SCOR Model for Analyzing Customer Satisfaction on Halal Supply Chain

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Abstract

This study examined the Halal supply chain based on customer satisfaction which it was conducted in Indonesia. A preliminary study found that more than fifty percent respondents were not satisfied with Halal certification. Purpose of this study was to analyze of customer satisfaction based on halal supply chain. The number of samples decided based on the Isaac and Michael approach was 270 respondents. SCOR model was adopted in this study as a framework for making research instrument which it was divided into five process type of plan, source, make, deliver and return. Finding of this study showed that the process type of source did not give positively contribution on customer satisfaction. Indeed, implication of this study concluded that customer did not consider the supplier strategies in providing halal product in the market. Further study is suggested to conduct the Good Manufacturing Practice in order to ensure quality assurance of halal product.

Keywords: Halal certification, SCOR Model, customer satisfaction, supply chain strategy.

Introduction

The Indonesian government seeks to serve consumers in getting quality products to be consumed through the regulation of halal products. It is intended that consumers have a high concern for Halal certified products. The process of labeling halal products complies with the rules established by Islamic Sharia. Islamic Sharia does not allow Muslims to consume certain products whose contents or the accompanying processes are not in accordance with Islamic Sharia (Maison et al., 2018). Furthermore, number of Halal certified products in Indonesia is increasing every year (LPPOM MUI, 2016). This showed that there is motivation for business units to get certification from institutions given authority by the Indonesian government.

A preliminary study on Muslim consumers in Indonesia who consume halal certified product obtained that 53% of respondents were not satisfied. Ideally, an increase in the halal certified products in the market is in line with customer satisfaction. Furthermore, LPPOM MUI as an institution that issues halal certification in Indonesia provides services to several businesses including suppliers of raw material,

processing industries and distributors to register their businesses in getting halal certification. Service of Halal certified products forms a network of cooperation between business units from upstream to downstream to provide customer satisfaction. Kotzab et al., (2019) and Lestari et al., (2014) reviewed cooperation among business units using the supply chain strategy.

The above problems indicated the need for a review of supply chain strategy on halal product for customer satisfaction. There are many supply chain strategy methods used for instrument tools in customer satisfaction studies. This study adopts the SCOR model to see customer satisfaction because this method able to identify in detail the elements of the supply chain strategy including suppliers, manufacturers and distributors. Addition, SCOR Model also be used as business process reengineering, benchmarking, and best practices analysis (Bolstorff and Rosenbaum, 2011).

Halal Supply Chain

Islamic value recommends consuming halal food because it is good for health. As the result, Muslim consumers are increasingly selective in choosing of food product. Specifically in Indonesia, the Government ordered an institution tasked with auditing products consumed by Muslims, which is the Institute for Food, Drug and Cosmetics Studies of the Indonesian Ulema Council (LPPOM MUI). This institution is tasked with overseeing the products that are circulating in the community. This is done by providing halal certificates by providing a halal label on the product. Halal guarantee of a product was known by the halal logo on product because Halal certification able to increase public awareness (Nusran et al., 2018). Moreover, Ratnasari et al. (2019) stated that halal certificates became a moral driver and a provision that has high ties for economic and business practitioners, especially those who are Muslim. Then, there is a tendency in society to see halal certification as a binding legal instrument for economic actors. This result in a social movement that is high enough in order to provide protection for consumers from products that are prohibited by Islamic law. Obviously, the requirement for halal guarantee products for consumers involves many businesses. This requires the cooperation of business actors based on a halal supply chain strategy to serve the needs of consumers.

Furthermore, the rapid development of business units on requires Halal supply chain strategy to get customers in order to avoid bankruptcy. Therefore, Halal supply chain among business units must give a good impression to consumers to increase customer satisfaction. Nindiani et al. (2018) revealed that customer satisfaction is a response from experience related to the presence of products or services. Customer satisfaction able to increase the number of customers with positive information that quickly spreads. To find customer satisfaction, Halal supply chain on business units must know the behavior of consumers in consuming products or using services in order to develop appropriate marketing strategies. Suchánek and Králová (2019) examined consumer satisfaction in food industry. They concluded customer expectation was shown to be an important variable which is influenced by customer satisfaction. This means that the service of halal business units is below the expectations of consumers, resulting in consumers will be disappointed. Conversely, the Halal supply chain of business units provided meet consumer expectations which it will cause consumers to feel happy.

The SCOR Model has a framework for incorporating business processes between business actors in a supply chain strategy. Bolstorff and Rosenbaum (2011) described this method based on 5 core processes including plan, source, make, deliver and return. Plan is an activity that balances overall demand and supply which aims to develop delivery, production and supply needs optimally. Miranbeigi et al. (2015) revealed that demand satisfaction in supply chain strategy able to control business process. Source, the process of procurement and purchasing goods aimed at meeting actual or planned demand. Effects of procurement policy on customer satisfaction have a direct influence supply chain strategy (Ndung'u and Ochiri, 2017). Make is the process of transforming materials into final products to meet planned actual demands. Uncertainty on production levels in supply chain strategy results in low customer satisfaction

(Patil et al., 2012). Deliver is the process of providing finished products to meet actual or planned demand, including ordering management, transportation management, and also distribution. Maldonado-Guzman et al. (2017) conduct on furniture industry. They concluded that logistics flexibility on supply chain strategy able to improve customer satisfaction. Then, return is a process associated with product return and acceptance. Francis and Waiganjo (2014) also revealed adopting supply chain practice increase accurate response to customer satisfaction.

Obviously, the halal supply chain is expected to contribute positively to customer satisfaction as can be seen at figure 1. To test the halal supply chain strategy to increase customer satisfaction, hypothesis testing is carried out including:

    a.   H1 : *Source* on Halal product influence customer satisfaction
    b.   H2 : *Make* on Halal product influence customer satisfaction
    c.   H3 : *Deliver* on Halal product influence customer satisfaction
    d.   H4 : *Return* on Halal product influence customer satisfaction
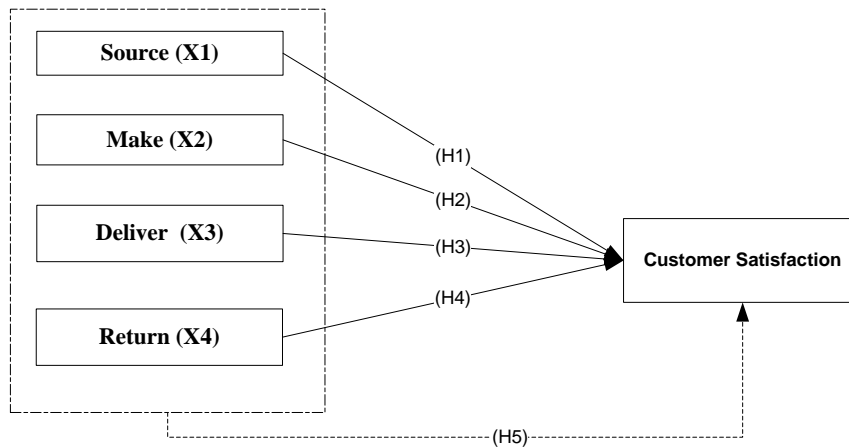   e.   H5 : *Plan* on Halal product influence customer satisfaction

Fig 1. Conceptual framework halal supply chain

Methodology

This research was a case study of halal products in Indonesia. The research design adopted a mixed method approach. Data collection with qualitative method was used to obtain information on business processes in Halal certification provider institutions (LPPOM MUI) through focus group discussion (FGD). There were several experts on FGD involving auditors, assistant laboratory, researcher and other business actors. The data on qualitative method was analyzed using thematic analytic in order to build the supply chain strategy of halal products with adopting the SCOR Model.

Then, to measure the research instrument was done by distributing questioners to consumers of halal products based on quantitative methods. The population of this study was the Muslim community who consume halal products for daily needs. The sampling technique was done by probability sampling. Martínez-Mesa et al. (2016) explained that probability sampling selects respondents as random samples. Furthermore, determining the number of samples was done by looking at the Isaac and Micahel tables with a 90% confidence level. As the result, the number of samples in this study were 270 respondents.

Then, hypothesis testing was carried out including reliability analysis, correlation analysis and regression analysis.

Moreover, data analyzed in this study consisted of several respondents with different backgrounds including 74 male respondents and 196 female respondents. When viewed based on age, respondents aged 15 to 19 years amounted to 22 person, aged 20 to 24 years amounted to 62 person, aged 25 to 29 years amounted to 33 person while ages 30 to 35 years numbered 153 person. In addition, there were respondents who get informal information about halal products from books, magazines, newspapers, radio, television, internet, family and friends. Respondents also got halal information based on the halal logo in traditional markets, supermarkets, daily shops and restaurants.

Finding

The results of interviews and observations at LPPOM MUI were used to obtain business unit strategies for halal products based on the SCOR model. This model was adapted as a supply chain strategy framework divided into variables of plan, source, make, deliver and return. Furthermore, the SCOR model analyzed the supply chain strategy of Halal certified products on customer satisfaction. Plan was a variable planning for the implementation of the halal concept managed by LPPOM MUI. Source was suppliers of halal product related to the strategy of suppliers to obtain raw materials from livestock farming. It was consist of cattle feeding, cattle slaughter, and raising livestock. Make was related to the production of halal product including meat processing, product quality inspection and product packaging processes to labeling. Deliver was the distribution of halal products involving the process of halal product transportation, storage and warehouse. Return was the response of consumer to the product including product ingredients, halal validity and halal labeling. The entire supply chain strategy was tested on customer satisfaction which it can be seen at figure 2.

Validity test using Kaiser-Meyer-Olkin (KMO) is used to test the suitability of factor analysis with a minimum value of 0.5. This study showed that the Kaiser-Meyer-Olkin (KMO) value was above 0.5. It means that all variables used were valid which it can be seen in table 1. For the reliability test, this used alpha value of more than 0.6 which indicated that all variables stated to be reliable. Table 2 is a reliability test in this study.
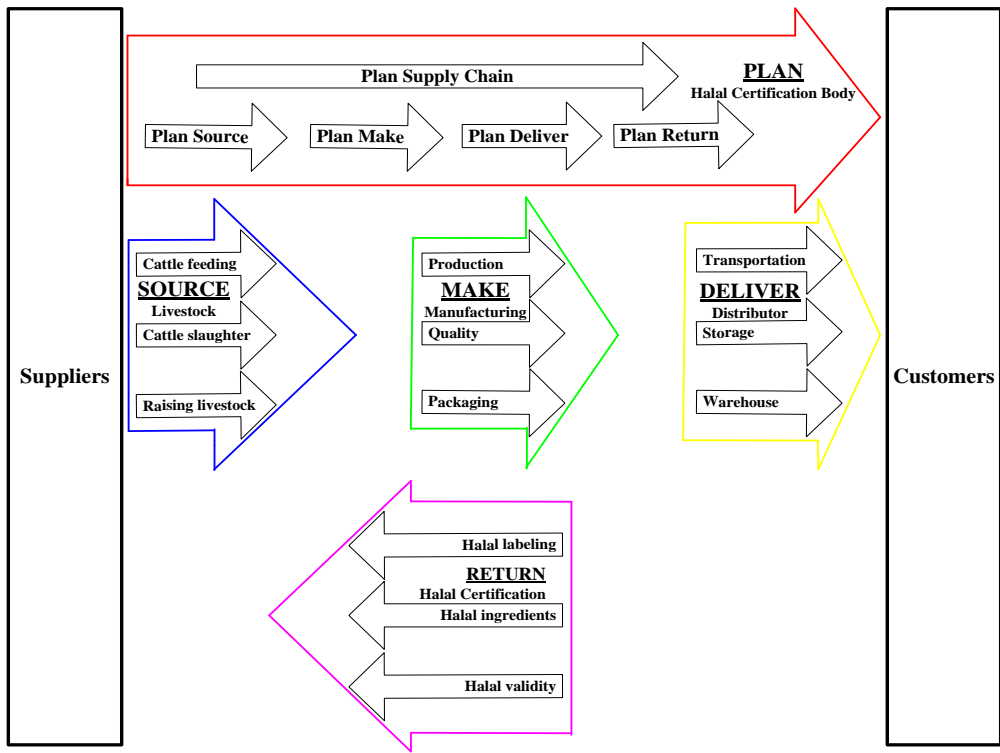
Fig 2. Halal supply chain using SCOR model

Table 1: Kaiser-Meyer-Olkin (KMO)

Variable	KMO	Chi Square	df
Customer satisfaction	0.764	223.245	28
Source	0.574	134.104	15
Make	0.68	127.904	15
Deliver	0.675	184.4	21
Return	0.816	248.37	28

Table 2: Reliability test

Variable	No of Items	Coefficient Cronbach alpha	Note
Customer satisfaction	8	.816	Reliable
Source	6	.831	Reliable
Make	6	.788	Reliable
Deliver	7	.804	Reliable
Return	8	.783	Reliable

Furthermore, correlation analysis is used to study the strength of a relationship between two, numerically measured, continuous variables. This study measured customer satisfaction variable with each variable on SCOR model. Preliminary phase, it decided value of correlation analysis which it can be seen on table 3. Then, it considered significant at the 0.01 level (2-tailed) through $0.00 < 0.05$. This analysis showed that there were correlation between customer satisfaction and variable on SCOR model.

Table 3: Correlation analysis

		Source	Make	Deliver	Return	Customer satisfaction
Source	Pearson Correlation	1	.288**	.444**	.375**	.295**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	270	270	270	270	270
Make	Pearson Correlation	.288**	1	.262**	.273**	.189**
	Sig. (2-tailed)	.000		.000	.000	.002
	N	270	270	270	270	270
Deliver	Pearson Correlation	.444**	.262**	1	.372**	.352**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	270	270	270	270	270
Return	Pearson Correlation	.375**	.273**	.372**	1	.222**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	270	270	270	270	270
Customer satisfaction	Pearson Correlation	.295**	.189**	.352**	.222**	1
	Sig. (2-tailed)	.000	.002	.000	.000	
	N	270	270	270	270	270

**. Correlation is significant at the 0.01 level (2-tailed).

The hypothesis proposed in this study is related to the halal supply chain adopting the SCOR model in order to influence customer satisfaction using regression analysis. Table 4 showed that variable of source has no significant relationship with customer satisfaction ($\beta = 0.053$, $p > 0.05$). Then, variable of make ($\beta = 0.221$, $p < 0.05$), deliver ($\beta = 0.142$, $p < 0.05$) and return ($\beta = 0.218$, $p < 0.05$) influence positively customer satisfaction. Table 5 also showed that variables of SCOR model simultaneously affect positively customer satisfaction ($F = 18.123$, $p < 0.05$). In addition, R-square value represents the total percentage of Halal supply chain practices contribute on customer satisfaction. Table 6 showed that the value of R-square was 21.5%. It means all variables under halal supply chain practices are good predictors of customer satisfaction.

Table 4. Regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	12.255	2.563		4.782	0.000
Source	0.069	0.077	0.053	0.897	0.370

Make	0.253	0.072	0.221	3.532	0.000
Deliver	0.157	0.063	0.142	2.465	0.014
Return	0.22	0.064	0.218	3.438	0.001

Table 5: Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	687.953	4	171.988	18.123	.000ª
	Residual	2514.921	265	9.490		
	Total	3202.874	269			

Table 6: R Square

R	R Square	Adjusted R Square	Std. Error of the Estimate
.463ª	.215	.203	3.081

Finding of this study has examined several hypotheses related on Halal Supply chain with customer satisfaction. There were five hypotheses proposed on this study. Result of Hypotheses Testing can be seen at table 7.

Table 7: Summary Result of Hypotheses Testing

Hypotheses	Description	Result
H1	*Source* on Halal product influence customer satisfaction	Rejected
H2	*Make* on Halal product influence customer satisfaction	Accepted
H3	*Deliver* on Halal product influence customer satisfaction	Accepted
H4	*Return* on Halal product influence customer satisfaction	Accepted
H5	*Plan* on Halal product influence customer satisfaction	Accepted

Discussion

There was one variable that has no effect positively on customer satisfaction which it was represented by the source. Source means supplier strategies have no significant influence on customer satisfaction on Halal supply chain. Customers in consuming halal products do not pay attention to the source of raw materials, slaughtering animals, and animal feeding in livestock farming that is used for halal certified product. It also was proven by the limited number of slaughterhouses in Indonesia getting Halal certification (LPPOM MUI, 2016; Huda and Husen, 2015). Moreover, three variables have a positive influence on customer satisfaction involving make, deliver and return. Make represented manufacturing strategies related consumers knowing halal products with the composition used in the product manufacturing process. Then, deliver also have a significant effect on customer satisfaction. This proved that the customer had paid attention to the distribution of halal products in restaurants, retails or supermarkets. Finally, Return represented Halal certification have a significant effect on customer satisfaction. Customers care about halal labeling of products because customers was careful in choosing halal logo in market. Halal logo on product given a feeling of security and then customer satisfaction will arise.

Furthermore, plan which it represented Halal supply chain including source (livestock farming), make (manufacturing processes), deliver (distributors) and return (Halal certification) together affect positively customer satisfaction. It provided implication that overall supervision by the halal certification body ensure guarantees for products in order to increase customer response in buying halal products. Study was conducted by Lagat el al. (2016) and Manokaran (2019) also stated that supply chain strategy able to increase customer loyalty and improve performance.

Limitation and Future Research

There was one SCOR Model as a representative of the supply chain strategy has proven to test the customer satisfaction towards the Halal certified products. However, this research is only able to identify the strategies of business units based on customer satisfaction involving supplier, manufacturing and distributor and halal certification. More detail, it related with improving performance of the halal supply chain in this study is still limited. Ideally, an increase in halal certified products is proportional to the improvement in the supply chain performance of halal products. Further studies are suggested to improve the performance of Halal supply chain through Good Manufacturing Practice especially for supplier strategies in order to support halal product. Furthermore for practically, LPPOM MUI as halal certification body conducts supervision of halal certified products through regular auditing of business units to increase customer satisfaction.

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