

Critical Factors of the New Islamic Supply Chain Model through the Lens of Descriptive Data Analysis

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Abstract— This empirical paper is endeavoured to confirm the critical factors of the Islamic supply chain model in Malaysia. The seven (7) constructs are inclusive of halal integrity, halal logistics practices & industry; halal logistics service providers; halal collaboration (JAKIM & HDC); halal international logistics and confidence on halal certification/log. A quantitative method of descriptive statistics of all the constructs been measured in the survey. The measurements are being performed by using a perceptual scale. Each question is answered by using the five-point Likert scale: strongly disagree (1); disagree (2); neither agrees nor disagree (3); agree (4); and strongly agree (5). A qualitative data in the forms of words from the interview of the halal practitioner is presented. The information in terms of minimum & maximum value, mean and standard deviation of the data are shown. The result showed all the seven (7) constructs are within the assumption underlying the statistical techniques which addressees' specific research questions. We describe these constructs for establishing a new model of Islamic halal supply chain and provide a brief introduction of its scope and practices.

Keywords— *Islamic Supply Chain Model, JAKIM, HDC, Descriptive Statistic, Construct*

1. Introduction

As indicated in a recent publication [1], by 2030 the Muslim population is evaluated to constantly increase to 2.2 billion as compare to 1.7 billion in 2015. [1] assessed that the world wide expenditure of Muslim consumers on nourishment alone is worth US\$1.128 billion in 2014, which is expected to increase to US\$1.585 billion by 2020. This structures a potential centre business sector for the halal sustenance area, halal nourishment supply and logistics. Malaysia, as expressed is the main nation

in the Indicator and consequently the most created Islamic economy biological system and additionally the best created Islamic economy for halal nourishment all through the locale [1]. Malaysia now a well-recognized pioneer in the Halal Food space leads the ranking with a healthy halal food ecosystem.

Furthermore, due to an extensive media coverage and events coupled with its market-leading regulations and compliance processes make Malaysia the most developed Halal Food economy [1]. The commitment to become the biggest halal product exporter among the countries in the Organization of Islamic Cooperation (OIC) was also addressed by its International Trade and Industry Minister Datuk Seri Mustapa Mohamed [2]. Malaysia is a leader in the Halal Food globally, as an inventor and remains to lead with the best global Halal standards, regulations and more significantly a compliance management process.

1.1 Issues

Logistics and transportation is a significant and strategic industry to developing countries like Malaysia. As the volume of trade increases, the needs for efficient, integrated and optimal logistics and transportation system is essential for the movement of goods and people [3], that necessarily to include the halal transformation in the supply chain activities [4]. Since the halal business has been broadly acknowledged, its respectability and dependability of the items is critical for Muslim's commitment. In a matter of seconds, the long and complex worldwide nourishment production network overpowered the errand of the suppliers to convey a wellbeing and halal with no questions ("was-was"). According to [5] the principle constituting the halal supply chain still remains in

ambiguity and vagueness. Several researchers are disputing in comprehension of the definition and what makes the halal supply chain network. Besides, securing the halal integrity, respectively and quality is another important issue in halal supply chains [6] and the doubt (*was-was*) [7] and together with shubahah (mixing between halal and non-halal). Meanwhile, [8] stressed on the certification and handling issues of halal lack the brand names, the utilization of Quran verses and absence of authority enforcement in determining mishandled halal logos, adding to the shortcomings confronted by the halal uprightness or dependability.

2. Critical Factor of Halal Islamic Supply Chain

Table 1. Critical constructs measurement for Halal Islamic supply chain

Construct	Researchers
Halal Integrity	[9], [10]
Halal Logistics Practices	MS 1500:2009 (Department of Standards Malaysia, 2009); halalan toyyiban assurance pipeline MS 2400:2010 ([11], [12], [13]), and requirement and guidance for shariah-based quality management system MS 1900:2014 ([14])
Halal Logistics Industry	[4], [11], [12], [13]
Halal Logistics Service Providers	[15], [16]
Halal Collaboration (Jakim & HDC)	[17], MS 1500:2004 ([18]) and MS 1500:2009 ([19]); halalan toyyiban assurance pipeline MS 2400:2010 [11], [12], [13])
Halal International Logistics	[8], MS 1500:2004 ([18]) and MS 1500:2009 ([19]); halalan toyyiban assurance pipeline MS 2400:2010 [11], [12], [13]), and requirement and guidance for shariah-based quality management system MS 1900:2014 [14])
Confidence on Halal Certification/Log	[20], [11], [12], [13]

3.1. Halal Integrity

[9] and [10] highlighted the significance of halal standard and strategy as the indications of the dedication at the top administration level in the halal business when all is said in done and particularly, halal production network. According to [9], the policy also addresses “the responsibility of an organization in protecting the halal integrity along the supply chain; scope of halal certification of the organization; the assurance to the consumer or customer (the promise); and method of assurance (control mechanism; covering aspects like halal committee, halal compliance officer and inspections. In Malaysia, these policies have been established [11-13].

3.2. Halal logistic practices

There is a solid backing from government in regards to the halal business in Malaysia. It can be demonstrated from its endeavours in guaranteeing that the halal business is working legitimately, which is in accordance with the shariah law. [8] Expressed that the administration underpins has been expansive from the material sources until conclusive utilization. A portion of the critical endeavours given by legislature of Malaysia are committed halal power, sustenance premises, halal pharmaceutical and medicinal services items, Shariah-agreeable logistics, and so forth. The nearness of JAKIM and Halal Industry Development Corporation (HDC) in the Malaysian halal business additionally demonstrated phenomenal responsibility from the legislature. Other than as a halal affirmation power, JAKIM had likewise created the manual methods of halal accreditation [17] and rules for arrangement of remote Islamic association as the halal confirmation body for items to be traded into Malaysia [21]. Furthermore, HDC is one-stop organization, which is mindful in reviewing halal organizations, issuing halal confirmation, meetings, trainings, and advancing halal business in local business sector as well as in the universal business sector [8]. Significantly, various principles, arrangements, and measures have been set up by the administration, for example, the rule for creation, planning, taking care of and capacity of halal nourishment MS 1500:2004 [18] and MS 1500:2009 [19]; halalan toyyiban certification pipeline MS 2400:2010 [11-13], and prerequisite

and direction for shariah-based quality administration framework MS 1900:2014 [14].

3.3. Halal logistics industry

At present, there was a special request from United Nation that all nations must have extraordinary halal centers to provide food for the halal items because of the expansion of Muslims population all through the world [4]. Various halal center points have been set up in Malaysia. For examples, the Northport set up a halal distribution center affirmed under MS 2400 [11-13]. This halal stockroom is made to provide food for the halal nourishments' crude materials. This halal center point additionally makes a samaq procedure for every one of the holders marked as halal. In endeavoring to have a halal center, Penang Port has additionally been beginning to make an isolation of halal territory and samaq process. The staffs have been prepared to control and screen the territory. Essentially, in the Port Tanjung Pelepas, two squares of halal distribution center are at present worked to cook for the halal interest. Not just in the seaports, a halal center has likewise been implicit the Senai International Airport. Another expansive cool room distribution center is in the interim under development for nearby organizations to cook for halal nourishments' stockpiling to be sent out to bay nations by year 2017. In the meantime, Iskandar Regional Development Authority (IRDA) is arranging and setting a thorough halal focus that incorporates lab and different necessities. Despite the fact that halal center points in Malaysia are developing in number, usages of the center points are still less compelling and productive. As a case, at the Port Klang Free Zone, its halal distribution center has not been completely used. The halal lab has not been fabricated. Specialized backings regarding office and records are still considered at the underlying stage. Change is still required keeping in mind the end goal to the halal center points are completely used [4].

3.4. Halal logistic services provider

As indicated by [15], halal certified organizations are vital to look past their creation and fixings. They ought to extend the control to the whole inventory network systems to guarantee that all the procedures required in the operations are in consistence with Shariah law. The MS 1500: 2009, issued by [19], gave the general rules to the

generation, readiness, taking care of, and capacity of halal nourishments. Utilizing this archive, all the related gatherings ought to comprehend the halal necessities to guarantee halal handling of the items. As indicated by [16], an appropriate preparing is required. To guarantee the trustworthiness of the halal items, every one of the fixings must be halal. All the more vitally, contacts between the halal and non-halal items must be abstained from amid the whole procedures [10], [16]. As transportation, stockpiling, terminal, and purging operations were considered as critical elements in the halal store network [9], [10], the work of [9] gave a subtle element rule in regards to the halal control and affirmation exercises that must be performed inside the four operations. To bolster the halal control, the right marking on halal nourishment is vital for buyers on the grounds that specific names can regularly be misdirecting [20]. Naming is critical with the end goal of confirmation of halal status and the item quality. Halal logo, HACCP, ISO, and different marks have turned into a typical instrument with the end goal of controlling the halal item.

3.5. Halal collaborations (JAKIM& HDC)

Halal items are delivered by Muslims, as well as by non-Muslims. Despite the fact that strict supervisions, help, advice, and trainings could be performed, separation amongst Muslim and non-Muslim suppliers/makers is imperative to warrant the halal trustworthiness. One of the critical determinant components of halal honesty is traceability. Through the separation, traceability of the items can be ensured. Furthermore, [9] proposed that separation between the suppliers (i.e., Muslims and Non-Muslims) ought to be performed in the entire procedure of logistics, including getting, securing, putting away, cross-docking, VAL, request picking, and transporting.

3.6. Halal international logistic

Logistics was for the most part characterized as transportation and dissemination of products and administrations from the purpose of inception to the point of utilization keeping in mind the end goal to meet necessities of clients. This definition infers that logistics cover every one of the exercises and procedures of dispersion, stockpiling, taking care of and acquisition of items [15]. As per [10],

danger is created by uncertainty if something is genuinely halal, which may impact in dismissal of the halal item. [10] highlighted, it is dependent upon the attributes of item, where surrounding and unitized items have less hazard than the refrigerated and mass items. All the more essentially, powerlessness must be stayed away from; in light of the fact that less weakness demonstrates the vigor of logistics procedure. [9] proposed to utilize committed logistics foundation, similar to a devoted halal distribution center and transport. This may shield the halal honesty amid the dissemination procedure up to the point of client buy [10].

3.7. Confident on halal certification/Log

Shariaah law as the fundamental guide in developing the Halal standard is importantly to be applied. It is compulsory that any products and services produced must relate to halal quality control as to ensure the Shariaah law fundamental guides are strictly adhered. With the Halal certification and Halal standard established by the government, any logistics supply providers and manufacturers are obliged to maintain the halal status of the Halal services they offered, including the Halal supply chain practice [14]. With the Halal business now come in to major global business, the awareness of Halal practices in the supply chain need to be seriously explored and educate as to maintain the fundamental guides of Shariaah law applied in the Halal certification.

3. Descriptive data analysis

Descriptive analysis is the most basic statistical data analysis. It is quite simple but powerful [22]. The mean, median, mode, variance, range and standard deviation simultaneously applied descriptive statistic. All the seven (7) constructs data have been taken from 92 respondents consisting of food producers, raw materials supplier, customers and logistics operators in Malaysia. As being introduced in the abstract the measurements are being performed by using a perceptual scale. Each question is answered by using the five-point Likert scale: strongly disagree (1); disagree (2); neither agrees nor disagree (3); agree (4); and strongly agree (5). Please refer to Table 2.0.

Table 2. Critical factors

Construct	Value average an	Average of Stdv	Min of Min	Max of Max
Halal Integrity	4.35	0.84	1.00	5.00
	4.42	0.85	1.00	5.00
	4.38	0.89	1.00	5.00
	4.26	0.90	1.00	5.00
	4.17	0.93	1.00	5.00
Halal Logistics Practices	4.16	0.86	2.00	5.00
	4.23	0.84	2.00	5.00
	4.24	0.75	2.00	5.00
	4.11	0.87	2.00	5.00
	3.68	1.34	1.00	5.00
	4.30	0.84	2.00	5.00
Halal Logistics Industry	4.40	0.80	1.00	5.00
	4.25	0.94	1.00	5.00
	3.47	1.20	1.00	5.00
	3.60	1.22	1.00	5.00
	3.55	1.21	1.00	5.00
Halal Logistics Service Providers	4.29	0.86	1.00	5.00
	3.93	1.15	1.00	5.00
	3.80	1.01	1.00	5.00
	3.80	0.93	1.00	5.00
	3.76	1.03	1.00	5.00
Halal Collaboration (JAKIM & HDC)	3.79	1.08	1.00	5.00
	3.73	1.09	1.00	5.00
	3.85	0.98	1.00	5.00
	3.72	1.33	1.00	5.00
	3.28	1.38	1.00	5.00
Halal International Logistics	3.39	1.38	1.00	5.00
	3.62	1.17	1.00	5.00
	3.48	1.29	1.00	5.00
	3.70	1.00	1.00	5.00
	3.80	0.99	1.00	5.00
Confidence on Halal Certification /Logo	3.85	1.03	1.00	5.00
	3.94	1.01	1.00	5.00
	4.34	0.82	1.00	5.00
	4.36	0.82	1.00	5.00
	4.56	0.77	1.00	5.00
Grand total	4.57	0.86	1.00	5.00
	4.49	0.94	1.00	5.00
Grand total	3.99	1.01	1.00	5.00

From Table 2.0, the grand average value for mean is 3.99 while the standard deviation is slightly above 1.01 which indicates that the seven (7) critical construct measured shows the halal concept and practices have been in progress respectively. The descriptive statistics explained the mean of Halal Integrity ranges from 4.17 to 4.42, with the standard deviation ranges from 0.84 to 0.93.

According to [23] the threshold of standard deviation is within 0 to 1. This indicates that Malaysian business practitioners directly or indirectly implementing the halal integrity. This positive pattern followed by Confidence on Halal Certification/Log with achievement of means between 4.49 to 4.57 with the standard deviation between 0.77 to 0.94 which indicates that certification issuances regarding the halal certification is lawfully taking place in Malaysian business practitioners. The Halal Logistics Practices results are encouraging as well with the average mean value ranges from 3.68 to 4.40 with standard deviation between 0.75 and 1.34.

As for Halal Logistics Industry the mean is ranging between 3.47 and 4.29 which indicate the high performance, however standard deviation is slightly above 1.0 on three (3) of five (5) observations. Halal Logistics Service Providers recorded a mean value between 3.73 and 3.85 but slightly upward in standard deviation ranging from 0.93 to 1.09 (three (3) out of six (6) observations having results of 1.03 to 1.09). Similarly, the last two (2) critical constructs of Halal Collaboration (JAKIM & HDC) has a positive mean ranging from 3.28 to 3.72, however the standard deviation value of 1.17 to 1.38 which exceeding 1.0 threshold. Lastly, the Halal International Logistics recorded an encouraging responses of mean between 3.70 to 4.36 and standard deviation ranging from 0.82 to 1.03 (two (2) observations out of six (6) higher than 1.0)

4.1. Interview

The researchers used one of the qualitative techniques which are interview to elaborate interpretations of market phenomena without depending on numerical measurement. Below are the five (5) interviews which have been summarized to the exact intentions. The full content is available in the appendix Table 3.

Table 3.

Experts/ Respondents	Halal activities/implementation
No 1	Implementing halal standard which follow the national standard. Set-up halal laboratories and working closely with JAKIM & HDC. The respondent suggested for more

	effective promotions especially to SMEs
No 2	Population in Malaysia needs hygiene/confidence/secure on supply chain and product itself. Need resources to handle all processes
No 3	Expose to halal concept from young age through the cleanliness & health
No 4	A Massive public outcry on the product quality whether sharia' compliance or vice-verse
No 5	Authorized body to conduct an audit/ to issue certificate and conducting surveillance

4. Recommendation and conclusion

Descriptive data analysis has been performed on the average mean and standard deviation inclusive of halal integrity, halal logistics practices & industry; halal logistics service providers; halal collaboration (JAKIM & HDC); halal international logistics and confidence on halal certification/log as a pre-requisite for further analysis. Particularly, Halal Collaboration (JAKIM & HDC) needs some attention from the researchers. However, these factors able to be verified and confirmed through extensive interviews within all the industry players involved in the halal industry, mainly government, JAKIM, HDC, logistics practitioners, etc. Based on the interviews from 5 experts in different areas his confirmation is utmost important in providing more accurate and thorough understanding of how the Islamic supply chain should be implemented and practice in the Malaysia perspective. As a result, a model of the Islamic supply chain in Malaysia could be established.

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