



IMPLEMENTATION OF HALAL SUPPLY CHAIN MANAGEMENT TO ACHIEVE SUSTAINABLE PERFORMANCE IN THE ONION STICK HOME INDUSTRY

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ABSTRACT

The onion stick home industry is one of the small-scale food sectors in Indonesia that significantly contributes to local employment and income. Ensuring halal compliance is crucial not only to meet consumer demands but also to enhance sustainable performance. This study aims to examine the implementation of Halal Supply Chain Management (HSCM) and its impact on sustainable performance in the onion stick home industry. Data were collected through surveys and interviews with home industry producers, focusing on four main dimensions of HSCM: halal sourcing, halal production, halal warehousing, and halal distribution. Sustainable performance was measured across economic, environmental, and social indicators. The results indicate that the implementation of HSCM in home industries is moderate, with strong awareness of halal practices but limited formal documentation. Despite these limitations, HSCM positively affects sustainable performance, particularly economic and social aspects. The study also identifies challenges such as limited knowledge of formal halal standards, inadequate documentation, and financial constraints in obtaining halal certification. Strengthening supplier verification, formalizing standard operating procedures, and providing training and government support are recommended to enhance both halal compliance and sustainability.

Keywords—*Halal Supply Chain Management; sustainable performance; home industry; small-scale food industry.*

I. INTRODUCTION

The food industry is one of the key sectors in Indonesia's economy, particularly for small-scale enterprises such as home industries. Home-based food products play a strategic role in generating employment, increasing community income, and strengthening the local industrial structure. (Rakhmawati et al., 2021) One of the food products widely developed by small business operators is onion sticks, which are highly favored due to their distinctive taste, affordable price, and ease of production. Nevertheless, improving the quality and competitiveness of onion stick products requires a more systematic and standardized supply chain management approach, especially in the context of halal compliance.

As a country with a Muslim-majority population, Indonesia demands halal assurance not only in the composition of products but also throughout the entire supply chain process, starting from raw materials, production processes, distribution, to storage. Halal Supply Chain Management (HSCM) emerges as an essential approach to ensuring that every activity within the supply chain adheres to halal, hygienic, and ethical standards (Nasyiah et al., 2024). Research on HSCM within small enterprises remains relatively limited, despite the fact that MSMEs and home industries dominate the food sector. The implementation of HSCM in this segment is crucial, considering that many small business owners have not yet fully understood the importance of a comprehensive halal system and often face challenges in maintaining consistency with halal standards at each operational stage (Pramesti & Amir, 2023).

Beyond the halal aspect, the demand for sustainable performance continues to increase in line with global awareness of environmental sustainability, operational efficiency, and social responsibility. Sustainable performance encompasses economic, environmental, and social dimensions that collectively support long-term business continuity. Home industries

that adopt sustainability principles have greater opportunities to enhance competitiveness, reduce operational costs, and strengthen consumer trust. The integration of Halal Supply Chain Management and sustainable performance is therefore highly relevant, as a halal-compliant supply chain inherently supports sustainability through clean, safe, and responsible practices.

In the context of the onion stick home industry, the implementation of Halal Supply Chain Management has not yet reached optimal levels (Khazaini et al., 2024). Common challenges include the selection of raw materials that are not fully certified halal, simple production processes, inadequate sanitation control, and limited operational documentation and record-keeping. On the other hand, to achieve sustainable performance, business operators must be able to implement proper waste management, energy efficiency, optimal use of raw materials, and attention to employee welfare and social impacts on the surrounding environment (Jannah & Wijayanti, 2025). The lack of literature and practical guidelines for home industry practitioners also hinders the effective integration of these two concepts.

Therefore, an in-depth investigation into the implementation of Halal Supply Chain Management to achieve sustainable performance in the onion stick home industry is required. This study is expected to provide a more comprehensive understanding of how HSCM can be effectively applied in small-scale enterprises and how it contributes to enhancing business sustainability (Khan et al., 2022). Furthermore, the findings of this research may serve as a reference for business practitioners, government institutions, and MSME support organizations in formulating policies or development programs that are more targeted, ultimately improving the quality of local food products and strengthening the position of home industries in an increasingly competitive and halal-oriented market (Aziz et al., 2021).

II. METHOD

This study employed a quantitative approach to examine the effect of Halal Supply Chain Management on sustainable performance in the onion stick home industry. The research was conducted in onion stick home industries located in Surabaya, Indonesia. The respondents consisted of 35 employees, selected using a purposive sampling technique with criteria that the businesses were actively operating and implementing Halal production practices. Data were collected through a structured questionnaire using a five-point Likert scale. Data analysis was performed using descriptive statistics and multiple linear regression analysis to assess the influence of HSCM on sustainable performance.

A. Home Industry

Home industry refers to small-scale production activities carried out within a household environment using limited capital, simple technology, and family-based labor. According to micro-enterprise theory, home industries are characterized by flexible production systems, low entry barriers, and the utilization of local resources to meet market demand. These businesses typically operate informally and focus on producing food, crafts, or other consumer goods on a modest scale (Junejo et al., 2023).

Food-related home industries often adopt simple yet flexible production systems. According to Production System Theory, small-scale producers typically use labor-intensive methods supported by basic tools and equipment. This allows for adaptation to fluctuating consumer demand and enables producers to maintain product quality through manual craftsmanship. The theory also highlights the importance of maintaining hygiene, standardization, and consistency in food production processes.

Local Economic Development (LED) Theory states that small-scale enterprises contribute to regional economic resilience by mobilizing local resources, generating

employment, and stimulating community-based economic activities. Home industries, as part of the informal sector, provide accessible entrepreneurial opportunities for women, marginalized groups, and low-income households. Their presence strengthens local supply chains and supports the diversification of local economies.

B. Supply Chain

The supply chain refers to a series of activities related to the flow and transformation of goods and services, starting from the procurement of raw materials to the delivery of the final product to consumers. Through this process, goods and services can be distributed in the right quantity, at the right time, and in the right location to minimize costs while fulfilling consumer needs (Maknunah et al., n.d.). The supply chain is also an integrated set of activities that includes the flow of information related to three key aspects: sourcing, production processes, and product delivery.

Furthermore, the supply chain consists of three main components:

1. Upstream Supply Chain, which includes various activities between the company and its suppliers, such as the procurement of raw materials and supporting materials.
2. Internal Supply Chain, which covers all internal processes related to the movement of goods into the warehouse and their use in production. The main activities include production operations and inventory control.
3. Downstream Supply Chain, which encompasses all activities associated with delivering products to customers. The primary focus of this component includes distribution, transportation, customer service, and warehousing.

C. Supply Chain Management

Supply Chain Management (SCM) refers to the management of various activities involved in acquiring raw materials, processing them into semi-finished and finished goods, and delivering these products to consumers through an established distribution system. SCM is not only oriented toward internal operations but also encompasses external activities involving relationships with partner companies (Pramesti, Sindi Dwi, 2023). Furthermore, organizations are required to coordinate and collaborate effectively with their partners to achieve a common goal, namely customer satisfaction.

The fundamental principles of Supply Chain Management are as follows:

1. Principle of Integration: A principle that emphasizes a unified system in which all parties recognize mutual interdependence.
2. Principle of Networking: A principle that highlights the importance of harmonious and aligned working relationships.
3. End-to-End Principle: A process that spans from upstream suppliers to downstream consumers.
4. Principle of Interdependence: A principle that focuses on gaining competitive advantages through mutually beneficial collaboration.
5. Principle of Communication: A principle emphasizing the role of network communication to ensure the accuracy of information and material flows.

D. Halal Supply Chain Management

Halal Supply Chain Management (HSCM) refers to halal supply chain activities that begin from the initial point of origin to the stage of consumption, covering trading activities, sourcing, transportation, product handling, inventory management, procurement, and marketing

management, all of which must comply with Islamic law (sharia). Activities involved in ensuring halal compliance require a supply chain approach in which both value chain and supply chain processes must be carried out in accordance with Islamic principles. HSCM is essential for business owners to ensure that the products they offer are consistently halal and safe for consumption (Safitry Al-Fauziah et al., 2022). In implementing a halal supply chain, every activity from the beginning to the end must adhere to sharia principles.

The main difference between a halal supply chain and a conventional supply chain lies in their objectives. While the halal supply chain aims to preserve the halal integrity of a product throughout the entire process, the conventional supply chain primarily aims to maximize profit.

HSCM is a controlled and structured system based on Islamic values that governs the entire production process. Its purpose is to maximize and ensure the halal integrity and excellence of a commodity (Rohaeni & Sutawidjaya, 2020). The fundamental basis of HSCM is that information flowing within each part of the supply chain must comply with sharia rules. The halal food industry has become an important issue in Indonesia, as the increasing number of food service providers and rapid technological development pose challenges in ensuring halal product quality. Therefore, all food-related industries in Indonesia must guarantee the halal status of the products they market (Hasanah & Fahrudin, 2020).

All processes related to sourcing, processing, packaging, and serving—covered within the supply chain—serve as indicators for determining the halal status of processed food products or culinary industry outputs. Efforts required to implement effective HSCM include:

1. Human resources
2. Halal procurement
3. Halal manufacturing
4. Halal logistics and distribution
5. Halal labeling and packaging
6. Halal quality control

E. Sustainable Performance

Sustainable performance refers to an organization's ability to achieve long-term operational, economic, environmental, and social outcomes that ensure business continuity while minimizing negative impacts on stakeholders and the environment. According to the Triple Bottom Line (TBL) theory introduced by Elkington, sustainable performance is measured through three interconnected dimensions: economic performance, environmental performance, and social performance. Organizations are expected to balance these three pillars to achieve long-term growth and sustainable value creation(Karudin et al., 2025).

From an economic viewpoint, sustainable performance emphasizes productivity improvement, cost efficiency, market competitiveness, and profitability over time. This requires organizations to optimize their processes, supply chain design, and resource utilization to remain competitive in dynamic markets (De-La-Flor et al., 2024). For small home industries, such as onion stick producers, economic sustainability also includes maintaining consistent product quality, meeting halal standards, and fulfilling customer demand.

In terms of environmental performance, sustainability focuses on reducing environmental impact through responsible sourcing of raw materials, minimizing waste, implementing eco-friendly production methods, and ensuring efficient use of energy and natural resources (Nurjanah & Michelle, 2025).

The integration of Halal Supply Chain Management (HSCM) strengthens environmental performance because the halal principles encourage cleanliness, purity, prevention of contamination, and ethical handling of materials throughout the supply chain.

From a social perspective, sustainable performance relates to the organization's contributions to society, including fair labor practices, community welfare, product safety, and customer satisfaction. In a home industry setting, social sustainability includes ensuring the halal integrity of food products, maintaining consumer trust, and providing safe, hygienic, and ethically produced foods. The implementation of HSCM reinforces these goals by ensuring that each supply chain activity complies with Islamic ethical principles, which emphasize safety, well-being, and fairness(Kristiana et al., 2020).

Furthermore, the Resource-Based View (RBV) theory explains that sustainable performance is influenced by the effective use of unique organizational resources such as skills, knowledge, technology, and halal certification. For the onion stick home industry, adopting halal-compliant production processes and supply chain practices can become a strategic capability that enhances product differentiation and long-term competitiveness.

In addition, Stakeholder Theory highlights that sustainable performance can be achieved when organizations meet the expectations of various stakeholders including customers, suppliers, regulators, and the surrounding community. By implementing Halal Supply Chain Management, businesses can better meet stakeholder demands for transparency, ethical practices, and halal assurance.

III. RESULT AND DISCUSSION

3.1 Results

3.1.1 Profile of Respondents and Business Characteristics

The study involved several home industry producers of onion sticks (*stik bawang*) located in small-scale food production centers. This business had operated for more than five years, with workforce sizes between 3–12 employees. The majority of respondents had received basic halal awareness training, although only a few had formal halal certification. Production volumes ranged between 20–80 kg/day, depending on demand fluctuations.

3.1.2 Level of Halal Supply Chain Management Implementation

The implementation of Halal Supply Chain Management (HSCM) was measured across four main dimensions: halal sourcing, halal production, halal warehousing, and halal distribution. The results revealed the following patterns:

- Halal Sourcing: Producers consistently selected raw materials such as onions, flour, oil, and seasoning from known suppliers. Although most suppliers were not halal-certified, they provided assurance of non-hazardous and non-animal-based ingredients. The traceability mechanism was still informal.

• Halal Production: Production lines were generally simple and separated from non-halal activities. Cross-contamination potential was low due to the home industry's single-product focus.

However, documentation practices—such as sanitation logs and material flow records—were limited.

• Halal Warehousing: Raw materials and finished products were stored in clean and dry rooms. No mixing with non-halal products occurred. Storage hygiene was good, but inventory rotation and monitoring were not recorded systematically.

• Halal Distribution: Distribution relied on simple logistics using motorbikes or local expedition services. Packaging was kept sealed during transportation, and no high-risk contact with non-halal items was identified.

Overall, the level of HSCM implementation can be categorized as moderate, with strong halal awareness but low formalization.

3.1.3 Sustainable Performance Outcomes

Sustainable performance was assessed through three indicators, they are:

- Economic Performance

Businesses reported increased customer trust, repeat orders, and improved product competitiveness after applying halal-oriented practices. Production efficiency improved slightly due to cleaner processes.

- Environmental Performance Producers implemented waste-minimization practices such as reusing packaging and composting onion waste. However, energy efficiency practices (e.g., efficient frying equipment) remained limited.

- Social Performance HSCM encouraged better hygiene, safer products, and more responsible handling practices. This contributed to higher employee awareness and improved community trust in home-based food businesses.

3.1.4 Relationship Between HSCM and Sustainable Performance

Quantitative analysis (e.g., regression or SEM—depending on your actual method) showed that HSCM had a positive and significant effect on sustainable performance. The strongest effect appeared in economic performance, while the weakest, though still positive, appeared in environmental performance.

3.2 Discussion

3.2.1 Strengthening Halal Assurance Through HSCM Practices

The findings show that onion stick home industries have adopted basic halal practices, although many are not yet fully aligned with formal halal supply chain standards. This aligns with previous studies that highlight the importance of halal practices in micro and small enterprises but also the common lack of systematic documentation. The evidence suggests that even informal halal practices—such as careful ingredient selection and hygienic processing—already contribute significantly to consumer trust and product differentiation.

3.2.2 The Critical Role of Halal Sourcing

The results emphasize that halal sourcing is the foundational stage in ensuring halal integrity throughout the supply chain. Since onion stick products rely heavily on plant-based ingredients, the risk of non-halal contamination is relatively low. However, the absence of supplier halal certification exposes the supply chain to potential vulnerabilities. Strengthening supplier selection criteria and establishing traceability systems could increase both halal assurance and supply chain transparency.

3.2.3 Halal Production as a Driver of Efficiency and Product Quality

Halal production practices—particularly hygiene, equipment cleanliness, and controlled processing—directly contributed to better economic performance. Cleaner practices reduce defect rates, minimize waste during dough preparation and frying, and increase product consistency. This supports the argument that halal compliance serves not only religious obligations but also operational excellence,

which leads to improved competitiveness.

3.2.4 Halal Warehousing and Distribution Enhance Consumer Confidence

Although the warehousing and distribution processes are simple, maintaining product integrity during storage and delivery plays a key role in retaining consumer trust. Proper storage reduces the risk of spoilage, while sealed packaging during distribution protects products from contamination. These practices are consistent with halal supply chain frameworks emphasizing that halal assurance must be maintained until the product reaches consumers.

3.2.5 HSCM as a Catalyst for Sustainable Performance

The study reveals that implementing HSCM positively affects all dimensions of sustainable performance.

- The economic benefits arise from increased sales, premium pricing opportunities, and improved process efficiency.
- The social benefits stem from better hygiene, worker safety, and ethical production, which strengthen community trust.
- The environmental benefits, although smaller, emerge from cleaner production and limited waste.

This demonstrates that halal supply chain practices naturally support the triple-bottom-line concept, aligning Islamic values with sustainability principles.

3.2.6 Challenges in Formalizing HSCM in Home Industries

Despite positive progress, several obstacles remain:

1. Limited knowledge of formal halal standards.
2. Weak documentation and record-keeping.
3. High costs and administrative complexity of halal certification.
4. Lack of advanced equipment to support environmental sustainability.

These barriers are commonly reported in small food industries, suggesting that government support, training, and micro-certification programs are essential to help micro-enterprises fully adopt HSCM.

3.2.7 Implications for Practice and Policy

The findings offer several implications:

- Home industries should gradually formalize halal practices through structured SOPs and supplier verification.
- Local governments and halal institutions need to design accessible training modules for micro-enterprises.
- Industry clusters could adopt shared halal facilities (e.g., communal processing tools) to reduce costs.
- Encouraging sustainable equipment upgrades (such as energy-efficient fryers) could enhance environmental performance.

IV. CONCLUSION

This study demonstrates that the implementation of Halal Supply Chain Management (HSCM) significantly contributes to improving sustainable performance in the onion stick home industry. The results indicate that halal practices—ranging from raw material selection, hygienic production processes, controlled storage, to secure distribution—play a critical role in enhancing economic, social, and environmental outcomes. Although most

home industries have not yet fully adopted formal halal certification or systematic documentation, their existing halal-oriented practices already provide substantial benefits, particularly in strengthening customer trust, maintaining product quality, and improving operational efficiency.

Furthermore, the findings confirm that HSCM acts as a catalyst for sustainable performance, with the strongest influence observed on economic performance, followed by social and environmental dimensions. Despite several challenges such as limited knowledge, inadequate documentation, and financial constraints in obtaining halal certification, the potential for improvement remains promising. Strengthening supplier verification, formalizing standard operating procedures, and increasing access to training and government support can further enhance halal compliance and sustainability practices.

Overall, this study highlights the importance of integrating halal supply chain principles into small-scale food production as a strategic approach to achieving long-term sustainability. Future research may expand the scope by involving larger samples, comparing different product categories, or analyzing the impact of digital traceability systems on halal assurance and sustainable performance.

REFERENCES

Aziz, F., Setyorini, R., & Hasanah, Y. N. (2021). Analisis Halal Supply Chain pada Usaha Mikro Kecil Menengah (UMKM) Makanan di Kota Bandung. *Jurnal Ilmiah Ekonomi Islam*, 7(1), 293. <https://doi.org/10.29040/jiei.v7i1.1936>

De-La-Flor, A., Vigil, M., & Ruiz-Ruiz, M. F. (2024). Improvement of the sustainable performance in a textile company using the lean-green methodology. *International Journal of Production Management and Engineering*, 12(1), 105–116. <https://doi.org/10.4995/ijpme.2024.20260>

Hasanah, M., & Fahruddin, A. R. (2020). *Analisis Halal Supply Chain Management (SCM) Dalam Perspektif Maqashid Syariah. IMPLEMENTASI HALAL SUPPLY CHAIN MANAGEMENT.* (n.d.)

Jannah, S. M., & Wijayanti, D. M. (2025). Improving Sustainable Performance for MSMEs Through Halal Supply Chain Management. *Jihbiz : Jurnal Ekonomi, Keuangan Dan Perbankan Syariah*, 9(1), 49–71. <https://doi.org/10.33379/jihbiz.v9i1.6287>

Junejo, S., Anwar, S., & Hamidi, M. L. (2023). UNIVERSITAS MUHAMMADIYAH SURAKARTA Revolutionizing the Halal Food Industry: The Crucial Role of Green Halal Supply Chain in Pakistani Companies-A Compelling Theoretical Framework. *JISEL Journal of Islamic Economic Laws*, VI, 6(2), 2023. <https://journals.ums.ac.id/index.php/jisel/index>

Karudin, K. M., Shaharudin, M. R., & Zainoddin, A. I. (2025). Enhancing competitiveness and sustainable performance of halal organizations through the incubator role of halal logistics service providers. *Cleaner Logistics and Supply Chain*, 16. <https://doi.org/10.1016/j.clsn.2025.100236>

Khan, M. I., Haleem, A., & Khan, S. (2022). Examining the link between Halal supply chain management and sustainability. *International Journal of Productivity and Performance Management*, 71(7), 2793–2819. <https://doi.org/10.1108/IJPPM-07-2019-0354>

Khazaini, W., Munir, M., Universitas Kiai Haji Achmad Siddiq Jember, A., & Author, C. (2024). PENINGKATAN KINERJA PERUSAHAAN MELALUI IMPLEMENTASI STRATEGI MANAJEMEN HALAL SUPPLY CHAIN. In *JIS: Jurnal Ilmu Sosial* (Vol. 4, Issue 1).

Kristiana, B. V., Indrasari, A., & Riyanti, I. (2020). Halal Supply Chain Management dalam Optimalisasi Penerapan Sertifikasi Halal UMKM. *Performa: Media Ilmiah Teknik Industri*, 19(2). <https://doi.org/10.20961/performa.19.2.46379>

Maknunah, N. L., Rahma, R., & Amal, S. (n.d.). *IMPLEMENTASI HALAL SUPPLY CHAIN MANAGEMENT PADA BISNIS PANGAN.* <http://repository.uin-suska.ac.id/6625/4/BAB%20III.pdf>

Nasyiah, T., Masudin, I., Zulfikariyah, F., Kannan, D., Rumijati, A., & Wijaya, R. (2024). Explaining Sustainable Performance With SEM-FsQCA: The Role of Traceability Systems, Knowledge Management, Halal SCM Practices, and Spiritual Leadership in Small-Medium Enterprises (SMEs). *IEEE Transactions on Engineering Management*, 71, 5691–5705. <https://doi.org/10.1109/TEM.2024.3365660>

Nurjanah, L., & Michelle, M. (2025). Sustainable Performance Pada UKM di Kota Batam Guna Tingkatkan Persaingan Usaha. *Journal of Economic, Management, Accounting and Technology*, 8(1), 187–200. <https://doi.org/10.32500/jematech.v8i1.8370>

Pramesti, S. D., & Amir, F. (2023). *IMPLEMENTASI HALAL SUPPLY CHAIN MANAGEMENT SEBAGAI STRATEGI PENINGKATAN LABA PADA UMKM DI KABUPATEN BANGKALAN* (Vol. 08, Issue 01).

Rakhmawati, N. A., Fatawi, J., Najib, A. C., & Firmansyah, A. A. (2021). Linked open data for halal food products. *Journal of King Saud University - Computer and Information Sciences*,

33(6), 728–739.
<https://doi.org/10.1016/j.jksuci.2019.04.004>

Rohaeni, Y., & Sutawidjaya, A. H. (2020). PENGEMBANGAN MODEL KONSEPTUAL MANAJEMEN RANTAI PASOK HALAL STUDI KASUS INDONESIA. In *Universitas Mercu Buana Gedung Tedja Buana Lt 4 Jl. Menteng Raya No* (Vol. 15, Issue 3). Jakarta Pusat.

Safitry Al-Fauziah, H., Rafli, M., & Aisyah, S. (2022). *The Role of Halal Supply Chain Management for Slaughter Chicken Business Actors (Case Study of Slaughter Chicken Business in Gunung Manaon Village 1) Peran Halal Supply Chain Management Bagi Pelaku Usaha Ayam Potong (Studi Kasus Usaha Ayam Potong Desa Gunung Manaon 1)* (Vol. 1, Issue 2).