah.

CONCLUSION

Ginger supply chain management at UD Bintang Surayyah in Palu City is not yet operating optimally and faces several major challenges. The supply chain process encompasses upstream, internal, and downstream components, but is not yet well integrated. The main problems identified include inconsistent quality of ginger raw materials, high prices for coffee raw materials due to competition for supply from other businesses, reliance on a single supplier, a weak inventory control system, and high distribution costs and lead times. To improve the effectiveness of supply chain management, several strategies are needed, including: (1) building stronger partnerships with suppliers through agreements on quality, price, and harvest schedules, including diversifying coffee suppliers to reduce the risk of price spikes; (2) implementing a more structured system for demand forecasting and inventory control; and (3) optimizing the distribution system to reduce logistics costs and expand market reach. The findings of this study contribute to the development of the literature on supply chain management in food-processing MSMEs, particularly those dealing in ginger coffee. In addition, this study also offers practical implications for MSME operators in improving operational efficiency and business sustainability through better supply chain management. Further research is recommended to examine the application of quantitative models in inventory management and the integration of digital technology into the supply chains of MSMEs.

REFERENCE

Calystania, V., Hasvia, T. G., Jones, J. H., Bhuan, S., & Valentino, J. (2022). Analisis manfaat penerapan manajemen rantai pasok dan ERP. *Jurnal Manajemen*, *14*(2). https://doi.org/10.30872/jmmn.v14i2.11161

Fajriani Putri Kholisoh & Amir Mahmud. (2025). Manajemen Risiko Rantai Pasok Pada UMKM Pangan: Tinjauan Literatur Berbasis ISO 31000. *EKOMA: Jurnal Ekonomi, Manajemen, Akuntansi*. https://doi.org/10.56799/ekoma.v4i6.10359

Febri Putra Pratama Karman & Wahyuningsih Santosa. (2024). Kinerja Perusahaan Dalam Rantai Pasok Yang Terintegrasi Secara Digital Berfokus Pada Teknologi Serta Kolaborasi Antar Perusahaan. *COSTING: Journal of Economic, Business Amd Accounting*.

Hani Sirine. (2024). *Manajemen Rantai Pasok Adaptif: Teori dan Praktik*. CV Widina Media Utama.

Hanif, H., Hidayat, T., & Haryadi, R. N. (2023). Pelatihan Keterampilan Manajemen Operasional bagi UMKM: Peningkatan Efisiensi dan Produktivitas. *Jabdimas: Jurnal Pengabdian Masyarakat*, *1*(1), 34–38. https://doi.org/10.56457/jabdimas.v1i1.52

Hasibuan, R. P., Jamal, S. A., Herman, H., Afrija, F., & Khotimah, N. H. (2025). Supply Chain Management Untuk Umkm: Kunci Efisiensi & Daya Saing. *Jurnal Rekayasa Sistem Industri*, *11*(1), 13–19. https://doi.org/10.33884/jrsi.v11i1.10671

Jufriyanto, M. (2020). Peramalan Permintaan Keripik Singkong Pada UMKM Difaa dengan Simulasi Monte Carlo. *Jurnal Teknik Industri: Jurnal Hasil Penelitian Dan Karya Ilmiah Dalam Bidang Teknik Industri*, *6*(2), 107. https://doi.org/10.24014/jti.v6i2.10452

Munthe, A., M. Yarham, & Ridwana Siregar. (2023). Peranan Usaha Mikro Kecil Menengah Terhadap Perekonomian Indonesia. *Jurnal Ekonomi Bisnis, Manajemen Dan Akuntansi*, *2*(3), 593–614. https://doi.org/10.61930/jebmak.v2i3.321

Ni Wayan Suarini & Made Krisna Laksmayani. (2024). Manajemen Persediaan Bahan Baku Produk Jahe Merah Instan Pada Industri Raja Bawang Di Kota Palu. *Agrotekbis: Jurnal Ilmu Pertanian*.

Nuraeni, S. R. & Adman. (2024). Pengaruh Kolaborasi Dengan Pemasok Terhadap Efisiensi Pengadaan Logistik. *Jurnal Logistica*, *3*(1), 21–25. https://doi.org/10.62375/logistics.v3i1.438

Nursani Dharma, & Arif Rachman. (n.d.). Pengantar Manajemen Rantai Pasok. *2021*.

Nurul Hidayat, Radinka Diva Zahira, Della Rakerdaresty, & Nabila Della Febriani. (2024). Peran Logistik dan Distribusi Dalam Meningkatkan Efisiensi Operasional Industri Ayam Potong. *Advertens: Jurnal Ekonomi Dan Manajemen*. https://doi.org/https:/doi.org/10.63424/advertens.v1i3.166

Nutiwati Hulu, Lokot Muda Harahap, Sendy Marbun, Devi Adinda Putri, Marke Manik, & Kasah Sigalingging. (2025). Efisiensi Distribusi Melalui Optimasi Biaya dan Arak Dengan Pendekatan Metode Transportasi. *ECONOBIS: Journal Of Economics, Business and Management*. https://doi.org/10.56495/econobis.v1i1.937

Simanjuntak, L. F. (2025). *Manajemen Rantai Pasok Berkelanjutan Dalam Industri Makanan: Studi Literatur Tentang Praktik Dan Tantangan*.

Tanjung, A. H., Rahayu, E. S., & Widadie, F. (2025). Analisis Manajemen Rantai Pasok Jahe Di Kabupaten Karanganyar. *Agricultural Socio-Economic Empowerment and Agribusiness Journal*, *4*(1), 22. https://doi.org/10.20961/agrisema.v4i1.99805

Yulya Ammi Hapsari, Putri Apriyanti, Aldi Hermiyanto, & Fahrur Rozi. (2024). Analisa Peran UMKM Terhadap Perkembangan Ekonomi di Indonesia. *Jurnal Manajemen dan Ekonomi Kreatif*, *2*(4), 53–62. https://doi.org/10.59024/jumek.v2i4.464