ADOPTION OF HALAL STANDARD IN MALAYSIAN FOOD INDUSTRY: A CASE OF SMALL AND MEDIUM ENTERPRISES

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ABSTRACT: The Halal industry has now expanded well beyond the food sector, further widening the economic potentials for Halal products. However, most of the SMEs are still reluctant to apply Halal standard (HS) and not seriously picture significance the power of Halal to gain competitive in the market. Thus, the aim of this study is to identify and analyse the adoption factors that motivate food manufacturers to adopt HS. A total 183 food manufactures certified by Halal take the survey of the study. The survey data were recorded using 5-points questionnaire. By conducting exploratory factor analysis, the findings yield that compatibility and perceived benefits are two factors grouped by technological factor. Halal integrity, Halal awareness, top management support, expected business benefits, understanding the practices and organisation readiness are six factors grouped by organisational factor. Lastly, Halal market demand, consumer pressure, competitive pressure and government support are four factors grouped by environmental factors. The paper includes implications for the halal food industry, whereby the adoption of HS will contribute to the business benefits to create a more competitive advantage to the industry.

KEYWORDS: *Halal; Small and Medium Enterprises; Exploratory Factor Analysis*

1.0   INTRODUCTION

Small and medium enterprises (SMEs) are not just perceived as the foundation of a nation's economy, yet they additionally fill in as an impetus to advance a fair and economic development to the nation's gross national product. In the meantime, food industry business has made open doors for interests in the extension of the market and the improvement of sustenance products and the Malaysian food industry particularly the SMEs. Therefore, SMEs should grasp this opportunity [1]. This scenario provides an opportunity for local SMEs to increase efforts to highlight the Halal standard (HS) among SMEs because the industry is growing rapidly in local and global realms. SMEs food industry in Malaysia been dominated by SMEs, yet, most of them are still reluctant to apply for Halal certification [2-3]. Additionally, SMEs halal players not truly picture the importance of Halal and its capacity to win over to consumers in which even Malaysia External Trade Development Corporation urges Halal business people to use innovation to improve profitability and quality. Therefore, the aim of this study is to identify and analyse the adoption factors that motivate food manufacturers to adopt HS.

The paper is organized as follows. First, the theoretical context is provided. Then, the research methodology was explained. In the fourth section, we present the results and discuss them. Conclusions are described at the end of the paper.

2.0   CONTEXT OF THE STUDY

Azmi et al. [4] and Ngah et al. [2] determined the behavioural elements of the organisation for the adoption factor of halal certification using the Technological-Organizational-Environmental (TOE) framework. The study found out several possible adoption factors could motivate food manufacturer to adopt halal. Ngah et al. [2] discovered organisational readiness, customer pressure, and perceived benefits have significantly related with intention to adopt halal warehousing services and these elements have been identified as the drivers of adoption. Meanwhile, Malaysian practices of halal adoption were recognized by technology, environment, and organisation perspective that perceived by players to adopt halal [4]. Figure 1 shows the adaptive theoretical framework represented in Ngah et al. [2] and Azmi et al. [4] studies.

There is an extension of academic literature about the halal industry although only a few studies encompass the issue of SMEs and the

perception of factors that motivate them to adopt halal. Therefore, we made an attempt to fill this research gap. In connection with this, the following research questions were set:

Q1 *Which factors could be perceived as technological ones and what is their influence on SMEs motivation to adopt halal?*
Q2 *Which factors could be perceived as organizational ones and what is their influence on SMEs motivation to adopt halal?*
Q3 *Which factors could be perceived as environmental ones and what is their influence on SMEs motivation to adopt halal?*
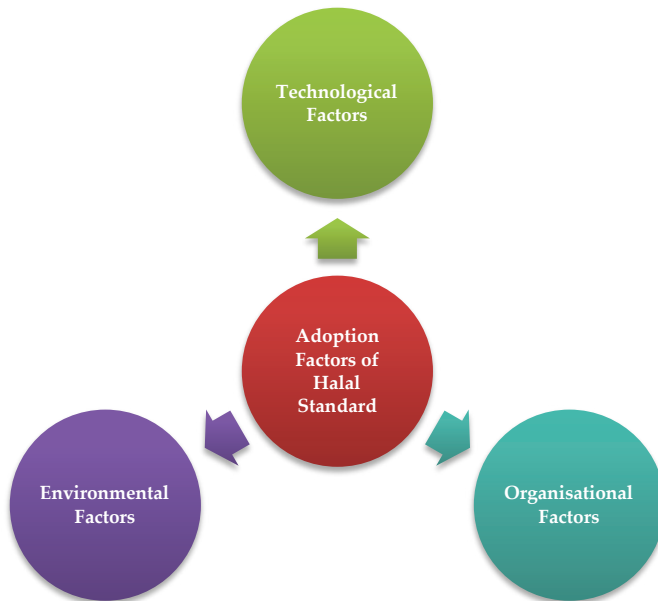

Figure 1: Theoretical framework

3.0   RESEARCH METHODOLOGY

3.1   Construct of the Instruments

The study operationalized quantitative approach by utilizing survey questionnaires to obtain statistical information from halal food manufactures in Malaysia. The study used multiple-choice questions to obtain demographic profile. The study developed a questionnaire by using 36 items designed by this study and adapted from previous study. The item was reviewed by two specialists who had proficient in this field. The items from expert view are tested using a 5-points Likert scale in which 1 = strongly disagree and 5 = strongly agree Table 1 shows the design of the questionnaire.

Table 1: The design of questionnaire

Technological factors	
Compatibility	References
Item 1: *The business is probably to adopt new innovation on the process of the product.* Item 2: *Production proses of my company have aligned to HS requirement.* Item 3: *Procedures related to HS is suitable with my company's existing production practices.*	[5–7]
Perceived Benefits	
Item 4: *We feel our production process will improve by adopting HS.* Item 5: *We feel market share will increase by adopting HS.* Item 6: *We feel the quality of the product will improve by adopting HS.*	[5–7]
Organisational Factors	
Management support	
Item 7: *In order to gain competitive advantage, top management is likely interested adopting HS in the business.* Item 8: *To support and adopting HS, monetary budget were considered by top management.* Item 9: *We feel that our top management is truly concerned about the importance over adopting HS.*	[7-8]
Organisational readiness	
Item 10: *Our company ready for new policies and practices in production (HS).* Item 11: *Our company ready to understand the important of policies and practices of HS.* Item 12: *To adopting HS, our company is ready to re-align companies 'policies and strategy in order achieve business objectives.*	[9-10]
Understanding the HS practice	
Item 13: *Stakeholders in our company fully understand the circular of HS.* Item 14: *Stakeholders in our company understands HS policies and practices to adopt in the business production.* Item 15: *Stakeholders in our company understands the legal aspects to ensure halal practices are done according to Sharia principles required by regulatory authority (such as JAKIM).*	[11]
Halal awareness	
Item 16: *My company intends to adopt HS due to increasing consumer's awareness of halal products.* Item 17: *My company intends to adopt HS because we aware that Halal emphasised the aspects of hygiene, sanitation and safety.* Item 18: *My company aware that halal concept triggers Muslim consumers to preferably consume product based on Sharia principles.*	[12-13]
Halal integrity	
Item 19: *My company intends to adopt HS because halal emphasised the aspects of religiosity and morality in the business.* Item 20: *My company believed by adopting halal can builds trust towards stakeholders.* Item 21: *Halal product has positive relationship with consumer needs.*	[10, 12-13]
Expected business benefits	
Item 22: *My company intends t to adopt HS because it can give more profits to the business.* Item 23: *My company intends to adopt HS because it can give the competitive advantage of the business.* Item 24: *My company intends to adopt HS because it can sustain my business.*	[10,12-13]

Environmental factors	
Government support	
Item 25: *My company intends to adopt HS because government provides financial support.* Item 26: *My company intends to adopt HS because government provides enough available infrastructures.* Item 27: *My company intends to adopt HS because government has appropriately support the Halal business.*	[6, 13]
Competitive pressure	
Item 28: *My company intends to adopt HS because we do not want to lose customers to our competitors.* Item 29: *My company intends to adopt HS because we want to compete in the existing marketplace.* Item 30: *My company intends to adopt HS because we believed competitors can create competitive advantage environment to sustain our business.*	[6, 13]
Consumer pressure	
Item 31: *My company intends to adopt HS because we believed halal products brings confident to consumers because the halal food fulfils the hygiene, food safety and sanitation.* Item 32: *My company intends to adopt HS because we believed the consumers require our operation based on halal requirement.* Item 33: *Believing perception leads to attitudes of the consumers.*	[6, 13]
Market orientation	
Item 34: *My company intends to adopt HS due to high demand of halal products.* Item 35: *My company intends to adopt HS because of the halal market has a high prospect in the global market and it's a wide grow.* Item 36: *We believed the Muslim market of halal emphasise certified product by JAKIM.*	[6, 13]

3.2   Data Analysis Methods

The study uses Exploratory Factor Analysis (EFA) to assess the dimensionality of the scale. The purpose of EFA is to minimize a large of parameters to a smaller set of underlying factors which summarize and categorize in the set of parameters [14]. Moreover, Kaiser–Meyer–Olkin - measure of sampling adequacy (KMO-MSA) and Bartlett's test of sphericity should be used to evaluate the appropriateness of sample sizes [15]. The index ranges of KMO from 0 to 1, with value 0.50 is considered appropriate for factor analysis, and significant value is less than 0.05 for Bartlett's test of sphericity [16-17]. Meanwhile, α (Cronbach Alpha) value is accepted when the coefficient is greater than 0.60 or the value greater than 0.70 is more preferable to show reliability for the measurement [18].

For structuring the factor, the study must extract factors to analyse the sufficiency of the factor loading. The sufficiency of the factor loading is depending on number of sample size in the study. A total of 183 sample size of the study are utilises for the analysis, therefore the sufficiency

value for factor loading is above 0.45. According to Hair et al. [16], significant factor loading should be 0.45 for sample size above 150.

The most commonly used extraction methods is principal component analysis (PCA) [17, 19, 20]. PCA's key advantages are its low noise sensitively, the decreased requirement for increased efficiency and, capacity and memory because the process takes place in smaller dimensions [21]. Pett et al. [22] suggested using PCA in establishing preliminary solutions in EFA. Meanwhile, the rotation method is a technique used to decide the number of factors that might be related to more than one factor. According to Costello and Osborne [23], orthogonal rotation produces uncorrelated structures, whereas oblique rotation produces a correlated factor which is often seen as a more accurate result. The aim of rotation to provide a simple description of outcomes and produce a solution that is more parsimonious without paying attention to any rotation method [16]. Thus, to construct 36 items, the study performed PCA with varimax rotation to test the validity of the variables.

4.0   RESULTS AND DISCUSSION

4.1   Analysis of Technological Factors

Table 2 shows the analysis of six items with the 183 sample size, it resulted KMO-MSA value was 0.905. Therefore, the value of technology factors is accepted. The analysis also shows the result of the reliability test. The first factor was 0.889 and the second factor was 0.807. This value is accepted, indicating reliability for this measurement. EFA revealed two factors which collectively explained 68.37% of the variance. Factor 1 with eigenvalue of 2.29 captured 3 items that accounted for 37.18% of the variance. Factor 2 with eigenvalue of 1.80 also had three items. It was accounted for 31.19 of the variance. Meanwhile, the overall items revealed that the factor loading was above 0.45 as illustrated in Table 3. The loaded items show good factor loadings, ranging from 0.799 to 0.880 for factor 1 and 0.664 to 0.865 for factor 2.

Collectively, three items in factor 1 described "compatibility". This factor was the most influential in determining the respondents' perception intends to adopt HS (based on eigenvalue and percentage of variance). Item 1 shows the highest factor loading that indicates by adopting HS is a new process in their business brings them compatible for their production in the contexts of technology. Factor 2 was labelled as "perceived benefits". Item 6 indicates the highest factor loading

whereby the company adopts HS believed will improve the quality of the products.

Table 2: Analysis of KMO-MSA, α and total variance

Analysis of Statistic	Value
α of factor 1 (compatibility)	0.889
α of factor 2 (perceived benefits)	0.807
Eigenvalue of factor 1 (compatibility)	2.298
Eigenvalue of factor 2 (perceived benefits)	1.804
% of Cumulative Variance for both factors	68.37%
No. of items	6
KMO-MSA	0.905
Bartlett's test of sphericity App. X^2	461.071
df	15
Significance (p-value)	0.000

Table 3: EFA for technological factors

Items Extracted	Factor Loading	
	1	2
Item 1	0.880	
Item 3	0.805	
Item 2	0.799	
Item 6		0.865
Item 4		0.816
Item 5		0.664

4.2   Analysis of Organisational Factors

Table 4 shows the analysis of eighteen items, it resulted KMO-MSA value was 0.920. Therefore, the value of organisation factors is accepted. The analysis also shows the result of the reliability test for six factors grouped under this organisation factors. First factor was 0.869, followed by 0.836 for second factor 0.836 for third factor, 0.830 for fourth factor 0.819 for fifth and 0.738 for sixth factors. This value was accepted, indicating reliability for this measurement. EFA revealed six factors with collectively explained 76.20% of the variance. Factor 1 with eigenvalue of 3.83, captured 3 items that accounted for 17.05% of the variance. Factor 2 with eigenvalue of 2.42, captured 3 items that accounted for 14.60% of the variance. Factor 3 with an eigenvalue of 1.85 also had three items. It also accounted for 31.19 of the variance. Factor 4 also had three items with an eigenvalue of 1.77. It accounted for 10.20% of the variance. Factor 5 had three items with an eigenvalue of 1.56. It accounted for 9.84 of the variance. Factor 6 with an eigenvalue of 1.48 also had three items. It accounted for 8.95 percent of the variance. Meanwhile, the overall items revealed that factors' loading was above 0.45 as illustrated in table 5. The loaded items show good factor loadings, ranging from 0.755 to 0.810 for factor 1, 0.721 to 0.873

for factor 2, 0.730 to 0.786 for factor 3, 0.790 to 0.862 for factor 4, 0.744 to 0.885 for factor 5 and 0.755 to 0.850 for factor 6.

Items in factor 1 described the "Halal integrity". This factor was the most influential in determining the respondents' perception intends to adopt HS (based on eigenvalue and percentage of variance). Item 1 shows the highest factor loading that indicates the halal product has positive relationship with consumer needs. Collectively, three items in factor 2 described "Halal awareness". Item 16 shows the highest factor loading that indicates the company intends to adopt HS due to increasing consumer's awareness of halal products. Factor 3 was labelled as "top management support". Item 7 in this factor shows highest factor loading that indicates the company will gain competitive advantage by adopting HS. Factor 4 described "Expected business benefits". Item 24 shows the highest factor loading that indicates the company intends to adopt HS because it can sustain the business. Factor 5 was labelled as "understanding the practices of Halal standard". The highest factor loading for this factor was item 14 indicated the stakeholders in the company understand HS policies and practices. Lastly, factor 6 described "organisational readiness". Item 10 shows the highest factor loading indicates the company ready for new policies and practices (HS) in business production.

Table 4: Analysis of KMO-MSA, α and total variance

Analysis of Statistic	Value
α of factor 1 (Halal integrity)	0.869
α of factor 2 (Halal awareness)	0.836
α of factor 3 (Management support)	0.836
α of factor 4 (Expected business benefits)	0.830
α of factor 5 (Understanding the practices of Halal)	0.819
α of factor 6 (Organisational readiness)	0.838
Eigenvalue of factor 1 (Halal integrity)	3.831
Eigenvalue of factor 2 (Halal awareness)	2.424
Eigenvalue of factor 3 (Management support)	1.849
Eigenvalue of factor 4 (Expected business benefits)	1.769
Eigenvalue of factor 5 (Understanding the practices of Halal)	1.563
Eigenvalue of factor 6 (Organisational readiness)	1.481
% of Cumulative Variance for six factors	76.20
No. of items	18
KMO-MSA	0.920
Bartlett's test of sphericity App. X^2	1982.587
df	153
Significance (p-value)	0.000

Table 5: EFA for organizational factors

Items Extracted	Factor Loading					
	1	2	3	4	5	6
Item 21	0.810					
Item 19	0.795					
Item 20	0.755					
Item 16		0.873				
Item 18		0.825				
Item 17		0.721				
Item 7			0.786			
Item 9			0.733			
Item 8			0.730			
Item 24				0.862		
Item 22				0.859		
Item 23				0.790		
Item 14					0.885	
Item 13					0.798	
Item 15					0.744	
Item 10						0.850
Item 12						0.809
Item 11						0.755

4.3 Analysis of Environmental Factors

Table 6 shows the analysis of twelve items, it resulted KMO-MSA value was 0.815. Therefore, the value of environment factors is accepted. The analysis also shows the result of the reliability test for four factors grouped under this organisation factors. First factor was 0.832, followed by 0.753 for second factor, 0.844 for third factor and 0.833 for fourth factor. These values were accepted, indicating reliability for this measurement. EFA revealed four factors which collectively explained 72.48% of the variance. Factor 1 with eigenvalue of 5.08, captured 3 items that accounted for 22.21% of the variance. Factor 2 with eigenvalue of 1.62, captured 3 items that accounted for 19.32% of the variance. Factor 3 with an eigenvalue of 1.99 also had three items. It accounted for 17.39 of the variance. For factor 4 with an eigenvalue of 1.89 also had three items. It accounted for 13.55 percent of the variance. Meanwhile, the overall items revealed that the factor loading was above 0.45 as illustrated in Table 7. The loaded items show good factor loadings, ranging from 0.700 to 0.910 for factor 1, 0.646 to 0.803 for factor 2, 0.728 to 0.848 for factor 3 and 0.705 to 0.810 for factor 4.

Items in factor 1 described "Halal market demand". This factor was the most influential in determining the respondents' perception intends to adopt HS (based on eigenvalue and percentage of variance). Item 36 show the highest factor loading that indicates the company believed the Muslim market of halal emphasise certified product by JAKIM. Collectively, three items in factor 2 described "Consumer pressure".

Item 31 shows the highest factor loading that indicates the company intends to adopt HS because they believed halal products brought confident to consumers due to the halal food fulfilled the hygiene, food safety and sanitation. Factor 3 was labelled as "competitive pressure". The highest factor loading for this factor was item 29 indicated the company intended to adopt HS because they wanted to compete in the existing marketplace. Lastly, factor 4 described "government support". Item 25 shows the highest factor loading indicates the company intends to adopt HS because government provides financial support.

Table 6: Analysis of KMO-MSA, α and total variance

Analysis of Statistic	Value
α of factor 1 (Halal market demand)	0.832
α of factor 2 (Consumer pressure)	0.753
α of factor 3 (Competitive pressure)	0.844
α of factor 4 (Government support)	0.833
Eigenvalue of factor 1 (Halal market demand)	5.082
Eigenvalue of factor 2 (Consumer pressure)	1.625
Eigenvalue of factor 3 (Competitive pressure)	1.995
Eigenvalue of factor 4 (Government support)	1.895
% of Cumulative Variance for six factors	72.48
No. of items	12
KMO-MSA	0.815
Bartlett's test of sphericity App. X^2	1000.732
df	66
Significance (p-value)	0.000

Table 7: EFA for environmental factors

Items Extracted	Factor Loading			
	1	2	3	4
Item 36	0.910			
Item 34	0.868			
Item 35	0.700			
Item 31		0.803		
Item 32		0.745		
Item 33		0.646		
Item 29			0.848	
Item 28			0.793	
Item 30			0.728	
Item 25				0.810
Item 26				0.799
Item 27				0.705

5.0 CONCLUSION

The main objective of this study is to identify and analyse the adoption factors that motivate food manufacturers to adopt HS. The study reviewed comprehensively the halal management literature to

conceptualise the framework of the study as illustrated in figure 1. Thus, the study revealed three factors of adoption of HS which is a technological factor, organisational factor, and environmental factor. The study performed EFA to analyse survey data in order to prove statistically of the survey data. This enabled to answer the following research questions.

Q1: Which factors could be perceived as technological ones and what is their influence on SMEs motivation to adopt halal?
The findings yield that *compatibility* and *perceived benefits* are two factors grouped by technological.

Q2: Which factors could be perceived as organizational ones and what is their influence on SMEs motivation to adopt halal?
Halal Integrity, Halal awareness, top management support, expected business benefits, understanding the practices and organisation readiness are six factors grouped by organisational context.

Q3: Which factors could be perceived as environmental ones and what is their influence on SMEs motivation to adopt halal?
Halal market demand, consumer pressure, competitive pressure and government support are four factors grouped by environmental context.

The paper contributes to the academic literature about the behaviour of companies in the area of SMEs ability of adoption to external factors. Moreover, it is important for the existing studies of impact evaluation. The results of the paper could also be interesting for officials. It shows that factors in technology, organisation and environment study lead industry players to adopt halal practices in their business activities to get a more competitive advantage in the halal industry. There are also some constraints of the paper. First of all, the sample is quite small so the results are not representative of all SMEs in the Malaysian food industry. Moreover, the statistical test included EFA while other methods could give a more in-depth view. That is the reason to undertake the next research on the subject in the future. They could encompass more SMEs and new statistical tests could be implemented.

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