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Understanding the Adoption of Halal Logistics through Critical Success Factors and Stakeholder Objectives

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Abstract: Catering to Halal in the industry requires the explicit adoption of Halal Logistics (HL) to avoid the risk of cross-contamination and ensure that Halal products are safe, hygienic, nutritious, pure, unadulterated, and consistent with their labelling. We identify the need for meaningful research constructs relating to the appropriate adoption of Halal logistics through an extensive literature review. This paper identifies Critical Success Factors (CSF) and develops corresponding constructs that are fundamental for understanding the adoption of Halal logistics. This research also identifies the stakeholders involved and their objectives to facilitate the system design. As a starting point, from the existing literature, we adopt a structural model of CSFs to implement Halal Logistics. After that, this paper identifies and validates these CSFs with the support of extensive literature-based reviews, senior managers of Halal exporting organisations, Halal accrediting bodies, and professionals working in logistics and the cold chain. The research findings indicate that logistics service providers need to successfully upgrade their facilities to adopt Halal practices in their operations. Moreover, the role of governments is to reduce bureaucratic complexity so as to improve the ease with which businesses can implement HL. It becomes clear, from the analysis, that logistics service providers have the most prominent role in the effective adoption of the Halal supply chain. Consumers have a more prominent role than government support in the growing market of Halal products. This paper contributes to the identification of stakeholders' objectives, which will facilitate the efficient adoption of Halal logistics and provide a direction for undertaking associated future work.

Keywords: Halal; Halal Logistics (HL); logistics; research constructs; Toiyyib; stockholder's objectives

1. Introduction

With the advent of the knowledge economy supporting product diversity and the successive empowerment of customers, the concept of Halal is gaining significant attention. The reason for this attention is that a large section of society considers Halal products to be of a high quality, safer, and free from banned items, intoxicants, wastes, and non-ethical practices [1]. Naturally, it is a matter of faith for a large number of consumers, specifically Muslims. The literature associates Halal with food consumption, but in practice, Halal incorporates more significant aspects relating to lifestyle, including speech, social interaction, behaviour, attire, and manners [2,3].

In the current business domain, and for this research, the idea of Halal involves an overall network of the supply chain, which includes traded products, such as consumer packaged goods (CPG). The vulnerability of Halal products and services and the stringent requirements of the associated certification complicates the management of the supply

chain of Halal products. A dedicated Halal logistic system is required to extend logistical operations whose primary aim is to avoid possible risks of cross-contamination. It should also address the requirements for safe, hygienic, natural, nutritious, pure, and unadulterated products [4].

1.1. Brief Overview of Logistics Catering to Halal Goods

Internationally, Halal is flourishing as an industry. It is turning out to be one of the criteria for defining quality and a lifestyle preference [5,6]. Many do not see Halal as just an Islamic standard ("*Shariah*" and "*Toiyyab*") for directing the eating habits of Muslims, but also as a healthy choice. This paper identifies the primary objectives of the Halal Supply Chain (HSC) as:

- To safeguard the integrity of products throughout the network [7,8];
- To manage the lack of uniform standards, which also results in an ineffective control of the regulation of Halal food through norms [9];
- To avoid any distrust [10,11];
- To manage the sensitivity of dedicated consumers regarding Halal products [12].

Customer, logisticians, and allied industries are concerned about a few unethical business practices that bring down the quality of services provided by Logistics Service Providers (L.S.P.s) of Halal products. The susceptibility of HSC [13] and strict Halal requirements through regulations have forced concerned market players to shift towards dedicated logistics. Othman et al. [14] indicate a strong need for the certification of logistics activities, as per the requirements and standards of the associated Halal products. Dedicated consumers of Halal understand this to be an imminent threat to the Halal-ness of the products they consume.

Despite the extensive marketing of Halal and the significance of the activities of HL in protecting the Halal-ness of food products, the existing evidence reveals that HL does not pervade all Halal food companies. Rather, it highlights the concepts of Halal driving the purchasing behaviour of Muslim consumers. However, Verbeke et al. [15] claim that dedicated consumers of Halal products are still not fully aware of the intricacies in the supply chain of Halal products, and there are a few mechanisms in practice to assure that cross-contamination does not take place during the movement, storage, or handling of Halal products.

1.2. Needs for the Study

HL is a relatively new academic discipline and caters to customers' emerging demand for Halal products. Some research in this field reports the significant factors relating to the effective adoption of HL [7,16]. Moreover, earlier studies do not discuss stakeholders' perspectives as success factors in HL. These studies assert a need for establishing research constructs that include these success factors to help future researchers examine this critical area.

1.3. Objectives of the Research Article

We have identified the primary aims of this paper as follows:

- To select the CSFs for the adoption of HL through a review of the literature and established models;
- To develop research constructs relating to CSF/CSFs clusters with the help of the available literature and brainstorming sessions with associated experts;
- To identify stakeholders and respective objectives concerning the adoption of the CSFs;
- To recommend future research and policymaking relating to the emerging area of HL.

2. Research Method and Background Model

We have conducted an extensive literature review on relevant research articles selected from the Scopus database and secondary references that deal with model/barriers/enablers

in the adoption of HL. Discussions on the background of the research status in this area are presented in the forthcoming paragraphs. The research methods adopted are exploratory, and we have tried to explore the issues associated with HL adoption. As a starting point, we have adopted a structural model of CSFs in adopting Halal, which is shown in Figure 1. Interdisciplinary experts from areas, such as supply chain professionals, logistics specialists with more than 10 years of experience in dealing with Halal product, academicians with expertise in logistics and supply chain management, were chosen for focus group discussions on finalising the construct indicators. The background of the research status in this area is presented in the forthcoming paragraphs. Talib et al. [17] presented a conceptual model of the barriers to HL operations. He argued that the resistance to adoption, transition complications, absence of HL champions, and scarcity of Halal experts are significant influencing factors relating to the barriers to HL. Zailani et al. [18] investigated Malaysia's logistics companies' challenges and opportunities to adopt HL. The findings of Zailani et al. [18] suggest that there is a lack of collaboration among LSPs, HDC, and JAKIM. They further evaluated the inter-relationship among barriers that are detrimental for adopting Halal certification and suggested that the effective adoption of Halal certification can achieve a higher level of customer satisfaction through assessment and accreditation. Using integrated interpretive modelling, Khan et al. [19] evaluated initiatives that facilitate the harmonisation of Halal standards by considering the cost of accomplishment and associated benefits. Ngah et al. [20] found that the complexity, awareness, and commitment of the top management are the determining factors in adopting Halal warehousing services among Malaysian Halal manufacturers. Tieman [21], based on an extensive discussion group, defined the scope of HL and its principle.
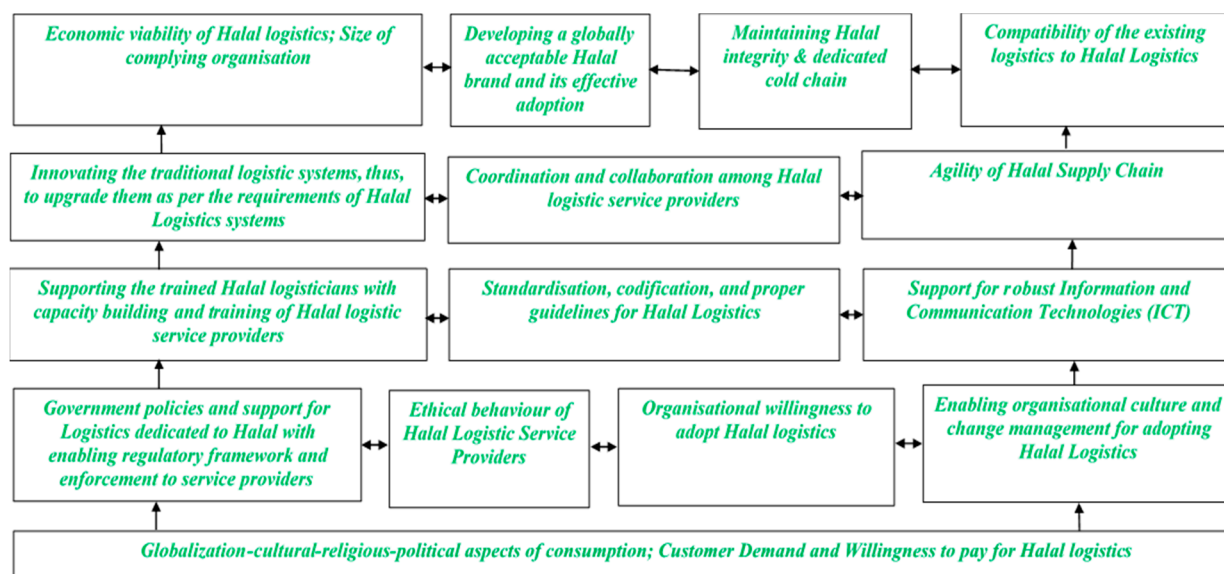

Figure 1. Critical Success Factors in adopting Halal Logistics (Adopted from Haleem and Khan [7]).

Talib and Hamid [22] performed a SWOT analysis of Halal logistics in Malaysia. They found that strong government support is the significant strength of Malaysian Halal LSPs.

Mahbubi and Uchiyama [23] evaluated the Indonesian Halal beef supply chain's economic, environmental, and social impact. They established collaborative innovation between cattle farmers and actors along the Indonesian halal beef supply chain to improve sustainability. Khan et al. [24] analysed 42 risk elements of the Halal supply chain using fuzzy BWM and suggested that the production-related risks are highly significant and need to be addressed with priority. Mostafa [25], through a comprehensive review, analysed the intellectual structure of Halal food research using burst detection techniques. They explored Halal food research fronts and different schools of thought. Secinaro and Calandra [26] reviewed and critiqued the Halal food literature and classified this research

stream into five research clusters. Karia [27], using quantitative techniques, established that HL integration positively affects Halal logistics performance. Noorliza [28], with empirical evidence, suggested that the resource-capability of HL services can make Halal LSPs more competitive.

Figure 1 shows the structural model [7], and this is used in this study as a background for the adoption of HL. This model is consistent with the findings of [17,18,20–22,29]. The model establishes the factors that are critical to the success of the adoption of HL. The benefit of the adopted model is that it has incorporated central aspects of HL adoption, including the cultural-religious-political aspects of consumption. These benefits constitute the primary driver in maintaining Halal integrity in the eyes of consumers, which is the goal of HL adoption. Additionally, this model also addresses the ethical aspects of the Halal business, which is an emerging research area.

Halal exporting companies, Halal accrediting, and professionals of logistics and cold chain companies, along with the researchers, have established and, subsequently, formalised the constructs. The following section and sub-sections summarise these factors, along with the references and process followed in the literature review and experts' opinions.

2.1. Major Critical Success Factors of CSFs/CSFs Clusters in Adopting Halal Logistics

Haleem and Khan [7] (2017) identified 15 CSFs/CSFs clusters in the effective adoption of HL, and these factors are explained in the following sub-sections.

2.1.1. Economic Viability of Halal Logistics and the Size of Complying Organisations

LSPs regularly raise the issue of how much investment in Halal products is sufficient to fulfil an organisation's primary function of generating value for the customer [30]. We have not been able to identify research/literature that resolves the managerial uncertainties by empirically relating the effects of investment on HL with a firm's financial performance. If Halal is not economically or commercially viable, an organisation may not invest in developing the necessary logistics facilities. Secondly, product costing depends upon the economy of scale. Halal products increase the scope, i.e., variation in the product range. Thus, we have merged two factors into one, because the focus of both factors is the same, i.e., economic viability. The economy of scale and economy of scope are critical for sustainable Halal Logistics.

2.1.2. Organisational Willingness to Adopt Halal Logistics

In adopting and embracing innovation, organisational willingness plays an important role [31]. Organisational support is required to adopt the HL system and provide proper preparation for the whole system to face failure, problems, and risks. To gain support from the lower level of management (Halal), the high-level management needs to explain and introduce a comprehensive training program, so that all the levels of management can understand their role in performing HL. Support from the top management is necessary to convey the ideas relating to the adoption of the Halal Logistics operation and related activities.

2.1.3. Maintaining Halal Integrity (HI) with the Assistance of the Requisite Cold Chain

The cold chain for Halal needs to conform to the certification guidelines. Different products, such as food, vegetables, meat, pharmaceuticals, cosmetics, raw materials, and many natural products, require a different cold chain type. Simultaneously, one should observe that the cold chain, associated supply chain, and LSPs help to maintain products' Halal integrity [32]. There should be a significant level of segregation between Halal and non-Halal products to avoid any intermixing and maintain the Halal integrity in the eyes of the consumer. 'Vegetarian Halal' and 'non-vegetarian Halal' both need to be 'Toiyyab'. There should be a clear segregation among Veg Halal and 'Non-Veg Halal'. If Halal (vegetarian) and Halal (non-vegetarian) move in the same carrier, logisticians must ensure no intermixing. Any mixing of non-vegetarian items with vegetarian items will

make vegetarian items non-Halal. Thus, potato chips cooked in Halal animal oil cannot be called 'Vegetarian Halal'. These chips can only be called "non-vegetarian Halal" if the animal oil is Halal. Similarly, one cannot label any natural/herbal medicine containing alcohol, any banned additives, any wastes, or intoxicants as veg Halal or non-veg Halal.

2.1.4. Enabling the Organisational Culture and Change Management for Adopting Halal Logistics

Logistics companies are looking to adopt new concepts to compete in the market. For example, the integration of Halal in logistics operations is considered a new and innovative approach. For food- and dairy-based LSPs, this has been proven [33]. Thus, concerned logistics players should be prepared to incorporate changes in their operations and processes due to the rising demand for Halal products worldwide. The clear-cut primary objective of HL is the compliance of the HI of the product during logistics operations. These improvements ensure that the end customer consumes a safer and healthier product. Organisations need to invest in improving change management capabilities to deal with the emerging requirements of HL. An enabling culture and change management capabilities aid organisations in the effective implementation of HL.

2.1.5. Government Policies and Support for Logistics Dedicated to Halal with an Enabling Regulatory Framework and Enforcement of Service Providers

As the Halal market is growing, with billions of customers, and providing a lot of revenue and job opportunities, responsible governments need to support Halal to achieve economic growth. Governments must help to promote the Halal industry by, for example, developing a Halal assurance system, funding the universities and research institutes to carry out R&D in Halal-related studies, providing facilities for Halal businesses, and organising training for industry practitioners to develop Halal professionals/auditors.

Apart from that, Goh and Pinaikul [34] mentioned that government involvement in HL, by developing dedicated infrastructure for Halal to avoid cross contaminations, would increase the Halal industry's growth. Besides that, governments could also encourage new businesses to adopt HL to make them economically stable. Thus, we have combined these three factors, assuming that the regulatory framework from the policymakers and compliances of these regulations are necessary to the concept of Halal. For a global brand of Halal, complete compliance is required.

Haleem and Khan [7] support government protection for consumers from unsafe food by legislating guidelines or laws. Tan et al. [35] explained that government assistance, such as tax exemptions, creates domino effects, encouraging more LSPs to invest in HL and supply chains. The regulatory climate can sometimes be region-specific; thus, it is the duty of regulating bodies to ensure that the policies and rules regarding Halal issues are stable and long-term [17].

Sometimes, the new regulatory compliances of the Halal LSPs are seen to be inadequate. This may be due to the lack of government interest in Halal, Halal professionals' paucity, corruption, weak political support, delays in decision-making, and the expensive legal process. Illegal operations of Halal LSPs occur due to a lack of ethics and monitoring [30]. Governments should provide clear, well-defined, and applicable rules and regulations so that they can be effectively enforced.

2.1.6. Supporting the Trained Halal Logisticians with Capacity Building and Training of Halal Logistics Service Providers

For the successful implementation of Halal practices, such as the proper segregation of Halal and non-Halal products or development of Halal process plans, the employees of the organisations need to be acutely aware of the concept of Halal. Several studies reveal that a poorly educated and unskilled workforce hinders in ensuring Halal products' integrity at the end of the supply chain. Thus, to compete in and maintain the global Halal market, there is a need to educate and train the workforce in Halal LSPs. In addition to financial resources, one also requires human resources to successfully adopt Halal practices in

logistics operations that are occasionally available in the Halal industry. With the transport sector's continued growth, the human resources within the logistics industry need tailor-made and affordable training programs to increase competitiveness. The organisations need to explore different types of training programs for their employees, through which they can support their future strategies and help improve the productivity and performance of their employees by ensuring that they develop the required skills. Successful training programs possibly increase employees' morale, motivation, and satisfaction level, thereby improving their efficiency, competitiveness, and product consistency, reducing employee turnover, and increasing innovation in strategies and products related to HSC.

2.1.7. Innovating the Traditional Logistic Systems to Upgrade Them According to the Requirements of Halal Logistics Systems

Halal opens new frontiers in products and process innovations in the supply chain, packaging, IS integration, logistics management, and the cold chain.

Earlier, Halal principles were perceived as religious, involving rituals and beliefs. Today, Halal seems to address contemporary global issues, such as environmental pollution, sustainability, waste management, ethics, animal welfare, and food safety, encompassing the processing, handling, shipment, and distribution of manufactured goods [36] (Badruldin et al., 2012). Halal has emerged as a new CPG segment towards economic and adequate HL implementation, and organisations are making innovations in the existing processes/services and associated support systems. Thus, HL has provided a new area for research, development, patents, and commercialisation, which has emerged in the publications. Innovation can also help in upgrading the existing logistics in HL.

2.1.8. Support for Robust Information and Communication Technologies (ICT)

Robust ICT substantially affects logistics and SCM. One of SCM's essential features is taking advantage of and controlling ICTs [37,38]. According to Hammant [39], a robust ICT is crucial in the Halal supply chain, as it improves its performance and efficiency and provides a better integration among LSPs.

Thus, to develop a sound HL chain, sufficient investment in developing robust ICTs is required. Moreover, integrating robust ICTs with HL improves productivity and effectiveness and enhances traceability by providing accurate information about utilising resources [40].

In the Halal Logistics chain, robust ICTs will develop efficient Halal traceability systems. The use of ICT can increase transparency and customer trust. It can be used to trace potentially non-Halal ingredients and validate that product are indeed Halal. The amount of consumer confidence in the Halal industry is generally linked to the amount of information that the consumer may obtain at the time of purchase [41].

2.1.9. Standardisation, Codification, and Proper Guidelines for Halal Logistics

HL needs to have well-documented guidelines for different types of products. As required in ordinary SC, which is similar and compatible, Halal standardisation and codification need to be undertaken and requires extensive R&D and corporate support. Primary determinants of HSC governance patterns are the complexity of transactions, the ability to codify information, and suppliers' capabilities.

Codification aids in the inefficient exchange of complex information, with little explicit coordination. With the support of codification and standardisation, one can bring down the degree of complexity. Standardisation further assists in developing relations between Halal logisticians. Standardisation, codification, and proper associated guidelines for HL are collaborative and negate supply-side initiatives and influence the differences between Halal practices.

However, the lack of a universal Halal regulating authority and proper codification of Halal processes has left the Halal market vulnerable to fraud and corruption. Uniform and universal Halal standards seem necessary for countering unethical practices and moving the market forward [30].

2.1.10. Coordination and Collaboration among Halal Logistic Service Providers

Various stakeholders in providing HL may have their preferences, interests, directives, capacities, scope, and logistics expertise. Coordination and collaboration among these Halal LSPs may guaranty HL throughout SC and meet dedicated consumers' demand. In recent years, the frequency and severity of flood disasters have increased, which have been mitigated by collaboration and risk-sharing [42]. Organisations must learn from the best practices of the existing SC logistics providers. Thus, adequate coordination among various actors involved with Halal LSPs is essential for improving the overall effectiveness of Halal LSPs.

2.1.11. Agility of the Halal Supply Chain

Agility is a crucial attribute of SC. It is also linked to the manufacturing sector. Van Hoek [43] defined agility as "all about customer responsiveness and mastering market turbulence".

Because of the market's diversity, customised products, speed of delivery, and flexibility, risk arises in the market. Thus, one can employ agility as a suitable strategy for managing risk in HSC. It seems that HSC has many resemblances to ordinary supply chains, but there are apparent differences regarding the nature of their compliances and the objectives of both the chains. HSC should dedicate resources to customer preferences and compliance with the norms to maintain the same agility level.

2.1.12. Compatibility of the Existing Logistics with Halal Logistics

Contemporary SC and LSPs have developed extensive expertise and know-how in dealing with different products and services. They have also moved toward a dedicated cold chain. These LSPs can also provide Halal products and services by making their logistics compatible, or consistent with the HL, which is important for understanding and identifying how the existing LSPs are compatible with Halal Logistics.

2.1.13. Ethical Behaviour of Halal Logistics Service Providers

In HL, each stakeholder should be ethical, and their aim should not be to earn profit at the cost of delivering non-Halal products. Respect for customer preference is a must. The Halal industry will survive only when Halal business activities are ethical, and the industry recognises strict compliance with regulations and processes. Stakeholders should come forward voluntarily to create a global quality framework. In a broader sense, Halal means ethical, and the concerned organisations must ethically maintain compliance.

2.1.14. Developing a Globally Acceptable Halal Brand and Its Effective Adoption

The available literature on Halal branding did not ask whether Halal, as a brand, could positively affect customers' attitudes [12,44,45]. The adoption of Halal practices may provide a trusting relationship between the organisations and stakeholders, who will show their commitment to increased investments at various levels [46].

2.1.15. Globalisation; Cultural-Religious-Political Aspects of Consumption; Customer Demand; Customer Willingness to Pay for Halal Logistics

There is a significant relationship between the Halal concern of informed consumers and their commitment to pay for HL, as determined by a study conducted by Adams [47]. The article shows that the Halal market's growth will be sustainable as long as consumers are concerned about Halal issues. Additionally, Alam and Sayuti [48] found that Halal concern directly affects consumers' behaviour by increasing efforts to achieve Islamic principles. Therefore, governments need to augment users' knowledge of Halal from others. Halal products' global demand forces the logistics service providers to integrate Halal Logistics in order to be competitive.

3. Results and Discussions

3.1. Establishment of Research Constructs with Supporting References

The identified CSFs have provided us with significant factors associated with the adoption of HL, providing building blocks for future research. Thus, we have postulated the research constructs from these CSFs in Table 1. The references of these research constructs and the corresponding CSFs are also given to help researchers develop indicators and questionnaires therefrom and conduct empirical case- or simulation-based research.

Table 1. Research constructs established from major Critical Success Factors.

CSF No	Major Critical Success Factors (CSFs)	Research Constructs	References
CSF-01	Economic viability of Halal Logistics and the size of a complying organisation	i. The economy of scale and scope is important for a sustainable HL	[6,49]
CSF-02	Organisational willingness to adopt Halal Logistics	ii. Support from the top management is essential for conveying the ideas relating to the implementation of HL operation and related activities	[16,35,50]
CSF-03	Maintaining Halal Integrity (HI) with the assistance of the requisite cold chain	iii. There should be a significant level of segregation between Halal and non-Halal products to avoid any intermixingiv. Vegetarian Halal and non-vegetarian Halal both need to be 'Toiyyab' v. There should be a clear separation among Vegetarian Halal and Non-Vegetarian Halal items	[28,51–53]
CSF-04	Enabling organisational culture and change management for adopting Halal Logistics	vi. Organisations need to develop the necessary capability to deal with the emerging challenges of HL vii. Organisations need to invest in change management viii. An enabling organisational culture and change management capability helps the organisations to implement HL	[54–56]
CSF-05	Government policies and support for Logistics dedicated to Halal with an enabling regulatory framework and enforcement of service providers	ix. Governments must provide support for the promotion of the Halal industry by, e.g., developing a Halal assurance system, funding the universities and research institutes to carry out R&D in Halal-related studies, providing facilities for Halal businesses, and organising training for industry practitioners to develop Halal professionals/auditors x. Complete compliances need to support Halal branding (globally) xi. Governments should provide clear, well-defined, and applicable rules and regulations, so the enforcement of regulations becomes effective	[6,30,57]
CSF-06	Supporting trained Halal logisticians with capacity building and the training of Halal logistics service providers	xii. To compete in and maintain the global Halal market, there is a need to educate and train human resources for Halal LSPs xiii. A successful training program possibly results in an improved morale, motivation, and satisfaction level in employees, a better efficiency, competitiveness, and product consistency, a reduction in employee turnover, and an increased innovation in strategies and products related to HSC	[17,51,58]

Table 1. *Cont.*

CSF No	Major Critical Success Factors (CSFs)	Research Constructs	References
CSF-07	Innovating the traditional logistic systems to upgrade them, according to the requirements of Halal Logistics systems	xiv. Organisations should make innovations in the existing services, processes, and support systems to achieve HL economically and effectively xv. HL provides us with a new research area, development, patents, and commercialisation, which has emerged in the publications xvi. Innovation can also help in upgrading the existing logistics to HL	[59–61]
CSF-08	Support for robust Information and Communication Technologies (ICT)	xvii. In the HL chain, robust ICTs will develop efficient Halal traceability systems xviii. The use of ICT can increase transparency and customer trust xix. ICT can be used to trace potentially non-Halal ingredients and validate that products are indeed Halal	[61–64]
CSF-09	Standardisation, codification, and proper guidelines for Halal Logistics	xx. Through proper codification and standardisation, the degree of complexity of HSC can be mitigated xxi. Standardisation further assists in developing the relations between Halal logisticians xxii. Standardisation, codification, and proper associated guidelines for HL are collaborative and negate the role of supply-side initiatives and influence of the differences in Halal practices	[11,17,65]
CSF-10	Coordination and collaboration among Halal logistic service providers	xxiii. Adequate coordination among various actors of Halal LSPs is important for improving the effectiveness of Halal LSPs	[27,52,64]
CSF-11	Agility of the Halal Supply Chain	xxiv. To maintain the same level of agility, HSC should dedicate resources, as the focus is on customer preference and compliance	[66–68]
CSF-12	Compatibility of the existing logistics with Halal Logistics	xxv. It is important to understand and identify how the existing LSPs are compatible with HL	[20,35]
CSF-13	Ethical behaviour of Halal logistics service providers	xxvi. Halal means ethical, and the concerned organisations must ethically maintain compliance	[69–71]
CSF-14	Developing a globally acceptable Halal brand and its effective adoption	xxvii. Halal is a brand that could positively affect customers' attitudes xxviii. The adoption of Halal practices may provide a trusting relationship between organisations and stakeholders	[12,55,72]
CSF-15	Globalisation; cultural-religious-political aspects of consumption; customer demand; customer willingness to pay for Halal Logistics	xxix. The global demand for Halal products forces the LSPs to integrate HL in their operation in order to be competitive	[19,73–75]

3.2. Stakeholders' Role in the Effective Adoption of Halal Logistics

Stakeholders play a vital role in the adoption of Halal logistics. This section classifies the stakeholders according to their role in four major groups. We discuss all of them one-by-one below.

3.2.1. Governments

Governments can play an essential role in the adoption of a new concept. In the case of HL adoption or upgrades, the role of governing bodies is very crucial. A government's role is to reduce bureaucratic complexity to ease with which businesses' can provide safe,

secure, and unadulterated consumables to its citizens. The role of the government also includes creating awareness in the masses of the consumption of safe foods.

3.2.2. Consumer Focus Groups (CFGs)/Consumers

If consumers have sufficient knowledge, they will demand Halal products and services with less criticism, and this may help the businesses to adopt HL. The role of consumer focus groups is to safeguard consumers from any malpractices and assist enforcement authorities and policymakers.

3.2.3. Halal Certifying Organisations (HCOs)

The responsibility of HCOs is to check for compliance with the Halal principles. HCOs are also responsible for issuing the Halal logo/certificate. Globally, HCOs help promote Halal certification with all the partners of the Halal supply chain, LSPs, traders, and retailers.

3.2.4. Organisations/Logistics Service Providers (LSP)

LSPs, being essential partners in the supply chain, are responsible for warehousing, transportation, value-added logistics services, and allied services. Providing or upgrading facilities is the major role that they play in adopting HL. In the early stages, they need to train capacity building and time allocation. Additionally, they need to develop a mechanism that can help in auditing.

3.3. CSFs with Major Objectives and Concerned Stakeholders

Table 2 shows different CSFs, with the corresponding stakeholders. This table also depicts the relevance of these objectives in the effective adoption of HL. We had extensive interactions with experts and researchers. The paper determined the concerned stakeholders and their corresponding objectives through an extensive literature review and from expert opinions.

Table 2. Critical Success Factors and concerned stakeholders, with related objectives.

CSF No.	Major Critical Success Factors (CSFs)	Stakeholders	Objectives
CSF-01	Economic viability of Halal Logistics and the size of complying organisations	Organisation/LSPs Consumer Government	• Economy of scale • Improved organisational competitiveness in providing Halal products/services • Satisfaction-based demand • Support for organisations/NGOs/HCOs/Consumer focus groups
CSF-02	Organisational willingness to adopt Halal Logistics	LSPs	• Positive leadership towards Halal • Working for ICT implementation • Codification and standardisation
CSF-03	Maintaining Halal Integrity (HI) with the assistance of the requisite cold chain	LSPs	• Implementing a process-based approach and ensuring compliance • Codification of all ingredients and information-sharing
CSF-04	Enabling an organisational culture and change management for adopting Halal Logistics	LSPs	• Positive leadership style/support • Change Management Program • Development of a program for ICT implementation

Table 2. *Cont.*

CSF No.	Major Critical Success Factors (CSFs)	Stakeholders	Objectives
CSF-05	Government policies and support for Logistics dedicated to Halal, with an enabling regulatory framework and enforcement of service providers	Government Consumer Focus Groups LSPs HCOs	• Positive government Support • Enabling a policy framework for HL adoption • Strict compliance through dedicated bodies • Awakened and empowered CFGs • Involvement in policymaking • Involvement of LSPs in policymaking • Involvement of HCOs in policymaking
CSF-06	Supporting the trained Halal logisticians with the capacity building and training of Halal logistics service providers	LSPs HCOs	• Capacity building of existing staff • Improved norms for recruitment • Course content development and comprehensive training program
CSF-07	Innovating the traditional logistic systems to upgrade them, according to the requirements of Halal Logistics systems	LSPs HCOs	• They will innovate to become process-oriented • They will assist in developing standards for logistics systems
CSF-08	Support for robust Information and Communication Technologies (ICT)	LSPs HCOs CFGs	• Investment in and promotion of ICT • Development of a framework for enabling ICTs • Checking of the source of ingredients before purchasing
CSF-09	Standardisation, codification, and proper guidelines for Halal Logistics	Government HCOs LSPs	• Regulating the LSPs to follow standards • Development of standards and codification of ingredient and guidelines for processes • Implementation of proper guidelines
CSF-10	Coordination and collaboration among Halal logistics service providers	LSPs Government	• Mitigation of risk by proper coordination and collaboration • Approving the coordination and collaboration
CSF-11	Agility of the Halal Supply Chain	LSPs	• Investment in improving agility
CSF-12	Compatibility of the existing logistics with Halal Logistics	LSPs HCOs	• Proper designing of the layout to accommodate Halal • Provision of consultation for setting up Halal facilities
CSF-13	Ethical behaviour of Halal logistics service providers	HCOs LSPs Consumer Focus Groups	• Proper checking of processes/ingredients before giving the Halal certificate • Ethical practices in business operations • Encouraging ethical behaviour
CSF-14	Developing a globally acceptable Halal brand and its effective adoption	Consumer Focus Group LSPs HCOs	• Promotion of and building up awareness • Ethical marketing of Halal • Ethical marketing of Halal
CSF-15	Globalisation; cultural-religious-political aspects of consumption; customer demand; customer willingness to pay for Halal Logistics	Consumer Focus Groups HCOs Consumers LSPs	• Paying a premium for Halal labelled services • Development of proper standards to channel the surge in demand • Demand for a higher level of certification that meets global needs • Adoption of Halal in existing operations to cater to the demand

Table 2 also indicates the prominent role of each stakeholder in every critical success factor. A panel of experts has been used to identify prominent stakeholders for every CSF. Figure 2 shows the relative importance of the four identified stakeholders in the study through a simple web diagram. Here, the magnitude of the importance of various stakeholders in managing HL is calculated and plotted. This shows that LSPs are the most significant stakeholder, as they provide resources to HL businesses, whereas governments are the least significant. This finding is crucial, as we see that it is the service providers that are instrumental in promoting Halal and, accordingly, making profits from this business. We also observe that some countries are doing a large amount of business in Halal products, although their governments are not supporting this. The role of HCOs is the second most prominent. Consumers are becoming more conscious, and it is they who are pulling the Halal supply chain and its associated markets. At the same time, the role of governments is to facilitate business, possibly for their citizens or their country's economic growth.
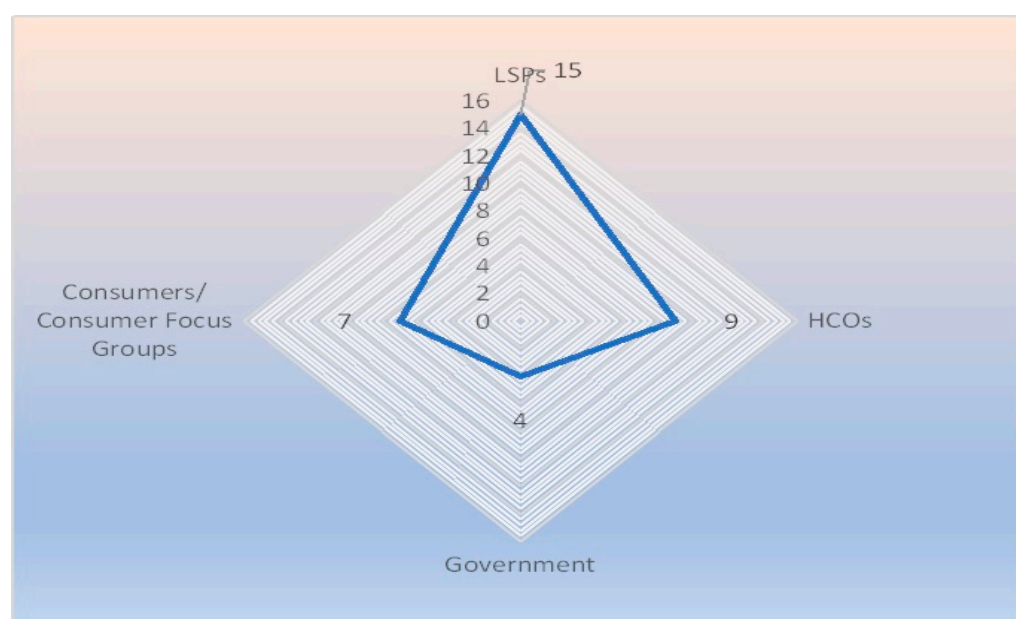

Figure 2. Web diagram showing the relative significance of the four stakeholders.

4. Major Contributions of the Article and Directions for Future Research

The adoption of HL is a socio-technical issue and requires a multidisciplinary approach for its effective implementation. This research makes the following contributions to the knowledge in this area:

- *Twenty-nine* research constructs (refer to Table 1) from 15 CSFs/CSFs clusters are established with the help of the available literature and brainstorming sessions with senior managers and domain experts;
- The stakeholders and their respective objectives regarding CSFs in adopting HL are identified, as shown in Table 2;
- A clear-cut research-based direction is recommended for the effective adoption of HL in the industry.

Based on the identified constructs, one can make a valid questionnaire and conduct extensive empirical research. Case studies could further validate these constructs. Simulation-based studies could also be performed using these CSF's and constructs. Empirical research based on these constructs/CSF will ultimately strengthen the business model of Halal in the globalised economy. These constructs can help future researchers/industry professionals in understanding HL and its successful adoption.

5. Conclusions

Halal seems to be a good and upcoming business model, but the research on the adoption of HL is in its infancy, and more work is needed to make this adoption efficient and credible in the eyes of customers. Further, we feel there is a need for more Halal Logistics-based research in multicultural countries, countries where Muslims are not in the majority, and countries exporting Halal products. This study attempts to explain the critical factors relating to the adoption of HL and has taken a broad perspective, with the involvement of many experts from India. Muslims constitute a minority in India, and there are pro-Halal and anti-Halal groups, with a vast vegetarian population. Thus, this research is important in providing directions for future researchers through the 29 constructs. Researchers can undertake extensive comparative analysis and empirical or simulation-based work.

This paper shows that Logistics service providers have the most prominent role in implementing the Halal supply chain. The findings of this article may help in the development of a knowledge base for Halal logisticians. These results may also be beneficial for the four top stakeholders, whose objectives regarding each critical success factor are provided through experts. This work may provide future research and development directions for stakeholders and help them in the efficient adoption of HL. The limitation of this study is that the fifteen identified CSFs are taken from the existing model. The validation of these factors through the experts could be biased. We have limited the construct of these factors in terms of number, but there is a chance that some research constructs and factors have been missed. These limitations could be addressed in future research and applications using more models to identify the CSFs and their constructs. Further, these CSFs can be ranked appropriately through multicriteria decision-making tools. Apart from this, these constructs could be used to conduct some advanced statistical analysis, such as factor analysis and structural equation modelling.

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