

Halal food standard implementation: are Malaysian firms proactive or reactive?

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Abstract

Purpose – The purpose of this paper is to investigate the reasons behind halal food standard (HFS) implementation among food manufacturers in Malaysia. Additionally, it examines whether firms in the Malaysian food manufacturing industry are proactive or reactive in implementing HFS.

Design/methodology/approach – A field survey was conducted in 210 halal-certified food manufacturers. A partial least squares structural equation modeling technique was used to examine the relationships between the reasons and implementation of HFS.

Findings – The empirical assessments revealed that organization's commitment, operational improvement and marketing functions are the internal reasons. Meanwhile, government intervention and consumer pressure are the external reasons to implement HFS. Findings also indicated that Malaysian food manufacturers are proactive in implementing HFS.

Practical implications – The knowledge from this research could encourage non-certified firms to implement HFS and entices halal-certified firms to remain certified. It guides managers toward adopting a better strategy, particularly in prioritizing the internal factors and resources for a more sustainable and positive implication.

Originality/value – This research is among the few studies that scrutinized the rationale behind the rapid growth of halal food industry. It argues that the pursuit of HFS is not solely a religious obligation, but it is also driven by safety, quality and marketing motives.

Keywords Halal, Halal certification, Halal food, Halal food standard

Paper type Research paper

1. Introduction

The halal food industry is increasingly recognized as one of the largest food industry in the world. The State of the Global Islamic Economy Report estimated that the revenues from halal-certified food and beverage products are worth about \$415 bn. The figure is expected considering Muslims spend close to \$1.2 trillion on halal food and beverages (Thomson Reuters, 2016). The rapid growth of the halal food industry has encouraged food companies to implement halal food standard (HFS). For example, major food companies like McDonald's and Nestlé have begun to implement HFS to incorporate halal practices and processes throughout their production chains (Fischer, 2016a, b).

According to Talib *et al.* (2016a), the emergence of halal food industry is caused by the competitive nature of the global food industry. Firms regarded HFS as a strategic tool in remaining competitive, relevant and survive the volatile global economy. Moreover, other factors such as the increasing awareness among Muslim consumers (Ambali and Bakar, 2014), the positive acceptance among non-Muslims (Ayyub, 2015), the recognition of halal as a brand (Wilson and Liu, 2010) and migrations among Muslims (Abdul-Talib and Abd-Razak, 2013) have attracted food companies to venture into the halal food industry.

The practical recognitions from the industry have drawn rising interest among academicians. This is translated by the expanding literature on halal food certification and standard, particularly, the research on understanding the reasons behind implementation.

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In recent years, contemporary scholars such as Marzuki *et al.* (2012), Talib *et al.* (2015, 2016a) and Zailani *et al.* (2015) studied the motivations behind HFS. However, their scope was limited. This paper argues that the extent of past research was merely on highlighting or observing the possible motivation factors.

Furthermore, although the works of Zailani *et al.* (2015) and Marzuki *et al.* (2012) provide empirical evidence, they failed to scrutinize whether food companies are proactive or reactive in implementing HFS. It is still unknown whether the implementation of HFS among food manufacturers is instigated by proactive initiatives or pressured by reactive measures. Therefore, the objective of this paper is to investigate the reasons behind HFS implementation. Additionally, it aims to ascertain whether food manufacturers are proactive or reactive in implementing HFS.

Understanding and determining the proactive or reactive approach is necessary as it gives a fuller explanation behind the pursuit of HFS. Hence, the present study will enable managers in the food manufacturing industry on which approach to utilize in search of a better strategy. Likewise, it may entice non-certified food manufacturers to become halal-certified.

2. Literature review and hypotheses development

To achieve the designated objectives, this research applies two established management concepts, specifically the institutional isomorphism (DiMaggio and Powell, 1983) and the resource-based model (RBM) (Barney, 1991). The institutional isomorphism is commonly applied in explaining the external factors that influence a firm's behavior (Talib *et al.*, 2016a). In this study, it is used to explain the motivations behind HFS implementation. DiMaggio and Powell (1983) posited that a firm's conducts are in response to the external environment. Additionally, Lawrence and Suddaby (2006) explained that business organizations function within institutionalized settings where conducts are profoundly influenced by rules, regulations and policies. Accordingly, Fischer (2016b) and Latif *et al.* (2014) argued that the halal food industry is highly institutionalized as the authorization of HFS is regulated by respective governments.

In their seminal article, DiMaggio and Powell (1983) highlighted three types of external factors, namely: coercive, mimetic and normative pressures. According to Talib *et al.* (2016a), a normative pressure is the reaction emerged in response to governmental factors and the need to legitimize business operations. Meanwhile, mimetic pressure is caused by industry competition and the trend of imitating a competitor's best practices. Separately, Talib *et al.* (2016a) suggested that, unique to the halal industry, a normative pressure is the need to observe the standard industry practices, specifically, conforming to the demand from Muslim consumers for uncompromised halal food.

Previous research (Chen *et al.*, 2015; Escanciano and Santos-Vijande, 2014; Fernando *et al.*, 2014; Sampaio *et al.*, 2009) has established that governmental factor is a significant motivator to implement food standards. For example, Chen *et al.* (2015) found that food companies in New Zealand actively implement food standards even though such action is non-mandatory. Similarly, in Malaysia, the need to comply with the law and an effort to legitimize business instigated food companies to implement food standard (Fernando *et al.*, 2014).

Besides governmental regulation, the competitive food industry is an important factor determining standards adoption among food companies (Escanciano and Santos-Vijande, 2014; Sampaio *et al.*, 2009). For instance, Sampaio *et al.* (2009) and Escanciano and Santos-Vijande (2014) reported that competitive reasons and the pressure to improve performance relative to rival firms further intensify the need to implement food standards.

Furthermore, findings from past research have underlined the notable influence of consumer demand in pressuring food companies to implement food standards. According to Chen *et al.* (2015), Fernando *et al.* (2014) and Escanciano and Santos-Vijande (2014), the urgency to increase consumer confidence, reduce complaints and anticipate consumer

demands are critical aspects considered in implementing standards. Therefore, based on these observations, the following hypotheses are proposed:

H1. Government regulation positively influences HFS implementation.

H2. Industry competition positively influences HFS implementation.

H3. Consumer pressure positively influences HFS implementation.

The RBM concept by Barney (1991) is used to explain the internal motivations to implement HFS. For the purpose of this study, a standard is regarded as a strategic tool (Alonso-Almeida *et al.*, 2012; Rubio-Andrada *et al.*, 2011) and that HFS is a type of food safety certification consistent with established standards like GMP and the HACCP (Aziz and Chok, 2013; Nawi and Nasir, 2014). Hence, HFS is considered a food manufacturer's strategic resource to remain competitive within the industry.

Barney (1991) explained that to achieve competitive advantage, a firm's resource should be valuable, rare, difficult to imitate and non-substitutable. In line with Barney's RBM concept, Talib *et al.* (2016b) maintained that firms are capable of achieving favorable business outcomes if resources are utilized effectively and efficiently. In addition, due to the highly competitive food industry (Talib *et al.*, 2016a) and that firms' resources are homogeneous (Barney, 1991), this paper argues that food companies implement HFS in order to make their products unique and distinguish themselves from the competitors'. In short, Fikru (2014) postulated that "a firm's internal capability is expected to affect its decision to certify."

To better understand the internal motivations of HFS, Talib *et al.* (2016b) specified a firm's internal capability into tangible and intangible resources. Tangible resources concern with firm's assets, in particular, the human capital and internal processes while intangible resources relate to nonphysical elements, specifically firm's image and reputation.

In the case of HFS, there are various reasons of implementation. First, according to Talib *et al.* (2015), employee and managerial commitment is among the main internal reasons to implement HFS. The organization commitment to protect the halal integrity, as well as maintaining highest quality and safety standards, encourages HFS implementation. The total protection on Halal integrity is paramount for the Halal industry progress and potentially enables firms to achieve organizational improvements (Soon *et al.*, 2017; Sampaio *et al.*, 2009).

Second, the dedication to improve internal operation is another internal reason to implement HFS. Sampaio *et al.* (2009) explained that firms who considered standards as an opportunity to improve internal processes will enjoy more positive results, thus encourages and explains the commitment to implement HFS (Talib *et al.*, 2016b).

Lastly, the prospect of marketing benefits boosts the desire to implement HFS. This is because by implementing HFS, a firm improves its image among the public (Zailani *et al.*, 2015). Since halal symbolizes better quality, hygiene, safety and wholesomeness, it undoubtedly enhances a firm's reputation. Based on the above, the following research hypotheses are formulated:

H4. Organization commitment positively influences HFS implementation.

H5. Operation improvement dedication positively influences HFS implementation.

H6. Marketing functions positively influence HFS implementation.

There is a relatively small body of literature that concerns with the proactive or reactive approach to standards implementation. Unfortunately, past halal standard and certification research has yet to scrutinize whether HFS is proactively or reactively implemented. This is because past research focused more on highlighting or observing the possible motivation factors. Nevertheless, in general, several studies (Talib, 2017; Alonso-Almeida *et al.*, 2012; Rubio-Andrada *et al.*, 2011) have investigated the manner of standard implementation.

As described by Rubio-Andrada *et al.* (2011), the motives behind standard implementation exercise can be categorized into proactive and reactive approaches. A proactive motive is the desire to improve internal operations, processes and productivity. Moreover, Alonso-Almeida *et al.* (2012) described proactive approach as an offensive internal strategy and anticipatory conduct. Meanwhile, a reactive approach relates to the reaction from external elements and pressures, such as government regulations, consumer demand and industry competition (Rubio-Andrada *et al.*, 2011). Furthermore, firms with reactive approaches are known to engage in a defensive tactic and behave depending on the environment (Rubio-Andrada *et al.*, 2011). Hence, for the purpose of this paper, the internal motivations are associated with proactive approaches while external motivations are linked with reactive approaches.

Deciding whether HFS implementation is based on proactive initiatives or reactive measures is necessary because it can affect a firm's strategic ventures or influence firm performance. Moreover, Sampaio *et al.* (2010) emphasized that although proactive and reactive approaches exist collectively within an organization, only one is the most important and predominant. In a recent study on HFS, Talib (2017) emphasized the need to distinguish the prevalence between the proactive approach and reactive measure to halal standard implementation (HALS) as it could facilitate strategy formulation and improve resource allocation.

Therefore, this paper argues that in the case of proactive approach, HFS implementation is based on the commitment to improve internal operation where maintaining safety, quality and protecting halal integrity are the main objectives. Otherwise, if firms undertake reactive measure, it indicates that HFS is implemented due to the pressure from external pressures (i.e. government regulations, consumer demand and industry competition). However, past literature indicates that proactive motives outweigh the reactive motives (Alonso-Almeida *et al.*, 2012; Escanciano and Santos-Vijande, 2014; Rubio-Andrada *et al.*, 2011). Thus, indicating that firms are undertaking an offensive approach when implementing standards. Hence, this paper suggests that:

H7. Firms are proactive in implementing HFS.

The conceptual framework of this study is presented in Figure 1. As shown in the figure, the external (reactive) pressures are represented by three factors, namely, government regulation, industry competition and consumer pressure. In addition, the internal (proactive) motives are comprised of organization commitment, operational improvement and marketing function factors. As the figure indicates, the implementation of HFS is influenced by both the internal and external pressures.

3. Methodology

3.1 Research design

A quantitative research design was used to assess the external pressures and internal initiatives of HFS implementation. This study also applied a survey methodology to obtain further in-depth information on whether HFS implementation assumes a proactive or reactive approach. According to Kumar *et al.* (2013), a quantitative research design commonly applies survey methodology to collect information from a pre-determined sampled population.

3.2 Research instrument

In this study, a self-administered questionnaire was distributed to gather information from the target respondents as it is a common method for survey approach (Rowley, 2014). The questionnaire contained 60 items and was divided into three sections (A, B and C). Section A comprised of 15 items on external pressures and 15 items on internal initiatives, while section B consisted of 25 items on the components of HFS. For section C, five items were designed to retrieve a target respondent's personal and organization information.

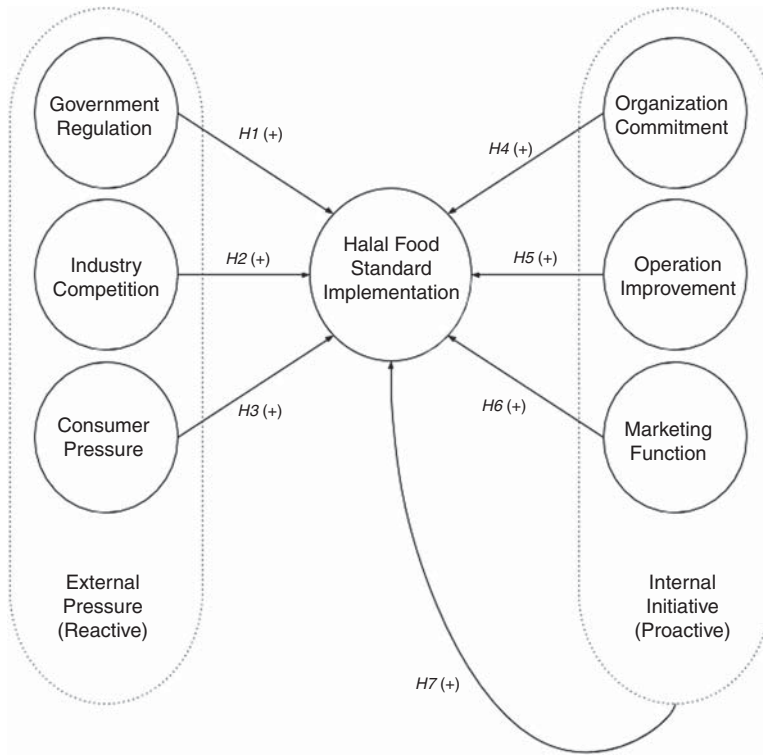


Figure 1.
Conceptual framework

In sections A and B, five-point Likert scales were used, ranging from 1 (strongly disagree) to 5 (strongly agree), while section C used nominal scales instead.

The self-administered questionnaire was developed from the extensive literature review[1] and the reliability and validity were examined and scrutinized through two measures. First, the questionnaire was evaluated by a panel of experts consisting of two industry experts and two academicians. Second, a pilot study that comprised of four interviews and 30 postal surveys was conducted. From these measures, the questionnaire was fine-tuned and showed similar bearing with that of the final sample.

3.3 Population and sample

The population of this research was the MS1500-certified food manufacturing companies in Malaysia. The MS1500—an acronym for the Malaysian Standards for halal food production, preparation, handling and storage—was chosen because of its global recognitions and consistency with renowned food standards like the GMP and the HACCP system (Aziz and Chok, 2013; Latif *et al.*, 2014). The sampling frame was based on the Federation of Malaysian Manufacturers Food and Beverage Industry Directory. This directory contained a total of 1,300 MS1500-certified food manufacturers' address and contact information. A convenient sampling technique was applied and survey questionnaires were sent to all target respondents.

3.4 Data collection procedure

The data collection process took four months from June to September 2016. Questionnaires were sent through mail while some were distributed personally. Data were gathered in four regions.

The procedure successfully collected a total of 210 valid responses of which 62 questionnaires retrieved from the southern region, 95 from the central region, 33 from the northern region and 20 from the east-coast region. All questionnaires were assigned to managerial personnel who were responsible for supervising the halal accreditation and standard implementation procedures. This approach was necessary as a means to overcome response bias and that “[managerial personnel] have full knowledge of firm operations, as well as decisive and influential power to determine the operations in line with halal requirements” (Zailani *et al.*, 2015).

3.5 Method of data analysis

A partial least squares structural equation modeling (PLS-SEM) technique was applied for data analysis. The PLS technique was applied as the goal of this research is to predict the key target constructs and identifying the driving constructs (Hair *et al.*, 2011). Additionally, due to the research’s complex structural model, the SEM approach was used (Hair *et al.*, 2011) as it enables the prediction of multiple causal relationships between constructs (Zailani *et al.*, 2015). Furthermore, given that every indicator in the structural model is reflective, the use of PLS-SEM is more appropriate because the changes in the latent constructs (internal and external motivations) are reflected in changes in the indicator manifest variables (HFS implementation).

Prior to analysis, the data were screened for normality, detection of outliers and common method variance. Initial analysis indicated that the data were normally distributed with no cases of extreme outliers. Additionally, by performing Harman’s single-factor analysis (Kafetzopoulos and Gotzamani, 2014), common method variance was not an issue, thus, supported the approach of acquiring information from a single managerial personnel per organization. Following the preliminary tests, the gathered data were suitable for PLS-SEM analysis. The PLS-SEM analysis was performed using the SmartPLS 3 application (Ringle *et al.*, 2015).

4. Results

4.1 Sample profile

Among the 1,300 MS1500-certified target respondents, only 210 food manufacturers participated resulting in a 16.15 percent response rate. The overall response was sufficient, as demonstrated by Hair *et al.* (2014) that at least “59 observations per group are needed to detect R^2 values of around 0.25 at a significance level of 5 percent and a power level of 80 percent.”

Majority of the respondents were Malaysian-owned firms (68.1 percent), followed by multinational firms (22.4 percent) and only 9.5 percent were foreign owned. Furthermore, a large percentage of the respondents were small medium enterprises (69.5 percent) while the rest were large (17.6 percent) and micro-enterprises (12.9 percent). Moreover, a total 112 (53.3 percent) respondents have been established for 11 years or more, whereas the remaining 98 (46.7 percent) respondents were only established within the last decade.

From the 210 managerial personnel, middle-level managers (i.e. operation manager or senior manager) held the largest percentage of 71.5 percent while the remainders held top-level managerial positions (CEO, owner, director). Collectively, a slight majority (51.4 percent) of these managers indicated that they had five years or less experience in the halal industry. This figure is understandable because past research (Talib *et al.*, 2015) proved that the lack of skilled personnel is apparent in the halal food industry.

4.2 Measurement model assessment

The measurement model was assessed according to Hair’s *et al.* (2014) PLS-SEM systematic evaluation. Assessing the measurement model is necessary to evaluate the reliability and validity of the construct measures. Hair’s *et al.* (2014) systematic assessment involved

five stages: model specification, internal consistency reliability, indicator reliability, convergent validity and discriminant validity (DV).

In the model specification stage, a path model was created to connect the variables based on the underlying concepts. In this study, there were six reflective exogenous constructs grouped into external reasons (government regulation (GOV), industry competition (IND) and consumer pressure (CON)) and internal reasons (organization commitment (ORG), operation improvement (OPE) and marketing function (MAR)). Additionally, there were five reflective endogenous constructs representing the components of HFS (human resource (HUM), equipment and infrastructure (EQU), production process (PRO), marketing operation (MKT) and logistics (LOG)). These components reflect a firm's functions aligned to the stipulated halal standard (MS1500). Firms must observe the five functions prior to standard accreditation. These endogenous constructs will be grouped later into a single HALS construct.

To assess the model's internal consistency reliability, the measure of composite reliability (CR) was evaluated instead of the common Cronbach's α (Hair *et al.*, 2014). According to Hair *et al.* (2014), the CR valuation should be higher than 0.70 to indicate a satisfactory internal consistency. The results for internal consistency are shown in Table I. From the table, the CR values for all construct were more than 0.70, thus indicating high levels of internal consistency reliability.

Subsequently, the indicator reliability was assessed to ensure that every indicator has a common theme and is represented by each respective latent construct. To assess indicator reliability, the indicator's outer loadings should be higher than 0.70 (Hair *et al.*, 2011, 2014). However, as shown in Table I, three indicators have loading values less than 0.70, namely, Q1 (0.638), Q2 (0.626) and Q14 (0.680). These three indicators were retained because the removal of Q1, Q2 and Q14 did not lead to an increased in the CR value (Hair *et al.*, 2014). Nevertheless, a strong majority of the indicator loadings were well above the minimum threshold and indicated a strong reliability.

In order to assess convergent validity, the average variance extracted (AVE) criterion was used. AVE measures the degree to which a latent construct explains the variance of its indicators. Following Hair's *et al.* (2014) recommendation, the AVE value should be more than 0.50. In this study, the AVE values ranged between 0.548 (GOV) and 0.758 (HUM) (see Table II). These findings indicated a significant degree of convergent validity as all the constructs explain more than half of the variance of its indicators (Hair *et al.*, 2014).

Consequently, DV was assessed to further prove that the latent constructs are truly unique and unconnected from other constructs in the model (Hair *et al.*, 2011, 2014). DV was evaluated by applying the Fornell-Larcker criterion and then the AVE square root was compared with the latent variable correlations (Hair *et al.*, 2014). The DV results are tabulated in Table II. From the Table II, the square root of each construct's AVE (in italic) is larger than the correlation with other constructs. This indicates that each construct is distinct from one another and provides a solid evidence for DV. Therefore, the findings reported thus far have fulfilled every PLS-SEM result evaluations and are suitable for the structural model assessment.

4.3 Hierarchical component model (HCM)

Prior to evaluating the structural model, an HCM procedure was executed. HCM is a "higher-order structure that contains several layers of constructs and involves a higher level of abstraction" (Hair *et al.*, 2014, p. 240). In other words, by performing HCM procedure, an intricate model can be operationalized at higher levels of abstraction with reduced complexity (Hair *et al.*, 2014). Hence, HCM was performed in this study for two distinct reasons: to form a more comprehensive PLS model and to reduce the number of relationships.

To perform HCM procedures, this study adheres to the two-stage approach suggested by Becker *et al.* (2012). In the first stage, the lower-order constructs (LOC) of HUM, EQU, PRO,

Construct	Indicator	Loading	CR	CA	Halal food standard implementation
GOV	Q1	0.638	0.857	0.790	
	Q2	0.626			
	Q3	0.761			
	Q4	0.854			
	Q5	0.797			
IND	Q6	0.810	0.913	0.882	1337
	Q7	0.860			
	Q8	0.822			
	Q9	0.825			
	Q10	0.799			
CON	Q11	0.830	0.884	0.836	
	Q12	0.778			
	Q13	0.844			
	Q14	0.680			
	Q15	0.750			
ORG	Q16	0.815	0.927	0.901	
	Q17	0.878			
	Q18	0.880			
	Q19	0.863			
	Q20	0.793			
OPE	Q21	0.856	0.937	0.916	
	Q22	0.877			
	Q23	0.897			
	Q24	0.852			
	Q25	0.845			
MAR	Q26	0.808	0.937	0.916	
	Q27	0.836			
	Q28	0.899			
	Q29	0.913			
	Q30	0.866			
HUM	Q31	0.891	0.940	0.920	
	Q32	0.855			
	Q33	0.902			
	Q34	0.866			
	Q35	0.835			
EQU	Q36	0.775	0.899	0.836	
	Q37	0.738			
	Q38	0.869			
	Q39	0.839			
	Q40	0.777			
PRO	Q41	0.802	0.927	0.900	
	Q42	0.872			
	Q43	0.910			
	Q44	0.862			
	Q45	0.781			
MAR	Q46	0.791	0.899	0.862	
	Q47	0.760			
	Q48	0.850			
	Q49	0.798			
	Q50	0.807			
LOG	Q51	0.825	0.922	0.893	
	Q52	0.895			
	Q53	0.843			
	Q54	0.900			
	Q55	0.720			

Table I.
Internal consistency
and indicator
reliability

Table II.
Convergent and
discriminant validity

	AVE	CON	ORG	EQU	GOV	HUM	IND	LOG	MAR	MKT	OPE	PRO
CON	0.606	0.779										
ORG	0.717	0.526	0.847									
EQU	0.642	0.475	0.477	0.801								
GOV	0.548	0.598	0.524	0.407	0.741							
HUM	0.758	0.480	0.523	0.669	0.491	0.870						
IND	0.678	0.542	0.587	0.321	0.444	0.335	0.824					
LOG	0.704	0.534	0.573	0.658	0.580	0.599	0.481	0.839				
MAR	0.749	0.657	0.467	0.518	0.514	0.535	0.516	0.546	0.865			
MKT	0.642	0.507	0.429	0.565	0.411	0.482	0.342	0.591	0.521	0.801		
OPE	0.749	0.631	0.624	0.558	0.580	0.568	0.574	0.638	0.691	0.483	0.866	
PRO	0.717	0.513	0.489	0.764	0.444	0.646	0.368	0.608	0.487	0.515	0.504	0.847

MKT and LOG were merged together to create a new singular higher-order construct (HOC) labeled HALS. Following the combination, a repeated indicator approach was implemented. For this procedure, the HALS (HOC) construct had similar reflective indicators akin to the LOC. Next, in the second stage, the LOC latent variable scores were assigned as the manifest variable for HALS (Becker *et al.*, 2012). At this stage, the LOC are now the indicators for HALS and resembled the proposed conceptual model (Figure 1).

Subsequently, the HCM were assessed for reliability and validity measures similar with the PLS-SEM systematic evaluations (Hair *et al.*, 2014). All the HCM reliability and validity results comply with every model evaluation criteria and further support the measures' reliability and validity. Once the HCM procedure achieved satisfactory results, the next step is to assess the structural model.

4.4 Structural model assessment

The structural model assessment was conducted by adopting the procedures suggested by Hair *et al.* (2014), namely, collinearity assessment, coefficient of determination and predictive relevance. First, collinearity assessment was performed to check whether any constructs were correlated as this could indicate bias results and interpretations (Hair *et al.*, 2014). To detect potential collinearity issue, the variance inflation factor (VIF) value was referred where each constructs' VIF values should be less than 5 (Hair *et al.*, 2011). The collinearity assessment suggests that there is no indication of correlation among the constructs as the VIF values are less than 5. Hence, it verifies that collinearity is not an issue and the model is suitable for further assessments.

Second, the coefficient of determination (R^2) measures the model's predictive accuracy of the exogenous constructs combined effects on the endogenous constructs (HALS). According to Hair *et al.* (2014), R^2 values of 0.75, 0.50 or 0.25 indicate a substantial, moderate and weak predictive accuracy, respectively. In this study, the HALS R^2 value is 0.578. This suggests that the external (GOV, IND and CON) and internal (ORG, OPE and MAR) reasons moderately predict 57.8 percent of the variance of HALS construct.

Lastly, the predictive relevance (Q^2) "accurately predicts the data points of indicators in reflective measurement models of endogenous constructs (HALS)" (Hair *et al.*, 2014, p. 178). Additionally, a Q^2 value of more than 0 is acceptable to indicate the path model's predictive relevance (Hair *et al.*, 2014). The Q^2 value from this study is 0.365 and this signifies that the GOV, IND, CON, ORG, OPE and MAR exogenous constructs have predictive relevance for HALS endogenous construct.

4.5 Hypothesis testing

This section presents the testing of the seven proposed hypotheses. Through bootstrapping technique of 5,000 resampling and a two-tailed test, the results for

H1-H6 are presented in Table III. The results revealed that GOV, CON, ORG, OPE and MAR positively influence HFS implementation. Hence, H1, H3, H4, H5 and H6 are accepted. However, as demonstrated in Table III, H2 is rejected. The analysis reveals that industry competition has rather a weak and negative influence on HFS implementation ($\beta = -0.093$).

To test H7, this study relies on the importance-performance map analysis (IPMA). Though often neglected, Ringle and Sarstedt (2016) argued that with IPMA, it offers “important insights into the role of antecedent constructs and their relevance for managerial actions.” By using the SmartPLS 3 application (Ringle *et al.*, 2015) and observing the IPMA five steps procedures (Ringle and Sarstedt, 2016), the importance-performance map output is depicted in Figure 2.

From the IPMA results, three internal constructs (ORG, OPE and MAR) have notably high importance. Separately, the external constructs of CON and GOV have a considerable importance, while the IND construct has an insignificant importance. Furthermore, the IPMA result indicates that in general, both internal and external constructs have considerably high performance. In a *ceteris paribus* situation, the increase of one point in the performance of ORG, OPE and MAR are expected to increase the performance of HALS. The evidence from this study suggests that internal reasons hold more importance than the external reasons when implementing HFS. Therefore, this supports H7 that food manufacturers in Malaysia are proactive in implementing HFS.

Hypothesis	Path	Path coefficient	SE	p-value	t-value	Decision
<i>External pressure (reactive)</i>						
H1	GOV → HALS	0.135	0.062	0.031**	2.156	Accept
H2	IND → HALS	-0.093	0.064	0.145	1.458	Reject
H3	CON → HALS	0.137	0.071	0.054*	1.927	Accept
<i>Internal initiative (proactive)</i>						
H4	ORG → HALS	0.263	0.074	0.000***	3.549	Accept
H5	OPE → HALS	0.227	0.081	0.005***	2.810	Accept
H6	MAR → HALS	0.238	0.071	0.001***	3.363	Accept

Notes: t-statistics for two-tailed test: * > 1.65 ($p < 0.1$); ** > 1.96 ($p < 0.05$); *** > 2.57 ($p < 0.01$)

Table III.
Hypothesis testing

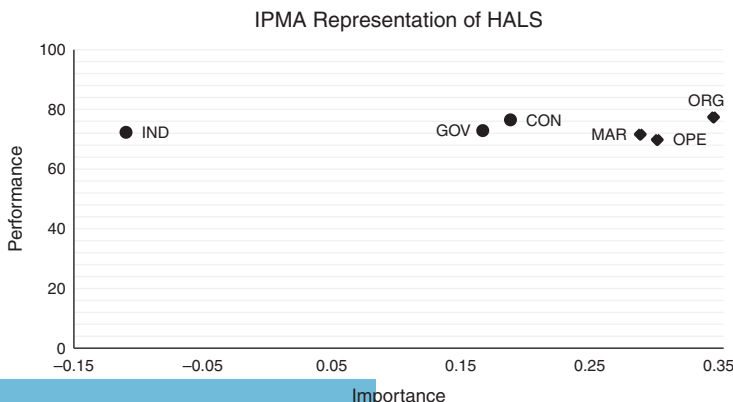


Figure 2.
Importance-performance map analysis

5. Discussion

The purpose of this study is to investigate the reasons behind HFS implementation among food manufacturers in Malaysia. Furthermore, it intended to determine whether the implementation of HFS is driven by proactive initiatives or pressured by reactive measures. Seven hypotheses were proposed and a hypothesized conceptual framework was developed to guide the investigation.

The study has identified that government regulation positively influences HFS implementation. Moreover, this particular finding accentuates governmental roles in instigating food manufacturers to implement HFS even though such accreditation is non-mandatory in Malaysia. It is possible that despite the non-compulsory status, firms are still willing to implement HFS as a means to legitimize their operation. This finding substantiates the notions of Chen *et al.* (2015) and Talib *et al.* (2016a) that although food standards are essentially non-regulatory, firms continue to implement as a means to legitimize their business operations.

Additionally, this study hypothesized that due to the competitiveness in halal food industry in Malaysia, it may pressure firms to implement HFS. However, the proposed reason was found to suggest otherwise as empirical evidence indicates that industry competition negatively influences HFS implementation. This outcome is contrary to that of Escanciano and Santos-Vijande (2014) who found that competitive reasons pressured firms to seek food standard. There are two possible explanations to the opposing outcome. First, despite the intensive industry competition, the high cost of implementation has discouraged firms from pursuing HFS (Zailani *et al.*, 2015). Second, regardless of the competition, HFS exercise is regarded as an industry standard operating procedure and a business norm in Malaysia. Therefore, the hypothesized relationship is rejected.

The most obvious finding to emerge from this study is the positive relationship between consumer pressure and HFS implementation. Many scholars hold the view that the need to constantly anticipate consumer demand, maintain consumer confidence and reduce consumer complaints pressured food companies to actively implement food standards. The empirical data from this study supports the work of Fernando *et al.* (2014) that in Malaysia, consumers played a pivotal role in driving standards adoption. This is understandable because HFS symbolizes trust, quality, ethicality and safe consumption.

The investigation on organization's commitment has shown that it positively influences HFS implementation. This finding emphasizes the commitment synergy from the employees and managers to constantly maintain safe and quality productions and outputs, while simultaneously protect halal integrity, drive the commitment to implement HFS. Furthermore, as the study took place in Malaysia, where Islam is predominant, it is likely that religious belief has heightened halal awareness (Ambali and Bakar, 2014). This awareness may lead to HFS implementation. In this regard, this result is aligned with the findings of Marzuki *et al.* (2012) who observed that halal is a religious obligation and it may have reciprocation effects either now or hereafter.

Another hypothesized relationship in this study is the positive relation between operation improvement dedication and HFS implementation. Statistical analysis has proven the association. This signifies that the commitment and aspiration to improve internal operation are motivating food manufacturers in Malaysia to implement HFS. Such inclination is obvious because HFS is fundamentally a standardized guideline that instructs and informs food manufacturers on the best practices of sourcing, producing, distributing and marketing of halal food products. By implementing HFS, a firm could potentially improve its internal operation and simultaneously increase production quantity and quality. These positive outcomes certainly explain the internal dedication to implement HFS.

This study also proposed and proved that marketing factor, particularly one that concerns with a firm's marketing functions, positively influences HFS implementation.

The result matches with previous research works. For instance, the recognition of halal as a strategic management practice (Wilson and Liu, 2010) has advanced the understanding of HFS as a strategic marketing tool utilized on various marketing functions (Talib *et al.*, 2015). Based on the empirical evidence, this study signifies that with the need to constantly grow through market share expansion and increasing consumer base, it is likely that food manufacturers in Malaysia envisioned HFS as a mechanism to boost their marketing presence amongst business customers and final consumers. The relation between image and reputation and HFS implementation is coherent considering the positive perceptions associated with halal.

The investigation on the approach of HFS implementation has shown that food manufacturers in Malaysia are proactive rather than reactive. In other words, the pursuit of HFS is internally motivated. Furthermore, this finding indicates that firms adopt an offensive and anticipatory strategy rather than a reactive and defensive approach. Additionally, this gives the impression that maintaining safety and quality while simultaneously observing halal practices and safeguarding halal integrity are prevalent within the Malaysian halal food industry. Taken together, the finding supports previous research that proactive initiative outweighs reactive approach (Alonso-Almeida *et al.*, 2012; Escanciano and Santos-Vijande, 2014; Rubio-Andrada *et al.*, 2011).

6. Conclusions

A key strength of this study is its ability to address the reasons along with demonstrating the proactive approach of HFS implementation. Moreover, this research extends the knowledge about HFS. The study argues that although HFS is commonly assumed to indicate Muslim food or ritually slaughtered meat, however, interestingly, it is a standard guideline implemented to preserve the safety, quality and integrity of halal food.

Additionally, this research could have several practical applications. First, the knowledge from this research could encourage non-certified firms to implement HFS and entice halal-certified firms to remain certified. Considering the expanding and highly lucrative halal industry, this research guides managers toward adopting a better strategy. Managers should prioritize internal factors and resources for a more sustainable and positive implication.

Although this study focuses on food manufacturers, the findings may enlighten consumers as well. Consumers now have valuable information that they are a critical aspect of HFS implementation. In addition, the study proves that the pursuit of HFS is not solely for-profit, but a balanced approach based on safety, quality and marketing motives.

For policy makers, the findings of this study offer valuable information on understanding the factors motivating firms to implement HFS. For instance, they should focus on adjusting the policies and regulations in order to motivate more firms to implement HFS. Furthermore, given that industry competition does not stimulate standard adoption, perhaps it is time to make HFS implementation compulsory. Such an approach would not only benefit the industry, it could also provide better and safer halal food products to the consumers.

Being limited to the MS1500, the information from this research must be interpreted with caution as reasons for implementation may vary depending on a firm's size of operation, financial capacity, target markets and geographical locations. Hence, it is recommended that future research should include controlling variables to generate a more conducive finding.

Since the study examined food manufacturing companies in Malaysia, the findings may not represent a true reflection of the industry. The paper argues that as food companies worldwide are striving for HFS, the findings from a Muslim-dominant country might not be applicable to the non-Muslim countries. Therefore, further investigation and experimentation on HFS implementation is needed in other countries. Nevertheless, the present research provides a solid framework and platform for future studies in HFS.

Note

1. Due to word count restriction, the detailed version of the questionnaire is available upon request.

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