

The Relative Advantage of Halal Logistics: Perspectives from Malaysian Halal Food Firms

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Abstract

This paper aims to provide perspectives on the relative advantage of halal logistics operations among halal firms. The data for this quantitative study were derived from 146 halal management practitioners representing halal product firms. The data was analysed using mean interpretation with SPSS Statistics 27 as the statistical tool. The findings indicate that halal logistics operations provide a distinct relative advantage to adopters. Underpinned by the Diffusion of Innovation (DOI) theory, this study found that the theory adequately explains the benefits offered by halal logistics operations to the ecosystem of halal firms. The identified relative advantage factors include increasing the firm's profit, enhancing competitive advantage, and maintaining the purity of halal products. These results suggest that commercial benefits are key drivers for adoption decisions. The study offers significant implications for halal food firms, logistics providers, and government agencies such as JAKIM and HDC in formulating strategies to encourage the wider implementation of halal logistics practices. Future research could expand on this study by involving populations from other manufacturing schemes, such as halal cosmetics and pharmaceuticals.

Keywords: Diffusion of Innovation; Halal Logistics; Relative Advantage.

1.0 Introduction

Halal originates from an Arabic term referring to matters that are lawful, legal, and permitted in Islam, grounded in Shariah law and fatwas (Ardiani Aniqoh & Hanastiana, 2020; Bux et al., 2022; Department of Standards Malaysia, 2019). Meanwhile, logistics refers to the chain of operations for managing goods—including food and non-food items—involving movement and storage activities (Hashom et al., 2023). The integration of these concepts is termed halal logistics, which implements halal principles within daily logistics operations. Previous studies have defined halal logistics as a process that fulfills Shariah requirements (Iskandar, 2020; Yunan et al., 2020); plans, implements, and manages the efficient flow and storage of halal raw materials, semi-finished, and finished goods from source to demand point

(Ziegler et al., 2022); and involves transportation and warehousing activities (Malaysian Standard, 2019b). Therefore, halal logistics can be defined as transportation and warehousing activities that adhere to Shariah principles.

Halal logistics is a noble innovative service introduced by logistics service providers (Ali et al., 2019; Darlin et al., 2023). This service aims to support halal firms in their daily operations, ensuring the integrity of the halal supply chain ecosystem. Specifically, it maintains product integrity during key activities such as transportation and warehousing (Ngah & Thurasamy, 2018; Yunan et al., 2020, 2024). Halal transportation focuses on managing delivery activities from the manufacturing plant to the consumer market (Malaysian Standard, 2019a). Meanwhile, halal warehousing functions to store products throughout the supply chain (Malaysian Standard, 2019b). The importance of maintaining integrity throughout these processes has been discussed extensively in previous studies (Yunan et al., 2020; Ziegler et al., 2022). Figure 1.1 illustrates halal logistics practices within supply chain activities.



Figure 1: The Halal Logistics Operation Flow

Figure 1 illustrates the halal logistics practices within the halal supply chain ecosystem. The implementation of halal transportation and warehousing serves to secure the integrity of halal products from the point of origin to consumption. While the importance of halal logistics is clearly emphasized in the existing literature (Ngah & Thurasamy, 2018; Yunan et al., 2020, 2024), the perceived relative advantage of these services from the perspective of halal food firms remains underexplored. It is crucial to understand this viewpoint, as empirical evidence regarding these benefits can enrich the understanding of halal logistics for industry players. Therefore, the primary objective of this research is to examine the perceived relative advantage of halal logistics among halal food firms. Rogers' (1983) that introduce Diffusion of Innovation (DOI) theory, provides a clear definition of this concept. Relative advantage is defined as the degree to which an innovation is perceived as superior to the idea it supersedes (Rogers, 1983) and possesses distinct benefits (Rogers, 2002). This definition has been adopted by previous studies (Akel & Ibrahim, 2023; Kit et al., 2016; Yunan et al., 2020). This implies that the implementation of halal logistics should offer specific, superior advantages to users compared to conventional logistics practices.

2.0 Methodology

The population of this study comprises Malaysian halal food firms. A quantitative approach was employed using a seven-point Likert scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). A total of 202 questionnaires were distributed to halal management officers. Following data collection, the dataset underwent a rigorous cleaning process, which addressed missing values, straight-lining, and outlier management. After this cleaning process, 146 valid responses were retained for data analysis. This sample size is deemed acceptable as it aligns with previous studies in the industry, such as Mohammad et al. (2015), Ngah et al. (2015), and Fadhlur et al. (2019), which utilized 137, 140, and 103 respondents, respectively.

2.1 Sampling and Data Collection

A purposive sampling technique was employed, consistent with previous studies (Abdul et al., 2017; Ngah, 2016; Yunan et al., 2020). Data was collected using three distinct strategies. First, questionnaires were distributed during halal training programs and workshops conducted by the Department of Islamic Development Malaysia (JAKIM), the Halal Industry Development Corporation (HDC), and the Halal Products Research Institute (HPRI) at Universiti Putra Malaysia. Participants holding the position of halal management officer were selected as respondents. Second, researchers conducted in-person site visits to halal food manufacturing offices to engage directly with management officers. Finally, questionnaires were emailed to halal management officers at various halal food firms.

2.2 Respondent Profile

The respondents possessed diverse working experiences and represented firms from various locations. Table 1 presents the respondents' tenure as halal management practice officers and the geographical distribution of their firms. The data indicate that the majority of respondents have between 1 and 5 years of experience in the halal industry. Geographically, the respondents represent a variety of states, including Selangor, Johor, and Penang.

Table 1: Respondents Working Experience and the Firms Location

Respondents Working Experience	Total
Less than 1 years	35
1- 5 years	64
6-10 years	28
11-15 years	8
More than 15 years	11
Respondent Firm Locations	Total
Kedah	7
Penang	11
Perak	8
Selangor	75
Negeri Sembilan	1
Melaka	8
Johor	22

Pahang	3
Terengganu	1
Sarawak	3
Kuala Lumpur	7

The measurement items for relative advantage were adapted from previous studies, as shown in Table 2. Specifically, three items were used to measure the relative advantage of halal logistics as perceived by halal food firms.

Table 2: Item Measurement Source

Item Measurement Source	
<i>Relative advantage</i> (Ngah, 2016)	
RA1	Increases my firm's profit
RA2	Increases my firm's competitive advantage
RA3	Maintains the purity of my products

Mean score analysis was employed to evaluate the perception of halal logistics' relative advantage among halal firms. This analytical approach aligns with several prior studies (Ghazi & Yasak, 2025; Khusnin & Masud, 2025; Subramaniam et al., 2025). Following the recommendation of Ghazali (2025), the mean values are interpreted across seven levels, ranging from "strongly disagree" to "strongly agree." Table 3 details the interpretation of these mean scores.

Table 3: Means Score Interpretation

Mean Score	Mean Interpretation
1.00 – 1.49	Strongly Disagree
1.50 – 2.49	Disagree
2.50 – 3.49	Moderately Disagree
3.50 – 4.49	Neutral
4.50 – 5.49	Moderately Agree
5.50 – 6.49	Agree
6.50 – 7.00	Strongly Agree

3.0 Result and Discussion

The reliability of the measurement items was assessed using Cronbach's Alpha, as recommended by Hair et al. (2013). This test evaluates internal consistency reliability to ensure that all measurement items consistently assess the same underlying concept. According to established literature, a Cronbach's Alpha coefficient exceeding 0.7 indicates acceptable reliability (Abu Bakar et al., 2021; Lee, 2008; Lin et al., 2017). Table 4 presents the results of this reliability analysis and presents the Cronbach's Alpha value for the study. The analysis yielded a value of 0.934, which significantly exceeds the accepted threshold of 0.7. This confirms that the internal consistency reliability of the measurement items is satisfactory. Consequently, the three items are deemed valid for measuring the construct of relative advantage in halal logistics.

Table 4: The Cronbach Alpha Value

No of Items	Cronbach Alpha
3	0.934

Table 5 presents the mean scores and interpretation for the relative advantage construct. The results indicate a positive perception among halal food firms across all three dimensions, with mean scores consistently exceeding 5.70, which corresponds to an interpretation of "Agree."

The results indicate that Malaysian halal food firms believe halal logistics contributes to improved profits (Mean = 5.739). By extending halal practices into logistics operations—specifically transportation and storage—firms can safeguard the integrity of raw materials and finished goods throughout the supply chain. This rigorous adherence to halal standards enhances trust among both industrial customers and retail consumers. Increased trust leads to a higher volume of orders, thereby generating greater profit margins for the business.

The highest mean score was observed for the belief that halal logistics strengthens competitive advantage (Mean = 5.774). Halal logistics serves as a strategic differentiation tool, allowing firms to distinguish themselves from rivals relying on conventional logistics. Industry customers and consumers are increasingly motivated to choose firms that guarantee halal integrity via dedicated logistics, giving these firms a distinct market edge.

Table 5 The Result of Mean Interpretation

Construct	Item Measurement	Mean	Mean Interpretation
RA1	Increases my firm’s profit	5.739	Agree
RA2	Increases my firm’s competitive advantage	5.774	Agree
RA3	Maintains the purity of my products	5.733	Agree

The findings regarding relative advantage indicate a consistently positive perception among halal food firms across all measured dimensions. Primarily, respondents acknowledge that adopting halal logistics contributes significantly to improved profitability. By extending halal compliance into logistics operations, firms can guarantee product integrity throughout the supply chain, thereby fostering greater stakeholder trust. This assurance is critical for two distinct industry segments: upstream suppliers, who utilize compliant transportation and storage to safeguard raw materials for industrial clients; and downstream manufacturers, who rely on these practices to ensure the integrity of finished goods during distribution to the retail market. There is a positive correlation between market trust and firm profitability. By securing the confidence of industrial partners and consumers, halal food firms can capture a larger share of buying orders. This

surge in transaction volume allows firms to capitalize on economies of scale, thereby enhancing their bottom line

The second dimension of relative advantage highlights the belief that halal logistics significantly strengthens a firm's competitive position. By ensuring product integrity throughout the supply chain, halal logistics serves as a potent differentiation tool, distinguishing a firm from rivals that rely on conventional logistics. Consequently, industrial clients and retail consumers are more inclined to select firms that adopt these specialized practices. This preference is driven by the stakeholders' desire to secure the specific benefits and assurances provided by a fully compliant halal supply chain

The third dimension of relative advantage pertains to the capability of halal logistics to preserve product purity. In the context of Islamic law, the definition of a halal product extends beyond mere permissibility; it requires that the item be fundamentally pure and wholesome, as encapsulated by the concept of Halalan Toyyiban. Consequently, products must remain free from any physical or ritual contamination throughout all supply chain activities, including logistics. This assurance is particularly critical for industrial customers, who require completely uncontaminated raw materials to ensure their final products meet strict hygiene and religious standards. By preventing cross-contamination during transit, halal logistics ensures that the final output remains compliant with the holistic concept of Toyyiban which refers to safety, cleanliness, and purity.

4.0 Conclusion

In conclusion, this research successfully identifies three distinct relative advantages of halal logistics from the perspective of halal food firms: (1) profit maximization, (2) enhanced competitive advantage, and (3) the preservation of product purity. These advantages are pivotal to the commercial success of halal food products within the global market. Beyond their operational value, these benefits act as critical motivating factors that drive the intention to adopt halal logistics practices. Given that commercial viability is a prerequisite for adopting new industrial practices, these identified advantages provide the necessary strategic justification for halal food firms to integrate halal logistics into their supply chain operations.

This research offers significant implications for key stakeholders in the halal ecosystem, specifically halal food firms, halal logistics providers, and government agencies such as the Department of Islamic Development Malaysia (JAKIM) and the Halal Development Corporation (HDC). The halal food firms management teams can leverage these findings to validate the benefits of integrating halal logistics into their supply chains. Understanding these relative advantages assists firms in making informed, strategic decisions regarding their halal management practices.

The halal logistics providers can utilize these insights to formulate more effective marketing strategies. Promotional activities should specifically emphasize the three identified relative advantages—profitability, competitive edge, and product purity. Highlighting these benefits is crucial for educating

potential clients on the value proposition of halal logistics services. Meanwhile, the government agencies and policy makers, particularly JAKIM, can utilize this research to strengthen and refine policies regarding halal logistics implementation. Simultaneously, the HDC can use these findings to intensify advocacy efforts and promote the adoption of halal logistics across the industry.

Future research should expand the scope of this study to encompass other sectors within the halal industry, such as halal cosmetics and pharmaceuticals. A comparative analysis would be particularly valuable to determine if firms in these sectors share similar perceptions regarding halal logistics as observed in the halal food industry. Investigating these industries would provide a more comprehensive understanding of halal logistics adoption across the broader halal ecosystem

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Author Contributions

Y.S.M Yunan: Conceptualisation, Methodology, Data Collection, Writing - Original Draft Preparation; **M.H Ali:** Writing Proofreading; **N Rezali:** Writing-Reviewing and Editing; **M.H.A Azmi:** Collaborator.

Conflicts Of Interest

The manuscript has not been published elsewhere and is not under consideration by other journals. All authors have approved the review, agree with its Submission and declare no conflict of interest in the manuscript.

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