

## **Evaluating the effect of supply chain management practice on implementation of halal agroindustry and competitive advantage for small and medium enterprises**

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### **ABSTRACT**

Effective supply chain management (SCM) has become a potentially valuable way to secure competitive advantage and improve organizational performance because competition is no longer between organizations but between supply chains. This study examines the relationship between the influence of SCM practices on competitive advantage and organizational performance. The data for this study were collected from 165 employees in one of the SMEs in the Halal Agroindustry in Indonesia. Survey data were analyzed using partial least squares structural equation modeling (PLS-SEM). The results suggest that higher levels of SCM practices can lead to increased competitive advantage and improved organizational performance. Also, competitive advantage can have a direct positive impact on organizational performance. This study also confirms the mediating effect of competitive advantage on the relationship between SCM practices and organizational performance.

**KEYWORDS:** Supply Chain Management, Organizational Performance, Halal Agroindustry, Competitive Advantage

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### **1.0 INTRODUCTION**

Halal supply chain management is defined as the management of the halal network with the aim of extending halal integrity from the source to the point of purchase of the consumer [1-5]. To ensure that the product is truly halal at the consumer's point of purchase, it is important to determine what the principles in halal supply chain management are [6-10]. Halal logistics and halal supply chain management are important disciplines for the halal industry in extending halal integrity from source to consumer point of purchase. Halal supply chain management as a process of managing halal food products from various points of suppliers to various points of buyers/consumers, which involves various parties, who are in different places, who may at the same time be involved with managing halal food products, with the aim of meet the needs and requirements of customers (halal and non-halal) [10-21]. Halal supply chain management as halal network management with the aim of extending halal integrity from the source to the point of purchase of consumers. The halal supply chain starts from the point of origin to the point of consumption [22-30]. The era of the industrial revolution 4.0 has made almost all business organizations begin to realize that it is not enough to increase efficiency in an organization, but also that their entire supply chain must be made competitive [31-44]. The understanding and practice of supply chain management (SCM) have become an important prerequisite to remaining competitive in global competition and at the same time to increasing profits [45-61]. The Council of Logistics Management (CLM) defines SCM as a strategically coordinating system of traditional business functions and tactics across these business functions within a given organization and across businesses in the supply chain to improve the long-term performance of each organization and the supply chain as a whole [62-74]. SCM has been defined to explicitly recognize the strategic nature of coordination between trading partners and to explain the objectives of SCM: to improve individual organizational performance, and to improve organizational performance throughout the supply chain [75-86]. The goal of SCM is to integrate information and material flows smoothly throughout the supply chain as an effective competitive advantage. The concept of SCM has received wide attention from many academics, consultants, and business managers [87-94].

From the various competitions conducted by the company, the aim is to implement an effective and

efficient process of producing goods or services to be distributed to consumers. However, in reality the company is not able to carry out all of that so that in overcoming it by choosing shortcuts and convenience to compete with competitors through supply chain management [95-113]. Supply Chain Management plays an important role in a business run by a company. Prior to supply chain management, companies suffered a lot of losses due to product delivery estimates that sometimes did not match market demand [1-27]. Now, by implementing this supply chain management, companies can reduce losses and actually earn above-average profits. In addition, the company can also connect all parties involved in the process of converting raw materials into finished goods. For this reason, the production process and distribution of goods/services produced by a company can run more effectively and efficiently [28-39]. Many organizations have begun to recognize that SCM is the key to building a sustainable competitive advantage for their products and/or services in an increasingly crowded marketplace. However, despite the increased attention paid to SCM, the literature has not been able to offer much about SCM practices in SMEs, let alone Agro- industry SMEs [40-51]. Much of the current theoretical/empirical research on SCM only focuses on the upstream or downstream side of the supply chain, or aspects/perspectives of SCM [52-70]. Topics such as supplier selection, supplier engagement, and manufacturing performance, the influence of supplier alliances on organizations, success factors in strategic supplier alliances, supplier management orientation, and supplier/buyer performance are among the examples [71-82]. Activities in the halal supply chain are warehousing, sourcing, handling transportation and shipping of halal products, inventory management, and other business management strategies such as lean management and value-based management. Halal supply chain management regulates the supply of raw materials for production, processing, marketing, promotion to ready-to-consume products that must comply with halal standards. In general, halal supply chain management consists of four main activities: (1) halal procurement, (2) halal manufacturing, (3) halal distribution, and (4) halal logistics. There are six main components that are very important to get an integrated halal supply chain system. These components are: (1) Human resources (2) Process (3) Environment (4) Accreditation (5) Logistics services (6) Traceability system [82-97]. The principles of halal logistics consist of guaranteeing the expectations of Muslim customers, avoiding mistakes, and avoiding contamination. Zaroni (2016), the development of halal logistics in Indonesia needs to be encouraged and directed to the management of halal logistics in an integrated halal supply chain management system. According to him, a blueprint for the development of halal logistics in Indonesia needs to be drawn up immediately, as a master plan for the development of halal logistics in Indonesia [98-113].

## **2.0 LITERATURE REVIEW**

### ***2.1 SCM Practices***

Supply chain management is the integration of planning, implementation, coordination and control of all business processes and activities to produce and deliver products efficiently to meet market needs [1-13]. The goal of supply chain management is to improve the trust and collaboration of a number of supply chain partners as well as visible inventory improvements and the speed at which inventory increases [14-22]. The starting point of supply chain management is inventory that needs to be managed so that the overall system performance can be better measured from various stakeholder points of view [23-38]. Supply chain management is the management of relationships from upstream to downstream or from suppliers to consumers to provide more value to customers and reduce overall supply chain costs. SCM practices have been defined as a set of activities carried out within an organization to promote the effective management of its supply chain [39-51]. Researcher identified six aspects of SCM practice through factor analysis: supply chain integration, information sharing, supply chain characteristics, customer service management, geographical proximity, and JIT capabilities. Researchers used supplier base reduction, long-term relationships, communication, cross-functional teams, and supplier involvement to measure buyer-supplier relationships [52-74]. Thus, the literature describes SCM practices from different perspectives with a common goal of ultimately improving organizational performance. In reviewing and consolidating the literature, five different dimensions, including strategic supplier partnerships, customer relations, level of information sharing, quality of information sharing, and delays, were selected. to measure SCM practices [75-83]. The five constructs include upstream (strategic supplier partnerships) and downstream (customer relations) sides of the supply chain, information flows across the supply chain (level of information sharing and quality of

information sharing), and internal supply chain processes (delays) [84-113].

2.2 Competitive Advantage

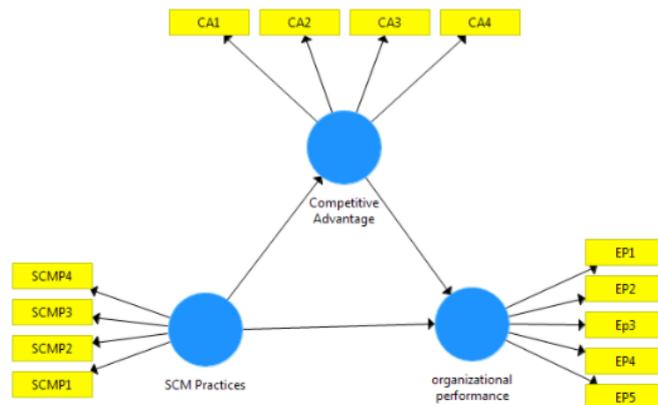
Competitive advantage is the extent to which an organization can create a defensible position over its competitors [1-17]. It consists of capabilities that enable an organization to differentiate itself from its competitors and is the result of critical management decisions [18-29]. The empirical literature has been fairly consistent in identifying price/cost, quality, delivery, and flexibility as important competitive capabilities [30-41]. In addition, recent research has included time-based competition as an important competitive priority. Several studies have identified time as the next source of competitive advantage. Based on the previous literature, Project describes a research framework for competitive capability and defines the following five dimensions: competitive pricing, premium pricing, value-to-customer quality, reliable delivery, and product innovation [42-58]. This dimension is also described. Based on the description above, the dimensions of competitive advantage construction used in this research study are price/cost, quality, delivery dependence, product innovation, and time to market [59-80].

2.3 Organizational Performance

Performance is one of the important factors in maintaining the company's existence. Performance is the level of success to realize the company's goals [1-19]. Therefore, performance measurement is very important for the purpose of achieving successful business processes. In the context of the halal supply chain, its performance must be assessed in terms of its efficiency and effectiveness in protecting the integrity and robustness of the halal supply chain. Several methods are used to measure supply chain management performance, namely the balanced scorecard, data envelopment analysis, and SCOR [20-34]. Organizational performance refers to how well an organization achieves its market-oriented goals as well as its financial goals. The short-term goals of SCM are: mainly to increase productivity and reduce inventory and cycle times, while the long-term goals are to increase market share and profits for all supply chain members [35-41]. Financial metrics have served as a tool for comparing organizations and evaluating organizational behavior over time. Any organization's initiatives, including supply chain management, should ultimately lead to improved organizational performance [42-59]. Some previous studies have measured organizational performance using financial and market criteria, including return on investment (ROI), market share, the profit margin on sales, ROI growth, sales growth, market share growth, and overall competitive position [60-78].

**3.0 METHODOLOGY**

In line with the above literature, the same items will be adopted to measure organizational performance in this study.



**Fig. 1.** The proposed mediation model

In connection with this research, the following hypotheses were developed:

**H1: SCM practices have a significant effect on competitive advantage.**

**H2: SCM practices have a significant effect on organizational performance.**

**H3: Competitive advantage has a significant effect on organizational performance.**

**H4: Competitive advantage mediates the relationship between the influence of SCM practices on organizational performance.**

A quantitative approach and survey methodology were used to collect employee data. For this study, 245 sets of questionnaires were given and 165 sets of returned and valid ones were given. So, as many as 67.3% of employees were involved in this study as respondents. Employees were asked to voluntarily fill out a questionnaire containing statements about demographics, SCM practices, competitive advantage, and organizational performance. The questionnaire contains the names of the respondents on the back which is only used for identification and matching purposes. Complete confidentiality is guaranteed where the names of the respondents are only owned by the researcher. All study constructs were measured on a five-point Likert scale. All measurement items were adapted from previous research after studying the evolution of the variables discussed. The instrument that measures SCM practice was developed by Li et al. (2006). The instrument that measures competitive advantage and organizational performance was adopted by Zhang (2001). The questionnaire is designed to be closed except for questions/statements regarding the identity of the respondents in the form of a semi-open questionnaire. Each item of closed questions/statements is given five answer options, namely: strongly agree score (5), agree on the score (4), neutral score (3), disagree score (2) and strongly disagree score (1). The method for processing data is PLS and uses the SmartPLS software version 3.0 as the tool.

## 4.0 RESULT

Fig. 2 presents the summary of the results of the survey.

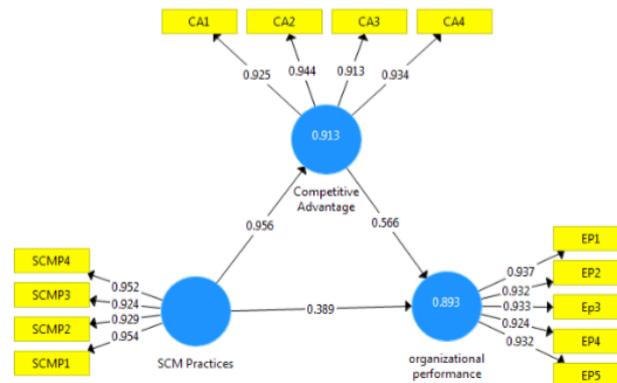


Fig. 2. Valid Research Model

### 4.1 Evaluation of the Proposed Model

The structural equation modeling approach was used to validate our research model. To perform the analysis partial least squares (PLS) was employed [1-23]. The PLS technique can be very helpful to obtain measures about the internal reliability and validity of the research model. These measures can show the level of relationship's strength between the defined constructs in the model [24-38].

- **Reliability Test:** reliability test is use for testing reliability of constructing. Main way exists for determining contract reliability like Cronbach's alpha and composite reliability. If content of each feature is more than 0.70 that means this construct is acceptable [1-24].
- **Composite Reliability Test:** composite reliability is used for measuring of the reliability of a specific related item to the feature, which are similar but heterogeneous. The reliability of the constructs is used for testing based on Clum, which says if composite reliability is greater than 0.70, it means that the item has high reliability [25-42].

- **Average Variance Extracted (AVE) Test:** average variance extracted is the variance in the indicators explained by the common factor, and average trait-related variance extracted. AVE varies from 0 to 1, and it represents the ratio of the total variance that is due to the latent variable. A variable extracted of greater than 0.50 indicates that the validity of both constructs and the individual variables is highly valid. According to these results, all of the constructs are variable because their contents are greater than 0.50 [43-58].

#### 4.2 Hypotheses Test

For preceding the study, according to the evaluation and prediction of the structural model [102], [107], some data about the path coefficients ( $\beta$ ), T-values (T), P-values (P) and squared R ( $R^2$ ) are identified in details [1-36].

- **Path coefficients ( $\beta$ ):** Path coefficients ( $\beta$ ) show how strong and significant the associations between dependent and independent variables are. It means that, a path coefficient reveals the immediate influence of a variable (considered as cause) that is supposed to result in a different variable (considered as effect). Since a Path coefficient can be identified based on the correlation, it is standardized while a path regression coefficient cannot be considered standardized. Path coefficients should be between 1 and -1 [18-29].
- **T-Value:** For conducting the hypothesis testing the path significance can be determined via t-tests values by using the bootstrapping procedure. Commonly, the acceptable value for T-values larger than two (T-value >1.96) means significant level [30-44].
- **P-value:** The P-value can be considered as a quantitative measure of the numerical importance of testing a hypothesis. Furthermore, regarding the studies conducted formerly, P-value < 0.05 implies the significance of the related hypothesis [28-56].
- **Squared R ( $R^2$ ):** The  $R^2$  shows the expected effect of the model of dependent variables through estimating the percentage of a construct's variance in the model [17-39].

Based on this result and relationship between path coefficients, T-value and P-value that explain in this section, we conclude that each hypothesis was supported. The research model in this study was found to be able to anticipate these factors to reach a high level.

**Table 1**  
Items Loadings, Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE)

Variables	Cronbach's Alpha	Rho_A	Composite Reliability	AVE
CA	0.932	0.954	0.913	0.814
OP	0.912	0.912	0.914	0.809
SCMP	0.914	0.912	0.943	0.612

**Table 2**  
Discriminant Validity

Variables	CA	OP	SCMP
CA	0.943		
OP	0.831	0.935	
SCMP	0.864	0.871	0.832

**Table 3**  
Collinearity (VIF)

Variables	CA	OP	SCMP
CA		3.921	
OP			
SCMP	1.000	3.931	

**Table 4**  
R Square Value

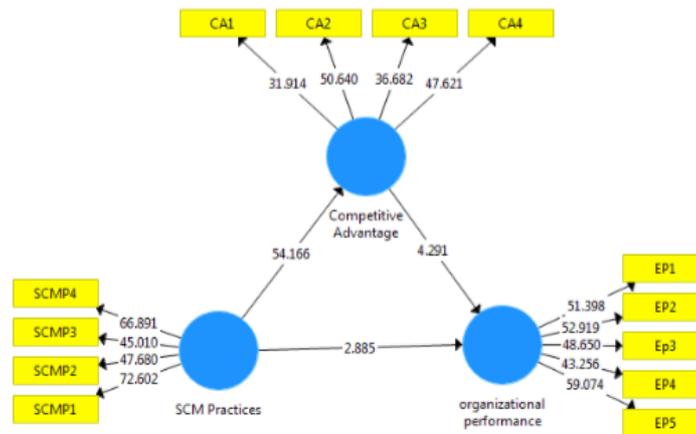
Variables	R Square	R Square Adjusted
CA	0.913	0.901
OP	0.893	0.831

Based on Table 4 above, the value of R Square's competitive advantage (CA) is 0.913 which means that the competitive advantage (CA) variable can be explained by the SCM practices (SCMP) variable of 91.3%, while the remaining 8.7% is explained by other variables not discussed in this research [1-

28]. This means that the substance of influence in the relationship model in this research model is fairly strong. Meanwhile, the R Square value of organizational performance (OP) is 0.893, which means that organizational performance (OP) variables can be explained by SCM practices (SCMP) and competitive advantage (CA) variables of 89.3%, while the remaining 10.7% is explained by other variables which were not discussed in this study. This means that the substance of the influence in the relationship model in this research model is fairly strong (Chin, 1998; Fornell & Larcker, 1981). Meanwhile, Table 5 shows the t-statistics and p-values that show the influence between the research variables that have been mentioned [29-47].

**Table 5**  
**Hypotheses Testing**

Hypotheses	Relationship	Original Sample (O)	T Statistics (O/STDEV)	P Values	Decision
H1	SCMP → CA	0.956	54.166	0.000	Supported
H2	SCMP → OP	0.566	4.291	0.000	Supported
H3	CA → OP	0.389	2.885	0.000	Supported



**Fig. 3. Hypothesis Testing**

### 5.0 DISCUSSION

SCM practices not only have an impact on the organization's overall performance, but also the competitive advantage of an organization. SCM practices can increase an organization's competitive advantage through price/cost, quality, delivery dependability, time to market, and product innovation. Previous studies have shown that various components of SCM practice (such as strategic supplier partnerships) impact various aspects of competitive advantage (such as price/cost) [1-23]. For example, strategic supplier partnerships can improve supplier performance, reduce time to market, and increase levels of customer responsiveness and satisfaction. Good supply chain integration enables organizations to make reliable deliveries and get products to market quickly. Next, organizations that have a competitive advantage generally show that an organization can have advantages over their competitors, namely: lower prices, higher quality, higher reliability, and shorter delivery. This capability, in turn, will improve the organization's overall performance capabilities [24-39]. Competitive advantage can lead to high levels of economic performance, customer satisfaction and loyalty, and relationship effectiveness. An organization that can offer high-quality products can charge a premium price and thereby increase its profit margin on sales and return on investment. An organization that has a quick reach to the market can be first in the market and thus gain market share and higher volume sales. Therefore, a positive relationship between competitive advantage and organizational performance can be proposed [40-58].

The halal supply chain is a process-oriented approach to managing the flow of material, information, and capital, through strategic coordination and collaboration from all entities which aims to ensure that all halal activities from suppliers to end consumers. With the existence of a halal supply chain, expectations for quality standards, product quality, and services for halal products and services can be fulfilled. Researchers develop a model of halal supply chain management [59-78]. In this model, to create a halal supply chain system requires commitment from top management through halal policies,

which act as the basis for supply chain organization. In addition, strategic fit between the company's strategies is also needed and halal policy. The halal supply chain can be an opportunity for Indonesia to increase the competitiveness of national products, especially in the agro-industry sector, especially food [1-16]. This opportunity is wide open not only for producers, but also for Indonesian logistics service providers. The halal supply chain must be supported by all parties, not only industry players. These supporting factors include the government, facilities and infrastructure, adequate information technology, qualified human resources, as well as vertical and horizontal collaborative relationships. In this case, the government plays a strong role in developing strategies, policies and programs for implementing halal supply chains that support the competitiveness of national products [17-33].

To realize a halal supply chain management system, each supply chain actor needs to do the following things to formulate supply chain goals, both externally oriented (also called customer service goals) and internal (also called logistics goals). The formulation of the right supply chain objectives is the key to create a match between the objectives and design parameters. Logistics control is the planning and control of the flow of goods to meet customer needs [34-52]. Supply chain resources, describing the organizational structure and information management involved. Supply chain network structure, is a network of interconnected and interdependent organizations that work together cooperatively to manage, control, and improve the flow of materials and information. Supply chain business processes, describe sourcing, manufacturing and distribution flow management. Halal supply chain performance is an activity to measure how effective supply chain activities are, through the quality aspects of the process and the resulting waste. The halal industry is a necessity for the Muslim community in the world and can be a contributor and catalyst for various value propositions in the global economic recovery [1-23]. The development of the global market for halal products with the number of halal SMEs actors has contributed to the GDP of the national halal economy which reached US\$ 3.8 billion/year. Opportunities to increase demand for the halal industry in the world due to the increase in the world's Muslim population. It is projected that the world's total Muslim population will increase from 1.6 billion people in 2010 to 2.2 people in 2030. Halal consumption has become a lifestyle and culture of Muslim communities in various parts of the world. This is done because it fulfils the demands of religious law which sees the aspect of hygiene as the fulfilment of Islamic law. Muslims will not only be finished with their primary needs met. But will continue to look for ways to meet other needs, namely the need for expression and the need for spiritual fulfilment [24-37]. Halal lifestyle is marked by the increasing awareness of halal (halal awareness) of the community (not only Muslims). The phenomenon of consumers choosing halal food, wearing Muslim clothing, recreation to Muslim-friendly destinations, or transacting using sharia products is an unavoidable thing. The halal lifestyle is based on the awareness that halal is not only due to religious orders but is good and useful for life [38-46].

Supply chain management has become part of the company's strategy in building a competitive advantage. In the context of supply chain management, logistics (logistics) is needed to move the position of materials or goods. Logistics strategies can be implemented to achieve efficiency and effectiveness in managing raw material inventory, production processes, and distribution of finished goods. Supply chain management involves so many processes, from production preparation to meeting consumer needs [36-59].

## 6.0 CONCLUSION

This study provides an empirical justification for the framework that identifies the relationship between the influence of SCM practices on competitive advantage and organizational performance. At the same time confirming the mediating effect of competitive advantage in the relationship between SCM practices and organizational performance. This study has answered at least three research questions: (1) whether organizations with high levels of SCM practices have high levels of organizational performance; (2) whether organizations with a high level of SCM practice have a high level of competitive advantage as well; (3) does an organization with a high level of competitive advantage have a high level of organizational performance as well? (4) Does an organization with a competitive advantage level strengthen the influence of SCM practices on organizational performance? To investigate this issue comprehensively, a valid and reliable instrument has been used to assess SCM practices developed in one of the Agroindustry MSMEs in Indonesia. This instrument was tested using rigorous statistical tests including convergent validity, discriminant validity, reliability, and construct validation. This study provides empirical evidence to support the conceptual and prescriptive

statements in the literature about the impact of SCM practices. Suggestions for further research, because this study only involves the perspective of employees. Future research is recommended to use the perspective of a broader industry organization, not only in manufacturing, but also in services and telecommunications. After the goods have been produced, they must be stored in the warehouse. Warehouse management consists of the process of entering (inbound) and outbound (outbound) goods, picking and packing, cross-docking, and stock taking. Every item that goes in and out must always be recorded. Stock taking must also be carried out periodically so that there is no difference between the actual physical amount of goods and the number of goods recorded in the books. Order returns usually occur when a customer submits a return due to damage, error, or delay. This process involves several activities such as checking product condition, authorizing returns, replacing products, and scheduling deliveries, refunds. If you have implemented good supply chain management within the company, then of course you will be able to feel the benefits of implementing supply chain management, including: Customer satisfaction (consumers) can be obtained if they are satisfied with the company's services. If customers are satisfied, then they become loyal consumers who use the product for a long time. The more loyal customers, the more profit the company will make because the products offered are sold out. This benefit is achieved because of the integration of product flow from the company to the final customer. Cost reductions occur because costs in distribution channels are cut. Assets, especially labor, are increasingly trained and skilled in terms of knowledge and skills. In addition, the workforce is increasingly adept at empowering the use of high technology.

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