International Food Research Journal 25(Suppl. 1): S57-S62 (December 2018)
Journal homepage: *http://www.ifrj.upm.edu.my*

Halal practices integrity and halal supply chain trust in Malaysian halal food supply chain

*Kamisah, S., Mokhtar, A. and Hafsah, A.

Faculty of Business and Accountancy, Universiti Selangor, Jalan Zirkon A 7/A, Seksyen 7, 40000 Shah Alam, Selangor, Malaysia.

Article history

Received: 11 January, 2018
Received in revised form: 3 September, 2018
Accepted: 6 June, 2018

Keywords

Halal practices integrity
Halal supply chain trust
Halal food, Supply chain
Malaysia

Abstract

Halal food industry has grown substantively worldwide in the last few years. It has become increasingly crucial to Muslim consumers due to its safety, hygiene and quality assurance. In Islam, Muslim consumers follow the *Shariah* and the food they consume should be *halalan-thoyyiban*, i.e. lawful or permissible, authentic, wholesome, and safe. In Malaysia, halal food manufacturers should comply with MS1500:2009 in order to obtain halal certification (halal logo). However, there is an increasing number of halal logo misuse cases and halal food's questionable status. In addition, any improper description and inappropriate preparation of halal food has significant impacts unto the demand for halal food and buyers' trust in consuming halal food. Hence, trust is an essential element in food production and it must be upheld along the halal food supply chain by all the parties involved. Given the significant role of trust in halal food production among Muslim consumers, this study aimed at examining the influence of halal practices integrity on halal supply chain trust and supply chain performance. Using a quantitative approach, survey questionnaires were distributed to 212 Malaysian halal food and beverages companies during halal food exhibitions and festivals. Structural Equation Modeling with Partial Least Square was used to analyze the collected data. The findings showed that halal practices integrity is significantly related to halal supply chain trust and supply chain performance. The results revealed that halal supply chain trust is significantly important in enhancing halal practices integrity and supply chain performance. The Malaysian government and various agencies in the halal industry should seriously take part in the development and promotion of halal food products to maintain consumer trust. The findings of this study would give some insights into the halal food supply chain integrity.

Introduction

Nowadays, Muslim consumers are demanding for halal certified products. Halal is an Arabic or Quranic word that is associated with permissible or lawful. The concept of halal is not merely pertaining to the sources of food and beverages, or the use of alcohol. It is actually about the processes and standards that are related to cleanliness, safety and quality assurance (Yusaini *et al*., 2016). Halal certification is a process of certifying that the products produced have met the Islamic dietary guidelines (Riaz and Chaudry, 2004). In Malaysia, the Department of Islamic Development Malaysia (JAKIM) has been entrusted to govern any issues related to halal practices and the production of halal products. To be in line with the implementation of global quality standard such as ISO, JAKIM has embarked on the development of halal assurance system known as MS1500:2009 General Guidelines on the Production, Preparation, Handling, and Storage of Halal Food. The development of the MS1500:2009 standard was based on ISO methodologies and in compliance with other quality standards such as MS1514:2009 and MS1480:2007. This is to ensure that the MS1500:2009 halal standard also addresses issues related to cleanliness, hygiene and food safety aspects of the processing and preparation of halal food.

However, JAKIM has found that claims made by manufacturers that their products are halal are just not good enough (Ngah *et al*., 2015). Many businesses have been found to use confusing statements and halal logo regarding their products and services (Norasekin *et al*., 2018). Besides that, several issues such as detection of pig-DNA and non-compliance to halal requirements have shaken the confidence of Muslim

*Corresponding author.
Email:kamisah@unisel.edu.my

consumers (Kamisah, 2016). These issues show that having halal standard regulation (i.e. MS1500:2009) alone does not guarantee that products are halal at the point of consumption. Effective 1st January 2013, JAKIM has enforced that legal actions will be taken against any businesses involve in the misuse of halal logo or non-compliance with halal certification. This enforcement is implemented on both domestic and imported products.

In Malaysia, sustaining the integrity of halal products have become a priority for the government and the consumers (Sarah *et al*., 2011; Tieman, 2013; Kamisah and Norasekin, 2018). However, there are various obstacles, misconceptions and fallacies in the supply chain with regards to halal practices integrity (HPI). Some manufacturers and suppliers do not realize the particularity of handling halal food processes. The production of halal food needs a very meticulous understanding throughout the supply chain in sustaining the integrity of halal food. Furthermore, it is an obligation for Muslim consumers to have trust or confidence that the goods they consume are halal, hygienic and safe as to comply with Islamic principles (Manzouri *et al*., 2013). For Muslim consumers, trust in halal food relates to the certainty about the process attributes of food processing, handling, and safety of food wholesomeness.

HPI refers to the means of ensuring that the people, process and resources that deliver integrity of halal products are *Shariah*-compliant along the supply chain. HPI requires trust from both buyers and suppliers and the halal supply chain is based on trust (Tieman, 2011). Thus, the elements of HPI can be successfully established through the halal supply chain trust (HSCT) process, which was defined by Morgan and Hunt (1994) as the confidence in an exchange partner's reliability and integrity. Integrity is the platform on which successful performance is built (Palanski and Yammarino, 2011). In addition, trust plays a significant role in inter-firm relationships. It is the desire on the part of each party to maintain a business relationship and to strengthen those relationships (Morgan and Hunt, 1994). According to Rampl *et al*. (2012), trust is an anticipated capacity of the company to satisfy consumer expectations consistently and to avoid any harm to the users. Furthermore, trust facilitates a firm's ability to respond to customers and global market conditions (Petrick and Quinn, 2001). However, HSCT has not been tested in the environment of halal integrity.

According to Marinagi *et al*. (2015), performance measurements are useful diagnostic tools for better decision-making in an organization. In the 1990s, identifying performance evaluation systems was a key concern in measuring supply chain performance which is aligned with corporate strategies (Estampe *et al*., 2013). Qrunfleh and Tarafdar (2014) emphasized that supply chain performance represents the overall efficiency and effectiveness of an organization's performance. In addition, efficiency and effectiveness are also the key indicators measuring supply chain performance to satisfy the consumers (Srinivasan *et al*., 2011). In order to optimize the supply chain of halal food industries, Tieman *et al*. (2012) suggested that new indicators should be included in the performance measurement systems. This helps to ensure that the supply chains are not only efficient but also effective in protecting and sustaining halal integrity and being robust in its supply chain execution. Hence, it is essential to have well-integrated supply chain strategies in the halal food supply chain so as to achieve superior performance in the business.

According to Qrunfleh and Tarafdar (2014), a number of studies have shown that the ability of the supply chain to produce and deliver products in response to customer needs results in superior performance. Previous studies also showed that high-level trust leads to successful supply chain performance (Chen *et al*., 2011). Peters and Karren (2009) emphasized that trust is a significant predictor of performance. The focus of this paper is thus to examine the influence of HPI on HSCT and supply chain performance (SCP) in Malaysian halal food industry. Specifically, this study proposes that given particular halal practices integrity, a specific HSCT would positively mediates the relationship between that halal practices integrity and supply chain performance.

Materials and methods

This study adopted the cross-sectional research design and quantitative research approach. Purposive sampling technique was performed to select a group of target respondents. The respondents were approached during the Malaysian halal food events in between January 2016 and April 2016. Questionnaires were distributed to personnel at the managerial level who were expected to provide a valid and accurate view of their halal business. To ensure a reliable source of information, respondents with sufficient knowledge in halal matters who hold key positions such as executives and managers were chosen.

A seven-point likert scale was used to measure HPI, HSCT and SCP. Many previous studies have used the seven-point scale to measure integrity, trust and SCP. As such, it is considered a valid and appropriate measurement (Chen and Paulraj, 2004; Green *et al*.,

2008). The questionnaire items were adapted from Chen and Paulraj (2004), Wilson and Nielson (2000) and Panayides and Lun (2009). Careful attention was given to the survey questionnaire development process. The development of questionnaire items was based on previous studies of which the content has been validated through pre-testing from experts and academicians. It is followed by identifying the relevant theories that are essential in developing the theoretical framework.

The partial least squares structural equation modelling (PLS-SEM) approach was employed to evaluate the model developed in this study. PLS-SEM is a second-generation multivariate technique which offers novel perspectives on analysis. It has obtained extensive attention as a method of analysis in the past few years (Hair *et al*., 2017). Many researchers have employed PLS-SEM technique since the past 20 years with the aim of minimizing the measurement error (Hair *et al*., 2017). The bootstrapping method (500 resamples) was employed to determine the significance levels for loadings, weights and path coefficients as suggested by Hair *et al*. (2017).

PLS-SEM is suitable for a study when the research objective is on predictive analysis and theory development. PLS-SEM is also considered a robust approach which can analyse data with non-normality distribution and a small sample size (Henseler *et al*., 2009; Hair *et al*., 2011; Hair *et al*., 2012). According to Beebe, Pell and Seasholtz (1998), any non-normal data can be transformed into data that adheres to the central limit theorem as PLS uses the calibration mechanism. Due to that factor, data normality is not a demanded aspect in PLS-SEM approach. Urbach and Ahleman (2010) and Hair *et al*. (2017) recommended that PLS-SEM can accommodate small sample sizes. Hence, PLS-SEM is appropriate for this study due to its relatively small sample size under which only 212 data will be analyzed.

Results

Based on the survey conducted, out of 350 questionnaires distributed only 212 responses were collected. Structural Equation Modeling (SEM) with Partial least squares (PLS) was adopted as the method of estimation of the model. This PLS-SEM approach has gained widespread interest as a method of analysis because it depends less on data normality assumption and is able to solve the problem of small sample size (Hair *et al*., 2017).

Reliability and validity were used in assessing reflective outer models by using PLS-SEM. Composite reliability (CR) was used to evaluate the construct measures' internal consistency reliability. Meanwhile, convergent validity and discriminant validity were used to assess construct validity. Convergent validity is the extent to which a measure correlates positively with the alternative measures of the same construct. Hair *et al*. (2014) suggested that each item should have an outer loading above 0.70, and the average variance extracted (AVE) should be at least 0.50 to support convergent validity of reflective outer models. Table 1 shows that the results have exceeded the recommended values.

Table 1. Measurement model

Constructs	Measurement items	CRa	AVEb
Halal Practices Integrity	COMP3 – COMP6 COOR1 – COOR5 CONT1 – CONT5 COOP1 – COOP5 COMM1 – COMM6	0.963	0.515
Halal Supply Chain Trust	TS1 – TS6 TM1 – TM5 TG1 – TG6	0.952	0.538
Supply Chain Performance	SC1 – SC5	0.897	0.636

[a]Composite Reliability: CR > 0.6 indicates adequate reliability
[b]Average Variance Extracted: AVE ≥ 0.5 indicates convergent validity

Fornell and Larcker's (1981) criterion was employed to assess discriminant validity after confirming the convergent validity by comparing the square-roots of the AVE values with the correlations. The discriminant validity measures the extent to which items can be differentiated among constructs. Hence, the results confirmed that the measures used in this study are distinct and provide adequate discriminant validity as illustrated in Table 2.

Table 2. Discriminant validity

Constructs	1	2	3
1. Halal Practices Integrity	*0.718*		
2. Halal Supply Chain Trust	0.708	*0.733*	
3. Supply Chain Performance	0.496	0.599	*0.798*

Note: Diagonals represent the square root of the AVE, while the off-diagonals represent the correlations

The results of the structural model analysis (Table 3) found that HPI ($\beta = 0.708$, $t = 15.283$, $p < 0.01$) was positively related to HSCT. HSCT ($\beta = 0.460$, $t = 4.889$, $p < 0.01$) was positively related to SCP. HPI ($\beta = 0.492$, $t = 7.807$, $p < 0.01$) was positively related to SCP. At the same time, the mediating effect of HSCT in the HPI-to-SCP relationship was tested. As suggested in the literature, the bootstrapping procedure was used to test the indirect effect. The results showed that indirect effect ($\beta = 0.495$, $p < 0.01$) was significant and there was a mediating effect

Table 3. Significance analysis of direct and indirect effects

	Path Coefficient (β)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
HPI -> HSCT	0.708	0.718	0.046	15.283	0.000***
HPI -> SCPer	0.492	0.489	0.062	7.892	0.000***
HSCT -> SCPer	0.460	0.456	0.094	4.889	0.000***
HPI -> HSCT -> SCPer	0.495	0.498	0.062	7.984	0.000***

***p = 0.01 – statistically significant

in this analysis. The variance accounted for (VAF) was calculated as suggested by Hair *et al*. (2013, 2017) which determine the size of the indirect effect in relation to the total effect. The VAF was 0.50 and was classified as partial mediation.

Discussion

The study aimed to examine the influence of HPI on HSCT and SCP. Several reasons could explain the significant results of HPI on HSCT and SCP. The result showed that HPI is significantly related to HSCT. This finding is consistent with the previous studies by Colquitt *et al*. (2007) and Albrecht (2002) which found that integrity is uniquely related to trust and they control each another. The findings also contributed to increasing the awareness of understanding and adopting systematic HPI process more critically and constantly, as opposed to having it on an ad-hoc basis. All companies, regardless of their size or financial constraint, should manage their HPI thoroughly since it is a key factor in their short and long-term halal business strategies. However, a lack of trust among the supply chain partners will deviate the objective of producing halal food products. The present study also revealed that halal food integrity is the most critical factor which needs to be upheld. Hence, halal food manufacturers should take extra efforts in enhancing the halal food integrity along the supply chain.

The relationship between HSCT and SCP was also found to be significant. This supports the work of Yu and Choi (2014) who concluded that trust has a significant effect on performance. Moreover, trust is considered a delicate but vital source of a sustainable competitive advantage in successful business-to-business and business-to-consumer relationships (Morgan and Hunt, 1994; Panayides and Lun, 2009). This research is aligned with previous studies in establishing the fact that all members in the halal supply chain must pay serious attention to customers' needs and fulfil their expectations so as to obtain and sustain consumers' trust in halal food products.

The findings also indicated that the relationship between HPI and SCP was significant. It is consistent with the previous studies done by Shi and Yu (2013) and Sundram *et al*. (2011). The positive relationship between HPI and SCP confirmed that integrity of each of the partners in the supply chain is crucial in determining the overall performance of the halal food supply chain. One can fully attain the benefits of good supply chain performance only through close collaborative linkages in the entire supply chain (Norasekin and Kamisah, 2018). Consistently, Tieman *et al*. (2012) recommended that the supply chain performance is an overall performance measure which depends on the performances of the individual chain stages. Hence, the elements of HSCT and the ability to understand halal practices by halal food manufacturers are essential in enhancing their SCP in a competitive halal market.

Conclusion

Although the results of this study contribute to further understanding of the existing literature, these findings cannot be generalized due to its small sample size and its confinement to halal food industry, particularly the food and beverages category. The proposed research model can motivate further research in various types of industry to generalize the results. Thus, future studies can explore further on every category of the food industry and other industries such as raw materials and ingredients; poultry, meat and dairy; fast food and premises. Comparisons can also be made among pharmaceutical, cosmetics and healthcare in halal industry.

In addition, the sample size (N = 212) is considered small. As a result, it is recommended that future researchers may explore the subject matter using a much larger sample to allow generalization of the result in the future. Besides, a large sample would also help future researchers to make use of other stronger data analysis. A longitudinal and qualitative study would provide further theoretical details underlying the findings of this study and can warrant a deeper theoretical understanding. Moreover, there is a possibility of the significant contribution of moderating factors such as managerial level and company size. They can act as control variables to

develop the findings more comprehensively in future researches.

Acknowledgement

The authors are thankful to Universiti Selangor for its financial support on this research.

References

Albrecht, S. L. 2002. Perceptions of integrity, competence and trust insenior management as determinants of cynicism toward change. Public Administration & Management: An Interactive Journal 7(4): 320–343.

Beebe, K. R., Pell, R. J. and Seasholtz, M. B. 1998. Chemometrics: A Practical Guide. New York: Wiley.

Chen, I. J. and Paulraj, A. 2004. Towards a theory of supply chain management: the constructs and measurements. Journal of Operations Management 22(2): 119–150.

Chen, J. V., Yen, D. C., Rajkumar, T. M. and Tomochko, N. A. 2011. The antecedent factors on trust and commitment in supply chain relationships. Computer Standards and Interfaces 33(3): 262–270.

Chen, W. 2013. The effects of different types of trust on consumer perceptions of food safety: An empirical study of consumers in Beijing Municipality, China. China Agricultural Economic Review 5(1): 43–65.

Colquitt, J. A, Scott, B. A. and LePine, J. A. 2007. Trust, trustworthiness, and trust propensity: a meta-analytic test of their unique relationships with risk taking and job performance. The Journal of Applied Psychology 92(4): 909–27.

Estampe, D., Lamouri, S., Paris, J.-L. and Brahim-Djelloul, S. 2013. A framework for analysing supply chain performance evaluation models. International Journal of Production Economics 142(2): 247–258.

Fornell, C. and Larcker, D. F. 1981. Evaluating structural equation models with unobservable variables and measurement errors. Journal of Marketing Research 18: 39–50.

Green, J. K. W., Whitten, D. and Inman, R. A. 2008. The impact of logistics performance on organizational performance in a supply chain context. Supply Chain Management: An International Journal 13(4): 317–327.

Hair, J. F., Ringle, C. M. and Sarstedt, M. 2013. Editorial Partial Least Squares Structural Equation Modeling : Rigorous Applications, Better Results and Higher Acceptance. Long Range Planning 46: 1–12.

Hair, J. F., Ringle, C. M. and Sarstedt, M. 2011. PLS-SEM : Indeed a Silver Bullet. Journal of Marketing Theory and Practice 19(2): 139–151.

Hair, J. F., Sarstedt, M., Ringle, C. M. and Mena, J. A. 2012. An assessment of the use of partial least squares structural equation modeling in marketing research. Journal of the Academy of Marketing Science 40(3): 414–433.

Hair, Jr., J. F., Hult, G. T. M., Ringle, C. M. and Sarstedt, M. 2017. A Primer on Partial Least Squares Structural Equation Modeling, 2nd ed. Thousand Oaks, CA: SAGE Publication Inc.

Hair, Jr., J. F., Sarstedt, M., Hopkins, L. and Kuppelwieser, V. G. 2014. Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. European Business Review 26(2): 106–121.

Henseler, J., Ringle, C. M. and Sinkovics, R. R. 2009. The use of partial least squares path modeling in international marketing. In Sinkovics, R. R. and Ghauri, P. N. (ed.). New Challenges to International Marketing (Advances in International Marketing, Volume 20), p. 277 - 319. United Kingdom: Emerald Group Publishing Limited.

Kamisah, S. 2016. Enhancing Halal Practices Integrity in the Malaysian Halal food industry. Australian Journal of Basic and Applied Sciences 10(11): 221–227.

Kamisah, S. and Norasekin, A. R. 2018. The Role of Supplier, Top Management and Government in Halal Practices Integrity of Malaysian Food Business. International Journal of Asian Social Science 8(8): 549–559.

Manzouri, M., Nizam, M. A. R., Nizaroyani, S. and Rosmawati, C. C. M. Z. 2013. Lean supply chain practices in the Halal food. International Journal of Lean Six Sigma 4(4): 389–408.

Marinagi, C., Trivellas, P. and Reklitis, P. 2015. Information quality and supply chain performance: The mediating role of information sharing. Procedia - Social and Behavioral Sciences 175: 473–479.

Mayer, R. C., Davis, J. H. and Schoorman, F. D. 1995. An Integrative Model of Organizational Trust. The Academy of Management Review 20(3): 709–734.

Morgan, R. M. and Hunt, S. D. 1994. Theory of Relationship Marketing. Journal of Marketing 58(3): 20–38.

Ngah, A. H., Zainuddin, Y. and Thurasamy, R. 2015. Barriers and enablers in adopting of Halal warehousing. Journal of Islamic Marketing 6(3): 354–376.

Norasekin, A. R., Kamisah, S. and Jamil, B. 2018. Relationship between Halal Traceability System Adoptions on Halal Food Supply Chain Integrity and Performance. International Journal of Asian Social Science, Asian Economic and Social Society 8(8): 569–579.

Palanski, M. E. and Yammarino, F. J. 2011. Impact of behavioral integrity on follower job performance: A three-study examination. The Leadership Quarterly 22(4): 765–786.

Panayides, P. M. and Lun, V. Y. H. 2009. The impact of trust on innovativeness and supply chain performance. International Journal of Production Economics 122(1): 35–46.

Peters, L. and Karren, R. J. 2009. An Examination of the Roles of Trust and Functional Diversity on Virtual Team Performance Ratings. Group & Organization Management 34(4): 479–504.

Petrick, J. A. and Quinn, J. F. 2001. The challenge of leadership accountability for integrity capacity as a strategic asset. Journal of Business Ethics 34(3/4): 331–343.

Qrunfleh, S. and Tarafdar, M. 2014. Supply chain information systems strategy: Impacts on supply chain performance and firm performance. International Journal of Production Economics 147(PART B): 340–350.

Rampl, L. V., Eberhardt, T., Schütte, R. and Kenning, P. 2012. Consumer trust in food retailers: conceptual framework and empirical evidence. International Journal of Retail & Distribution Management 40(4): 254–272.

Riaz, M. N. and Chaudry, M. M. 2004. Halal food production. Boca Raton, FL: CRC Press.

Sarah, S. M. B., Iskandar, M. I. and Ishak, M. D. 2011. Tracking and Tracing Technology for Halal Product Integrity over the Supply Chain. In Proceedings of the 2011 International Conference on Electrical Engineering and Informatics. Bandung, Indonesia: Institut Teknologi Bandung.

Shi, M. and Yu, W. 2013. Supply chain management and financial performance: literature review and future directions. International Journal of Operations & Production Management 33(10): 1283-1317.

Srinivasan, M., Mukherjee, D. and Gaur, A. S. 2011. Buyer–supplier partnership quality and supply chain performance: Moderating role of risks, and environmental uncertainty. European Management Journal 29(4): 260–271.

Sundram, V. P. K., Ibrahim, A. R. and Govindaraju, V. G. R. C. 2011. Supply chain management practices in the electronics industry in Malaysia: Consequences for supply chain performance. Benchmarking: An International Journal 18(6): 834–855.

Svensson, G. 2001. Perceived trust towards suppliers and customers in supply chains of the Swedish automotive industry. International Journal of Physical Distribution & Logistics Management 31(9): 647–662.

Tieman, M. 2011. The application of Halal in supply chain management: in-depth interviews. Journal of Islamic Marketing 2(2): 186–195.

Tieman, M. 2013. Establishing The Principles In Halal Logistics. Journal of Emerging Economies and Islamic Research 1(1): 1–13.

Tieman, M., Vorst, J. G. A. J. van der, and Ghazali, M. C. 2012. Principles in halal supply chain management. Journal of Islamic Marketing 3(3): 217–243.

Urbach, N. and F. Ahlemann. 2010. Structural equation modeling in information systems research using partial least squares structural equation. Journal of Information Technology Theory and Application 11(2): 5-40.

Wilson, E. J. and Nielson, C. C. 2000. Cooperation and continuity in strategic business relationships. Journal of Business-to-Business Marketing 8(1): 1–24.

Yu, Y. and Choi, Y. 2014. Corporate social responsibility and firm performance through the mediating effect of organizational trust in Chinese firms. Chinese Management Studies 8(4): 557–592.

Yusaini, H., M., Abd Rahman, A. R., Azanizawati, M. and Mohd Ghazli, H. 2016. Halal Traceability in Enhancing Halal Integrity for Food Industry in Malaysia – A Review. International Research Journal of Engineering and Technology 3(3): 68–74.