

Improving Sustainable Performance for MSMEs Through Halal Supply Chain Management

Meningkatkan Kinerja Berkelanjutan UMKM Melalui Manajemen Rantai Pasokan Halal

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ABSTRACT

The purpose of this study is to examines the impact of implementing ten aspects related to halal supply chain management on its effectiveness, particularly in improving sustainability across economic, social, and environmental dimensions for MSMEs. The research adopts a quantitative research approach, collecting data through a self-administered survey conducted among MSMEs located in Yogyakarta, Indonesia. The results of the data analysis using SEM-PLS. The results indicate that six aspects of halal supply chain management significantly contribute to upholding halal integrity, enhancing customer satisfaction and branding, and improving process quality. Additionally, a higher implementation of these aspects is directly linked to an enhancement in the sustainable performance of MSMEs. This research provides insight that MSMEs still need to be fostered in implementing Halal Supply Chain Management.

Keywords: Halal Supply Chain Management (HSCM), HSCM effectiveness, sustainability performance

ABSTRAK

Tujuan dari penelitian ini adalah untuk mengkaji dampak penerapan sepuluh aspek terkait manajemen rantai pasok halal terhadap efektivitasnya, khususnya dalam meningkatkan keberlanjutan di seluruh dimensi ekonomi, sosial, dan lingkungan bagi UMKM. Penelitian ini mengadopsi pendekatan penelitian kuantitatif, mengumpulkan data melalui survei yang dilakukan sendiri di antara UMKM yang berlokasi di Yogyakarta, Indonesia. Hasil analisis data menggunakan SEM-PLS. Hasil penelitian menunjukkan bahwa enam aspek manajemen rantai pasok halal berkontribusi secara signifikan untuk menegakkan integritas halal, meningkatkan kepuasan pelanggan dan branding, dan meningkatkan kualitas proses. Selain itu, implementasi yang lebih tinggi dari aspek-aspek ini secara langsung terkait dengan peningkatan kinerja berkelanjutan UMKM. Penelitian ini memberikan wawasan bahwa UMKM masih perlu dibina dalam menerapkan Manajemen Rantai Pasok Halal.

Kata Kunci: manajemen rantai pasok halal (HSCM), efektivitas HSCM, kinerja berkelanjutan



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1. Introduction

Globally, Muslim consumers worldwide have the potential to generate significant market opportunities by embracing products and services aligned with Islamic values. Data from 2019 reveals that 1.9 billion Muslim consumers contributed a substantial \$2.02 trillion to the economy across six key economic sectors. This potential is expected to become even more robust with the projected growth of the global Muslim population, which is estimated to reach 2.2 billion by 2030 (Dinar Standard, 2020).

Table 1 Total Consumer Spending in Six Halal Industry Sectors

Halal Industry	2019	CAGR Forecast to 2024
Halal Food	\$1.17 trillion	\$1.38 trillion
Modest Fashion	\$277 billion	\$311 billion
Media and Recreation	\$222 billion	\$270 billion
Muslim-friendly Travel	\$194 billion	\$208 billion
Halal Pharma	\$94 billion	\$105 billion
Halal Cosmetics	\$66 billion	\$76 billion

Source: (Dinar Standard, 2020)

Muslim consumers are now increasingly aware of the importance of consuming halal products (Jannah & Al-Banna, 2021). Looking at it through the lens of ethical consumerism, a majority of consumers, approximately 66%, are ready to spend extra on products deemed ethical (Swidi et al., 2010; Sugibayashi et al., 2019; Ngah et al., 2021). The attention of Muslim consumers is not only on the halalness of the product itself, but also on the entire product production process that must comply with Islamic law (Aufi & Aji, 2021; Ab Rashid & Bojei, 2020). From the perspective of MSMEs, this can be a good opportunity to readjust their business models and processes by focusing more on the halal concept (Aufi & Aji, 2021). As survey data from the Dinar Standard (2020) states that 58% of business actors choose to find new ways and strategies to support their business growth in the future (Dinar Standard, 2020). Related to this, the implementation of Halal Supply Chain Management (HSCM) by business actors (MSMEs) can be a competitive strategy that can be used to fill out the gap.

Indonesia's largest economic sector, in terms of sheer numbers, is the Micro, Small, and Medium Enterprises (MSMEs) sector (Bapepam, 2019). This sector employs more than 80 percent of the national workforce, offering substantial opportunities to bolster the halal value chain from its beginning to its end. By enhancing the halal value chain within MSMEs, the overall halal industry is poised to expand. Given its predominantly Muslim population, Indonesia is increasingly positioned to become a global hub for Islamic economic development (Bapepam, 2019).

The concept of Halal Supply Chain Management (HSCM) is a crucial concern for business entities due to the growing consciousness among consumers regarding the halal status of the products they use (Islam et al., 2020). This concern extends not only to Muslim consumers but also to non-Muslims. This encourages business actors to comply and further re-assure the quality and integrity of their halal products (Tieman et al., 2012a). HSCM is a concept that focuses on the process of obtaining raw materials, production processes, until the distribution of finished products (Wilson & Liu, 2010; Tieman et al., 2012; Potluri et al., 2017; Osman & Aziz, 2018; Indarti et al., 2020). In other words, HSCM emphasizes halal processes from suppliers to end customers (Omar & Jaafar, 2011; Khan et al., 2018).

The concept of HSCM has received attention in many studies (Indarti et al., 2020). However, the development of HSCM studies is still considered very difficult due to the absence of clear definitions and concepts (Khan et al., 2018). For example, the link between HSCM and halal integrity. HSCM ensures and guarantees the halal integrity of a product (Haleem et al., 2021). Several studies have emerged with various frameworks that can explain the relationship between HSCM and halal integrity. For example, Tieman et al. (2012) linked halal integrity in HSCM with elements of safety, security, quality, and sustainability. Meanwhile, Ali et al. (2017) delve into the dimensions of halal integrity within Halal Supply Chain Management (HSCM), specifically focusing on raw materials, production processes, services, and information integrity. Zailani et al. (2018) add the role of logistics management in HSCM. Indarti et al. (2020) emphasized that with the emergence of many groups of study themes in the HSCM literature, it is advisable to conduct further studies in order to provide deeper analysis and understanding of the HSCM concept and how it is implemented in existing businesses.

This study was conducted using a broader perspective of HSCM through the conceptual framework adapted from (Haleem et al., 2020; Khan et al., 2018; Omar, 2017). From the three studies, researchers made adjustments and focused the coverage of HSCM on halal production and resource management. The focus on halal production and resource management includes ten elements, namely cleanliness, safety, Islamic law compliance, physical segregation, storage and transport, packaging and labelling, ethical practices, training and personnel, innovative capability, and resource availability.

In its implementation, HSCM does not only talk about ethical and fair business practices but also about the impact of sustainability and social responsibility values (Haleem et al., 2020). In several previous studies, experts and professionals, see the need for a broader framework to analyse the effectiveness of HSCM on business sustainable performance as measured in terms of economic, environmental, and social performance (Haleem et al., 2020). So, this study aims (1) to analyse the effect of implementing HSCM factors on the effectiveness of HSCM, and (2) how the relationship between effective HSCM and the sustainability performance of a business is related.

2. Literature Review and Hypotheses Development

2.1 Halal Supply Chain Management (HSCM)

Halal Supply Chain Management (HSCM) is a concept that is starting to develop and is widely discussed (Khan et al., 2018; Indarti et al., 2020). Khan et al. (2018) stated that the development of the HSCM study was still considered very difficult due to the absence of clear definitions and concepts. Then based on the literature and empirical studies conducted, Khan et al. (2018) propose a broader definition of HSCM. HSCM is a process to manage and ensure that all activities in the supply chain, such as procurement, handling, material processing, storage, to sales, are carried out and documented properly according to the established halal standards. HSCM focuses on ethical, fair, humane, sustainable, and socially responsible business practices and activities (Haleem et al., 2020).

This study adopts the HSCM implementation model from Omar (2017) to realize an effective HSCM. The HSCM implementation model emphasizes the internal functions of the product production process to improve product quality. According to Indarti et al. (2020), one of the growing focuses of discussion in countries that are concerned about the halal concept is

regarding halal integrity assurance in the HSCM of business (Ab Rashid & Bojei, 2020; Zainuddin et al., 2019; Zulfakar et al., 2019). There are ten elements in this HSCM implementation model, namely cleanliness, safety, Islamic law compliance, physical segregation, storage and transport, packaging and labelling, ethical practices, training and personnel, innovative capability, and resource availability.

2.1.1 Cleanliness

Halal, as outlined by Sharia principles, signifies that something is permissible (Ambali & Bakar, 2014). The concept of halal is frequently linked with "*tayyib*," denoting cleanliness and purity. In the context of halal products, "*tayyib*" pertains to the stringent process by which a product must be pure and untainted (Alzeer et al., 2018), devoid of impurities, contaminants, and harmful germs. This meticulous process is in place to guarantee the safety, hygiene, and non-harmful nature of the products for human health. Cleanliness is very important in the implementation of HSCM to keep the production process and matters related to it safe (Ambali & Bakar, 2014).

2.1.2 Safety

Safety is an important element that needs to be emphasized in halal products. Safety is not only emphasized on finished products, but also on materials, equipment, and the production process of halal products. A safe product production process can provide convenience for consumers. In this case, safe means that the product is not produced and does not contain ingredients that harm consumers (Ambali & Bakar, 2014; Alzeer et al., 2018; Said et al., 2014).

2.1.3 Islamic Law Compliance

Islam is not only about religious rituals, but a source of core values for human life (Omar, 2017). The form of one's obedience to Islamic law can describe the level of religiosity. A person's compliance to Islamic law will be reflected in his daily attitudes and behaviour (Minton et al., 2019; Jannah & Al-Banna, 2021). For example, in consumption behaviour (Abd. Rahim & Junos, 2012), life insurance (Souiden & Jabeur, 2015), banking (Amin et al., 2014), to the use of cosmetics (Majid et al., 2015). In the business context, the compliance can also be seen from how business people run their entire business. Business people who comply with Islamic law will always ensure that all materials, tools, production processes, to distribution, are obtained and carried out in accordance with Sharia principles.

2.1.4 Physical Segregation

The production process of halal products emphasizes the importance of being careful in managing production materials (Omar, 2017). Being careful in managing these production materials is related to the equipment, facilities, and places used to process and produce these materials. To ensure compliance with halal standards, there are specific criteria that must be met when it comes to the utilization of equipment and facilities (Tieman, 2017), namely (1) avoiding the interchangeability of processing equipment used for halal and non-halal products; (2) employing separate facilities for cleaning tools designated for halal and non-halal purposes; (3) implementing distinct facilities for maintaining tools used in halal and non-halal processes, (4) providing segregated storage areas for tools and equipment used in halal and non-halal production.

2.1.5 Storage and Transportation

In the production process, there are many possibilities of contaminated production resources or materials (Omar, 2017). Physical separation refers to the practice of preventing the mixing of halal ingredients with non-halal ingredients in the supply chain process (Nghah et al., 2014). Because the risk of contamination is very high, it is important to be careful in managing the process of storage, use of transportation, and the process of producing goods (Tieman, 2017). Omar (2017) emphasize that the most crucial and vulnerable thing in maintaining the halal integrity of a product are activities related to product storage, transportation, and distribution. The production facility, its surroundings, and the equipment used should be distinct from the areas and equipment used for processing, storing, packaging, distributing, selling, and displaying non-halal products (Tieman, 2011). Moreover, the production area, its surroundings, and equipment should adhere to high cleanliness and hygiene standards, ensuring they are free from impurities and non-halal substances. HSCM emphasize ease of access to dedicated halal storage or halal transportation (Tieman et al., 2010).

2.1.6 Packaging and Labelling

Product packaging is a process to keep the product safe and tidy. Halal products are not only focused on the production process that must follow halal standards, but also on the packaging and labelling process. Packaging also cannot be made of non-halal materials. Product labelling consists of information about products, ranging from raw materials, including all incidental materials that can affect the halal status of a product (Omar, 2017). Hiding information about ingredients is not allowed. Halal labels must be easy to see and read and not easily erased, removed, and damaged.

2.1.7 Ethical Practices

The production process of halal products must be ethical and comply with Sharia principles (Omar, 2017). The ethical practice in question includes attention to the objects and materials used, as well as all workforce actions and behaviours related to the series of halal product production processes. For example, emphasizing the principles of being environmentally friendly, containing organic ingredients (Mohamad & Hassan, 2011), conducting fair and responsible trade transactions (Omar, 2017), both socially and environmentally, not using hazardous materials so as not to engage in behaviour that can harm consumers. Additionally, being ethical in the overall production process of products related with, directing to increasing the halal awareness (Billah et al., 2020; Ab Talib & Zulfakar, 2023).

2.1.8 Training and Personnel

Several studies emphasize the importance of improving the skills of business actors and workers who carry out the production process of halal products (Shafii & Wan Siti Khadijah, 2012; Omar, 2017). Training and learning on matters related to halal products is recognized as a concrete step to be able to develop knowledge and skills of the workforce (Omar, 2017). Business actors can supervise and determine corrective and preventive actions against the production process of halal products that are not in accordance with Islamic Sharia. So that business actors need to have broad insight about the halal concept of a product and can be responsible for also increasing the literacy of workers who are directly related to the halal production process. It is due to the involvement people in the overall production process is critical. It is important to

ensure that workers understand halal requirement and could implement correctly (Iranmanesh, Zailani, Kanapathy, & Tieman, 2015 in (Ali & Suleiman, 2018).

2.1.9 Innovative Capability

The foundation of an organization's success has been attributed to its innovative capabilities. (Hu et al., 2009; Korzilius et al., 2017; Riaz, 2018). From a business perspective, producers who have innovative capabilities will have high competitiveness (Jannah, 2021). Innovative capabilities will direct business people to have more effective, efficient, and productive business processes (Crossan & Apaydin, 2010; Riaz, 2018). Innovative ability itself pertains to an organization's capacity to generate, introduce, and effectively implement new ideas, processes, and procedures in its operations (Bala, 2019; Scott et al., 2013; Bala, 2019).

In the context of the halal industry, the innovative ability of business actors is needed to ensure halal integrity through the HSCM of a product (Zailani et al., 2010). This type of innovation is linked to leveraging technology to enhance the competitiveness of halal products on the global market. (Omar, 2017). In addition, business actors can also develop the halal traceability system for their products. This is in view of the increasing consumer awareness of the production process of halal products.

2.1.10 Resource Availability

Availability of resources refers to the availability of inputs in the production process of halal products, including capital, raw materials, equipment, infrastructure, labour, labour skills, patents, brands, to halal certification (Omar, 2017). The organization must be able to ensure that the available resources are halal and obtained from halal sources, for example about raw materials. Moreover, resource itself also concerns to organisation and information management (Tieman et al., 2012b).

2.2 Hypotheses Development

HSCM is one of the competitive strategies to make today's business people sustainable (Haleem et al., 2020). HSCM aims to ensure the halal integrity of a product so that consumers can enjoy and use the product safely and comfortably. Not surprisingly, more and more studies are concerned with this issue (Zailani et al., 2010; M. I. Khan et al., 2018). The study of Mesic et al. (2018) mentions the importance of focusing on critical factors in HSCM implementation to realize an effective HSCM. This study uses 10 critical elements in measuring HSCM implementation, namely cleanliness, safety, Islamic law compliance, physical segregation, storage and transport, packaging and labelling, ethical practices, training and personnel, innovative capability, and resource availability. A good HSCM implementation will be able to improve the process and integrity of the overall resources in producing a halal product to increase consumer satisfaction and trust.

HSCM effectiveness indicates a good quality of the halal product production process. This study conducted by Haleem et al. (2020). Whether HSCM is good or not, it can be measured from 3 things, namely halal integrity maintenance and its assurance, customer satisfaction and branding, and process quality improvement. Because the purpose of effective HSCM is to gain and increase consumer trust through various activities to maintain, ensure, and even improve the process and integrity of the entire resource in producing a halal product. It is in line with the

finding of Soon et al. (2017) and Haleem, Islamia, et al. (2021), which concluded that HSCM strives to ensure the halal effectiveness through comply the halal requirements.

- H1: Cleanliness has a positive influence on HSCM effectiveness.
- H2: Safety has a positive influence on HSCM effectiveness.
- H3: Islamic law compliance has a positive influence on HSCM effectiveness.
- H4: Physical segregation has a positive influence on HSCM effectiveness.
- H5: Storage and transport have a positive influence on HSCM effectiveness.
- H6: Packaging and labelling have a positive influence on HSCM effectiveness.
- H7: Ethical practices have a positive influence on HSCM effectiveness.
- H8: Training and personnel have a positive influence on HSCM effectiveness.
- H9: Innovative capability has a positive influence on HSCM effectiveness.
- H10: Resource availability has a positive influence on HSCM effectiveness.

HSCM effectiveness concern to establishing sustainability of the halal supply chain practices (Sapukotanage et al., 2018). HSCM effectiveness conduct to integrate the sustainability all of the materials and procedures in halal supply chain practices. Studies state that effective HSCM implementation can be the main pillar to improve organizational performance (Omar, 2017). This study uses a Triple Bottom Line approach to measure the sustainable performance of HSCM effectiveness. In the Triple Bottom Line approach, three performance measurement systems are used, namely economic, environmental, and social performance (Kafetzopoulos et al., 2013; Schaltegger & Burritt, 2014; Haleem et al., 2020). It identifies that HSCM effectiveness bring about positive outcomes economically, environmentally, and socially as the sustainability performance. Sustainable performance is how an organization or business can balance these three forms of performance in the long term. The concept of green supply chain management that is in line with HSCM has been widely proven to have an impact on the sustainability performance of an organization (Mitra & Datta, 2014; Omar, 2017). This relationship is supported by some recent literature, such as (Haleem, Islamia, et al., 2021; Haleem, Khan, et al., 2021a; Zailani et al., 2018b; Kurniawati & Cakravastia, 2023). Sustainability performance assessment is a crucial area of study in the discussion of supply chain management (SCM). There have been many studies that discuss this from the conventional SCM side, but those that focus on the relationship between HSCM and sustainability performance are still rarely found (Haleem et al., 2020). So, this study attempts to analyze the relationship HSCM effectiveness towards sustainability performance.

- H11: HSCM effectiveness has a positive influence on economic performance.
- H12: HSCM effectiveness has a positive influence on environmental performance.
- H13: HSCM effectiveness has a positive influence on social performance

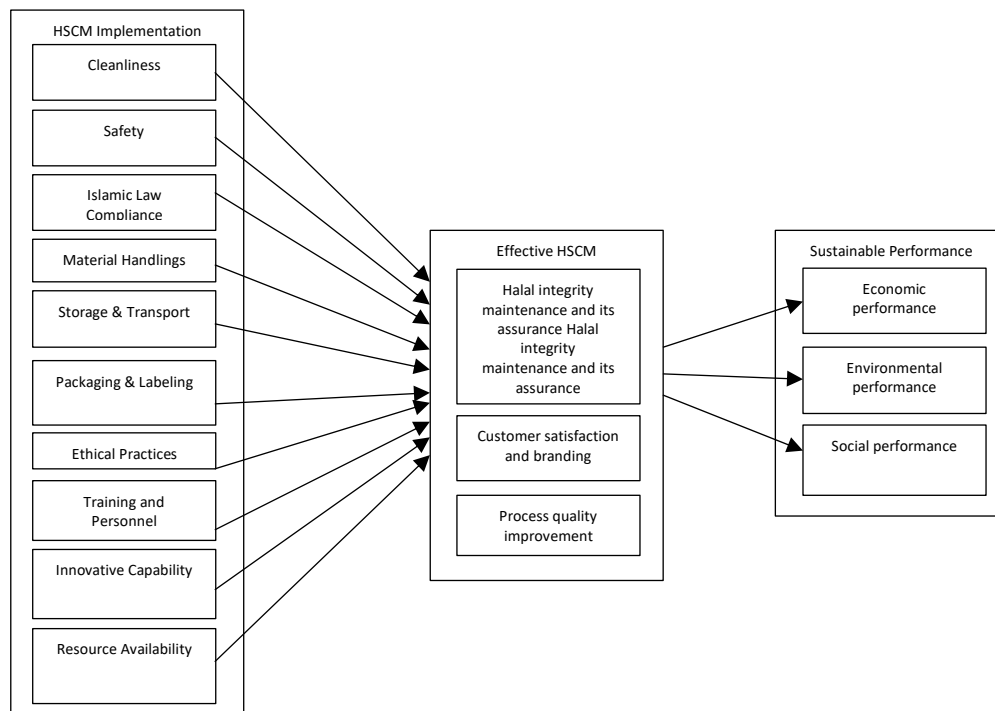


Figure 1 Conceptual Framework

3. Research Methods

3.1 Research Desain and Sample

This research employs a quantitative methodology, using self-administered surveys as the primary data collection tool. The survey was specifically designed to assess various internal aspects related to Halal Supply Chain Management (HSCM), its effectiveness, and the performance of businesses. The study's participants consisted of Micro, Small, and Medium Enterprises (MSMEs) located in the Yogyakarta region. To ensure reliable and objective responses, the questionnaire was targeted at business owners or managers. These individuals were chosen because of their comprehensive understanding of their company's overall performance. This approach aimed to minimize potential biases in the data. The survey instrument was thoughtfully designed with a clear and user-friendly layout, utilizing a balanced scale, and engaging language to make it reader-friendly. Additionally, participants were offered convenient access to the research results, should they wish to obtain further information, to enhance transparency and collaboration in the study.

3.2 Variable Measurement

This study uses an instrument adopted from several previous studies. HSCM which consists of cleanliness, safety, Islamic law compliance, physical segregation, storage and transport, packaging and labelling, ethical practices, training and personnel, innovative capability, and resource availability is measured using an instrument adopted from the study of (Omar, 2017) with total of 32 questions. HSCM Effectiveness (halal integrity maintenance and its halal assurance, customer satisfaction and branding, process quality improvement) and performance (economic performance, environmental performance, social performance) were measured

using instruments from (Khan et al., 2021) with the number of each question is 12 and 13 questions. The performance measured in this study is divided into three performances, namely economic performance (related to financial aspects), environmental performance, and social performance because in sustainability performance it is not enough to only test financial performance.

3.3 Data Analysis

The research data was analysed using Partial Least Squares – Structural Equation Model (PLS-SEM). PLS-SEM is a versatile approach that is used to evaluate a path model, which includes latent constructs assessed by multiple indicators. This approach involves a two-step process: first, assessing the reliability and validity of the measurement model, and then examining the structural model to confirm the reliability and validity of construct measurement before drawing any conclusions.

In the structural model analysis, attention is given to metrics such as the R² value and the magnitude of the structural path coefficient. This helps evaluate the significance and strength of the relationships between variables, allowing for the drawing of conclusions about the hypotheses being tested. (Hartmann, F., Naranjo-Gil, D., & Perego, 2010). Through this model, it can be seen the level of significance and beta value of the tested variables so that conclusions can be drawn regarding the hypothesis.

4. Result and Discussion

4.1 Result

This study examines the sustainable performance of MSMEs that are influenced by HSCM and HSCM Effectiveness. The sample in this study was 103 MSMEs spread across the Yogyakarta area. The data was obtained using a direct survey (paper based) and online via google form. The data is directly filled in by the business owner or manager as a representation of the company. Based on the analysis, most of the businesses are in the food and beverage sector with a relatively low number of employees. In addition, the income level is still relatively low, with the majority under Rp 30.000.000, -. However, the business has been around for a long time with the majority of MSMEs having been around for more than 10 years. Complete information related to respondents is listed in Table 2 below.

Table 2 Demographic Respondents

Information	N	Percentage
Type of Business		
Food & Beverage	38	36.89
Convection	22	21.36
Groceries	23	22.33
Other	20	19.42
Length of Business		
<2 years	12	11.65
3-6 years	30	29.13
7-10 years	13	12.62
>10 years	48	46.60
Monthly Income		
< IDR 5.000.000	52	50.49
IDR 6.000.000- IDR 10.000.000	37	35.92
IDR 11.000.000- IDR 30.000.000	12	11.65
IDR 31.000.000- IDR 50.000.000	2	1.94
> IDR 50.000.000	0	0
Number of Employee		
<10 employees	93	90.29
10-25 employees	6	5.83
26-50 employees	4	3.88
>50 employees	0	0

Before evaluating the construct, it is crucial to conduct tests for validity and reliability to ensure the suitability of the instrument and the potential generalizability of the final results. The validity test aims to ascertain the instrument's ability to measure the intended aspects of a concept (Cooper, D. R., & Schindler, 2011). On the other hand, the reliability test assesses the precision of the measuring instrument and checks the consistency of the measurement outcomes. An indicator is deemed valid if it exhibits an AVE value > 0.5 , and a reliable indicator is confirmed by a composite reliability value > 0.7 and Cronbach's alpha > 0.6 (Hair, 2011). The results of the validity and reliability tests are listed in table 3 below.

Tabel 3 Validity and Reliability Testing

Variables	Loadings	AVE	Composite Reliability	Cronbach's Alpha
Cleanliness		0.610	0.824	0.680
Clean2	0.759			
Clean3	0.765			
Clean4	0.819			
Safety		0.609	0.823	0.677
Safe1	0.738			
Safe2	0.769			
Safe3	0.831			
Islamic Law Compliance		0.746	0.898	0.829
IL1	0.822			
IL2	0.898			
IL3	0.868			
Physical Segregation		0.580	0.868	0.806

Variables	Loadings	AVE	Composite Reliability	Cronbach's Alpha
PS1	0.880			
PS2	0.915			
PS3	0.810			
PS4	0.643			
PS5	0.465			
Storage and Transport		0.637	0.832	0.689
ST1	0.501			
ST2	0.898			
ST3	0.924			
Packaging and Labeling		0.750	0.897	0.817
PL1	0.614			
PL2	0.968			
PL3	0.968			
Ethical Practices		0.699	0.862	0.741
EP1	0.415			
EP2	0.981			
EP3	0.981			
Training and Personnel		0.773	0.910	0.851
TP1	0.812			
TP2	0.892			
TP3	0.929			
Innovative Capability		0.603	0.859	0.781
IC1	0.750			
IC2	0.754			
IC3	0.805			
IC4	0.797			
Resource Availability		0.567	0.836	0.735
RA1	0.556			
RA2	0.821			
RA3	0.850			
RA4	0.748			
Effective HSCM		0.501	0.899	0.873
EFF4	0.559			
EFF5	0.677			
EFF6	0.829			
EFF7	0.722			
EFF8	0.748			
EFF9	0.630			
EFF10	0.807			
EFF11	0.677			
EFF12	0.677			
Economic Performance		0.579	0.873	0.817
ECO1	0.823			
ECO2	0.774			
ECO3	0.750			
ECO4	0.751			
ECO5	0.700			
Environmental Performance		0.647	0.879	0.816
ENV1	0.855			
ENV2	0.736			

Variables	Loadings	AVE	Composite Reliability	Cronbach's Alpha
ENV3	0.857			
ENV4	0.762			
Social Performance		0.942	0.918	0.803
SOC1	0.918			
SOC2	0.872			
SOC3	0.922			
SOC4	0.870			

Based on the table above, almost all indicators are in accordance with the assumptions of validity and reliability. AVE value, reliability value, and Cronbach's alpha has sequential values > 0.5 , > 0.7 , and > 0.6 . It means the research instrument has reliability accuracy to measure the variables of HSCM, Effectiveness of HSCM, and performance. Clean1, EP 4, RA5, EFF1, EFF2, EFF3 indicators were removed from the test because they did not meet the assumptions. Next, construct testing can be done.

The hypotheses were tested simultaneously using PLS-SEM to see the path coefficient values or t-values so that the significance of the results could be known. Figure 1 shows the structural model result and it is known that cleanliness, Islamic law compliance, training and personnel, and resource availability have no significant effect on the HSCM effectiveness. Nevertheless, it is interesting to know that safety, physical segregation, storage and transport, packaging and labelling, ethical practices, and innovative capabilities have a significant relationship with the HSCM effectiveness. Then, sustainability performance is significantly affected by the HSCM effectiveness. Conclusions on hypothesis testing are listed in Table 4.

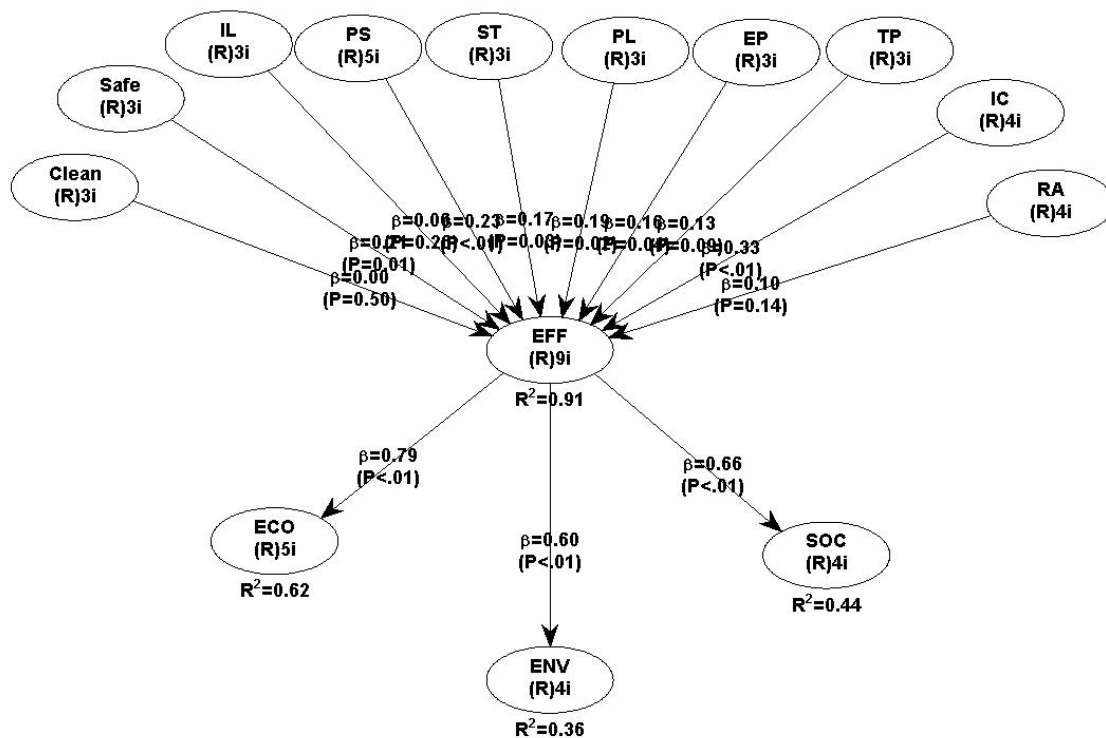


Figure 2 Structural Model Result

Table 4 Hypothesis Testing

Path	Path Coefficient	P Values	R-Squared	Conclusion
H1 (Clean → EFF)	0.00	0.50	0,91	Rejected
H2 (Safe → EFF)	0.21	0.01	0,91	Supported
H3 (IL → EFF)	0.06	0,26	0,91	Rejected
H3 (PS → EFF)	0.23	<.01	0,91	Supported
H5 (ST → EFF)	0.17	0.03	0,91	Supported
H6 (PL → EFF)	0.19	0.02	0,91	Supported
H7 (EP → EFF)	0.16	0.04	0,91	Supported
H8 (TP → EFF)	0.13	0.09	0,91	Rejected
H9 (IC → EFF)	0.33	<.01	0,91	Supported
H10 (RA → EFF)	0.10	0.14	0,91	Rejected
H11 (EFF → ECO)	0.79	<.01	0,62	Supported
H12 (EFF → ENV)	0.60	<.01	0,36	Supported
H13 (EFF → SOC)	0,66	<.01	0,44	Supported

4.2 Discussion

This study found that HSCM is the right model to encourage the realization of HSCM effectiveness. Safety, physical segregation, storage and transport, packaging and labelling, ethical practices, and innovative capabilities as a HSCM construct have a significant relationship with the HSCM effectiveness. The results of this study support research conducted by (Haleem, Khan, et al. (2021). Separately, a safe product production process can provide health for consumers and it encourages the creation of an effective HSCM implementation (Nor et al., 2016). It is important to understand that all businesses must demonstrate a strong commitment to ethical behaviour including safety as a standard (Meza-Ruiz et al., 2017). Then, Tieman et al. (2012) mentioned that physical segregation is a need to prevent direct contact between halal products and elements that can damage the halal status intentionally or unintentionally. In line with Omar (2017), it's important to emphasize the necessity of segregating all potential sources of contamination at every stage of the production chain, particularly during processing. Similarly, proper storage and transportation practices dictate that halal and non-halal products should be stored separately during distribution to prevent contamination that could compromise the halal status of the product (Ngah et al., 2015). In line with Zailani et al. (2018), it's highlighted that storage and transport play a vital role in the effective implementation of the halal food supply chain.

The other constructs of HSCM are packaging and labelling, ethical practices, and innovative capabilities. According to Omar (2017), it is important to give careful consideration to the packaging and labelling of products, aiming to ensure the creation of wholesome halal products and to establish a brand identity that shapes customer perceptions and understanding of halal brands. The packaging and labelling procedures are crucial for producing genuine and safe-to-use halal products. Additionally, the role of packaging and labelling is significant in the implementation of HSCM (Syazwan et al., 2016). Apart from packaging and labelling, ethical practices are also the key to success in HSCM (Haleem et al., 2021). An important organization to prioritize ethics in the development of halal products as a form of corporate responsibility to consumers. Likewise with innovative capabilities, organizations must demonstrate innovation in crafting halal products and innovating new product designs in order to thrive in the competitive

halal market. This innovative approach enhances halal transparency across the production process and throughout the supply chain (Ali et al., 2022). It can be concluded that the implementation of safety, physical segregation, storage and transport, packaging and labelling, ethical practices, and innovative capabilities supports the realization of halal integrity maintenance and its assurance of halal, customer satisfaction and branding, and process quality improvement as a construct of HSCM effectiveness.

There are four constructs of HSCM which have no significant effect on HSCM Effectiveness, namely cleanliness, Islamic law compliance, training and personnel, and resource availability. These results indicate that not all HSCM constructs have been implemented by MSMEs so that they cannot significantly improve the process and integrity of the overall resources in producing a halal product. A clean and pure production creates a comfortable feeling for customer (Samoedra et al., 2022) but for business actors, clean production is something that is quite difficult because they have to rearrange processes that have been running for a long time because it requires no small amount of money (Khalid & Ab Aziz, 2019). In line with the results of compliance with Islamic law, the low literacy related to halal standards causes the implementation of compliance is still not optimal (Muhmad et al., 2020). Omar (2017) mentions that halal not only avoids haram food but also starts from planning, processing, and serving products that must be carried out in the right way according to Islam. Low literacy also causes MSMEs to not ideally implement training and personnel. Koskinen (2017) argue that there are still quite a number of MSMEs carrying out the recruitment process in a simple and informal way that is cost-effective so that it is not possible to expect employees to have high competence to implement the halal process ideally. Likewise with resource availability, ideally the organization must ensure that all resources used in the organization's activities are obtained from halal sources. However, MSMEs have not maximally developed all knowledgeable and professional workers who are sustainable in the halal industry (Muhmad et al., 2020). In addition, MSMEs also still rely on business capital from commercial banks. Overall, the lack of knowledge of human resources is the main factor that causes several constructs of HSCM to not be implemented optimally.

The last PLS-SEM result is a significant effect of HSCM effectiveness on sustainable performance. The higher the halal integrity maintenance, customer satisfaction and branding, and process quality improvement, the better the economic, environmental, and social performance of MSMEs will be. This is in line with study of Khan et al. (2021), Azmi et al. (2018), Indarti et al. (2020), Omar (2017). Sustainable performance can balance the three forms of performance (economic, environmental, and social) in the long term to achieve sustainability goals because financial performance is not enough to be the only measure. Non-financial aspects are needed to represent the company's overall performance. In sustainable performance, financial performance is measured in terms of economic performance, while non-financial performance is measured in environmental and social performance. The primary goal of HSCM revolves around preserving and guaranteeing halal integrity, encompassing everything from supplier selection to consumption. This includes material choice, production procedures, distribution, as well as information and financial aspects associated with the product (Khan et al., 2020). Therefore, the more effective HSCM is, the better consumer response, a healthy environment, and social responsibility will be realized

We also conducted additional analysis to determine the extent to which MSMEs provide information about products to consumers on the marketing media used. It can be correlated with the halal traceability or halal tracking system. According to (Zailani et al., 2010a), halal

traceability is the ability of consumer to trace and finding the information regarding the history of supply chain product that they consumed, for example sources of the materials, the physical location to produce, or the all of stages the process of production product. It means that halal traceability is correlated with the halal supply chain. Halal traceability that provided by business can mirroring their quality of the supply chain management.

Based on the data, majority respondents are quite open to providing a lot of information about the product. The most widely given information is information related to product prices, product raw materials, and business locations with the percentages being 26%, 19%, and 19%, respectively. Other information that is given quite a lot is related to customer testimonials and information outside the product such as motivational sentences or invitations to buy products. More complete information is listed in Figure 3. It can be concluded that most MSMEs have provided general product information to consumers. It's good for the consumer to know more about the quality of the halal supply chain management of the product they consumed. The more proper the halal traceability representing the better the quality of halal supply chain management.

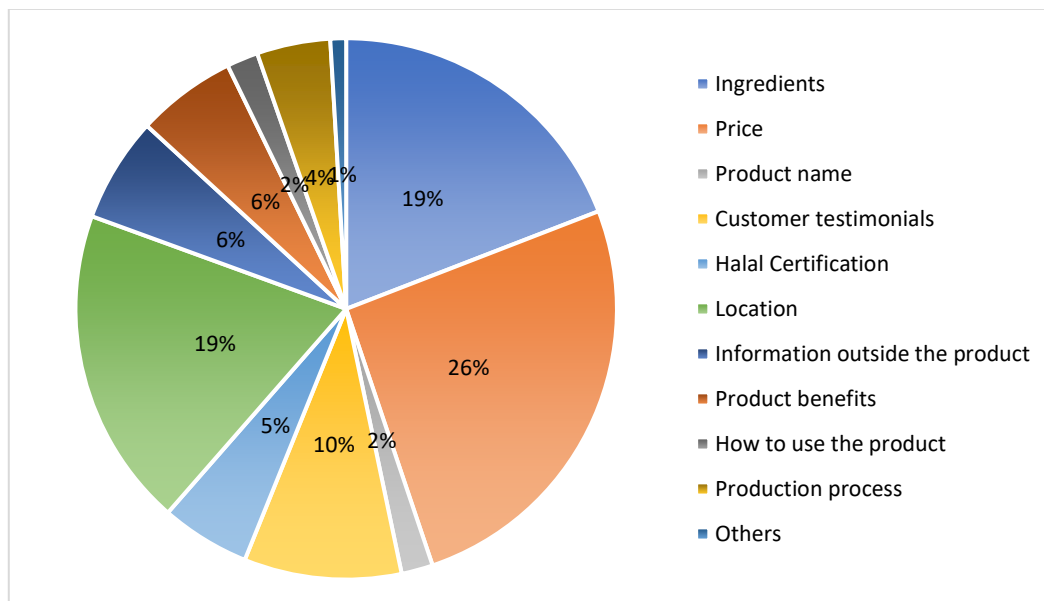


Figure 3 Information Included in Marketing Media

5. Conclusion and Recommendation

Muslim consumers today are creating huge market opportunities through the use of products and services based on Islamic values. MSMEs are drivers of the Indonesian economy because the majority of them must seize the opportunity of this change to achieve sustainable performance. The most important step is to understand HSCM because the HSCM concept is an important issue for business actors because of the increasing awareness of consumers about the halal products they consume. HSCM not only discusses ethical and fair business practices, but also focuses on the impact of sustainability values and social responsibility. Through safety, physical segregation, storage and transport, packaging and labelling, ethical practices, and innovative capabilities, businesses can improve HSCM Effectiveness in the form of halal integrity maintenance and its halal assurance, customer satisfaction and branding, and process quality

improvement. Then, an effective implementation of HSCM will encourage an increase in sustainable performance which is explained by economic, environmental, and social performance. Sustainable performance is important because business does not only talk about money but also social responsibility that needs to be a concern in this era. The combination of financial performance and non-financial performance will represent the company's condition validly. Of course, achieving sustainable performance is not instant. Therefore, MSMEs need to be serious in designing business processes starting from understanding the business flow and human resources they have so that they can map every business process they go through.

This research can be expanded further by using a larger sample and covering all regions of Indonesia. Then, this research has not touched the aspects of literacy and the ability to use technology. Future research can overcome this weakness by expanding the aspects discussed. Nevertheless, this research contributes practically and theoretically. For policy makers, this research provides insight that MSMEs still need to be fostered in implementing Halal Supply Chain Management. In addition, it is important to provide marketing media training using applications that are more modern and demanded by current consumers such as Shopee, Lazada, BukaLapak, Tokopedia, and so on to expand marketing and increase sales. For MSMEs themselves, HSCM can be fully implemented as a form of control to achieve sustainability performance such as making improvements in the packaging and labelling process, improving storage and transport, participating in ethical business practices, training innovation, and providing sufficient training to workers. Theoretically, this research can be used to explain the phenomenon of the halal industry which is currently growing rapidly in Indonesia. As the majority business in Indonesia, MSMEs must move from the comfort zone to adapt to consumer needs because halal is one of the competitive strategies based on values with a customer-centered industrial approach.

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