

## **THE INFLUENCE OF TOTAL QUALITY MANAGEMENT (TQM) PRACTICES TOWARDS ASSURING TRUST ATTRIBUTES OF FOOD PRODUCTS WITH HALAL CERTIFICATION**

**Rizuwan Abu Karim<sup>1</sup> & Nolila Mohd. Nawi<sup>2</sup>**

<sup>1</sup> Lecturer at Faculty Business Management, Universiti Teknologi Mara, Malacca City Campus, Malaysia.

<sup>2</sup> Lecturer at Department of Agribusiness & Information System, Faculty of Agriculture, Universiti Putra Malaysia, Malaysia.

### **Abstract**

In relation to the cases of food products with halal certification which are non Shariah compliance as reported by the mass media, this study investigates the influence of multidimensionality of total quality management (TQM) practices (i.e. strategic planning, information management, top management, process management, human resources and customer focus) towards assuring trust attributes of such products. A total of 600 questionnaires were distributed to the certified halal food manufacturing SMEs in Selangor, Kuala Lumpur, Negeri Sembilan, Melaka and Johor with 200 returned responses. The findings revealed that information management, top management and process management are three dimensions that can assure trust attributes of certified halal food products. Meanwhile, strategic planning, human resources and customer focus are not significant to trust.

**Keywords:** Strategic planning, Information management, Top management, Process management, Human resources, Customer focus, Trust

## **PENGARUH AMALAN PENGURUSAN KUALITI MENYELURUH (TQM) KE ARAH MENJAMIN KEPERCAYAAN PRODUK MAKANAN YANG MENDAPAT PENSIJILAN HALAL**

### **Abstrak**

Pihak media kerap mempersoalkan status produk makanan yang mendapat sijil pengesahan halal samada ianya telah memenuhi kehendak syariat Islam atau tidak. Rentetan isu ini, satu kajian berkaitan pengaruh diantara kepelbagaian dimensi amalan pengurusan kualiti secara menyeluruh (TQM) (iaitu perancangan strategik, pengurusan maklumat, pengurusan tertinggi, pengurusan proses, sumber manusia dan tumpuan pelanggan) terhadap kepercayaan makanan halal dijalankan. Pengumpulan data dibuat terhadap 600 pengeluar makanan IKS di Selangor, Kuala Lumpur, Negeri Sembilan, Melaka dan Johor Baharu. Hanya 200 pengeluar makanan yang terlibat. Hasil kajian menunjukkan bahawa terdapat perkaitan positif yang signifikan antara pengurusan maklumat, pengurusan tertinggi, dan pengurusan proses dengan elemen kepercayaan. Walaubagaimanapun, perancangan strategik, sumber manusia dan tumpuan pelanggan didapati tidak mempunyai sebarang perkaitan dengan elemen kepercayaan.

**Katakunci:** Perancangan strategik, Pengurusan maklumat, Pengurusan tertinggi, Pengurusan proses, Sumber manusia, Tumpuan pelanggan, Kepercayaan

### **INTRODUCTION**

TQM is the fundamental for achieving high quality products (Fotopoulos and Psomas, 2009; Arumugam, Keng-Boon Ooi and Tuck-Chee Fong, 2008; Agus, 2005; Prajogo and Sohal, 2004). At the same time, some researchers also have pointed out that the application of TQM practices by food manufacturer can ensure safety of food products (Abdul Talib, Mohd Ali and Fazli Idris, 2014). However, a review of the Malaysian food industry has shown that lack of literature has contributed to TQM practices in the food industry and there is scarce information regarding the implementation between TQM practices and trust attributes of certified halal food products (Talib, Ali and Idris, 2013).

Trust attributes of food products with halal certification refers to the Shariah compliance transportation, Shariah compliance packaging process, Shariah compliance storage and Shariah compliance production process (Syed Marzuki, Hall and Ballantine, 2012). Nevertheless, the issues of non Shariah compliance of certified halal food products as reported by the mass media has a great impact especially among Muslim customers on the status of halal food products sold in the market. Thus, it is very interesting in this paper to examine what are the

elements of TQM practices that can be implemented by food manufacturers to assure trust attributes of food products with the halal certification

## **LITERATURE REVIEW**

Numerous studies on TQM conducted by researchers have examined different TQM constructs (Prajogo and Sohal, 2003). As a result, it is difficult to reach a common set of TQM practice (Hoang, Igel and Laosirihongthong, 2006). However, Malcolm Baldrige National Quality Awards (MBNQA) is among the most established framework for the researchers to use due to its ability in providing a good measurement instrument (Zhang, Waszink and Wijngaard, 2000). Strategic planning, information management, top management, process management, human resources and customer focus are six dimensions underpinning MBNQA criteria (Samson and Terziovski, 1999). This study believes that all the six dimensions can assure trust attributes of halal food products as past researchers have empirically proven that these latent constructs assures the safety of food. *Previous studies on strategic planning, information management, top management, process management, human resources and customer focus towards safety of food.* The term strategic planning refers to how the companies formulate its strategy and policy to achieve excellence in organizational performance (David, 2007). The elements of customer driven quality should be an integral part of strategic planning (Samson and Terziovski, 1999). For instance, customer requirement towards safety and quality of food products should be incorporated in company business strategic planning. Its purpose is to translate customer requirement regarding product quality and safety in product development process and allocate necessary resources (Costa Dias, Sant'Ana, Cruz, Assis, Faria, Fernandes de Oleveira and Bona, 2011).

Issac, Rajendran and Anantharaman (2004) states, information analysis can help the organization to improve the quality of products. This argument has been supported by Psomas and Fotopoulos, (2010) whose found process and data management such as system recording and analysis of the company performance, system recording and analysis of the company cost and system recording and analysis of quality data (i.e. rate of defect product) have a significant impact on quality improvement in the food company.

Top management has been claimed to become a major driver in ensuring safety and quality of food products. Various studies have claimed that top management is vital to the success of food safety system (Macheka, Manditsera, Ngadze, Mubaiwa and Nyanga, 201; Karaman, 2012).

The importance of process management towards ensuring continuous quality improvement was given considerable attention by Tari and Sabater (2004). They also mentioned that continuous improvement and high quality outcome in the organization can be realized by processing the management techniques. Given the importance of process management in ensuring continuous improvement and high

quality outcome in the food company by Psomas, Vouzas and Dimitrios (2013), process management is expected to influence the safety of food.

Human resource management has a greater effect on quality outcome (Tari and Sabater, 2004). This result may indicate that people are key factors in quality excellence. Human resource elements such as employee availability, employee commitment, employee training and employee knowledge are also recognized as crucial to the success of the food safety system implementation (Fotopoulos, Kafetzopoulos and Psomas, 2009).

Previous studies have shown that consumers demand with respect to safe and quality food were considered as an internal motivation for the food company to implement a food quality management system (Psomas and Fotopoulos, 2010). In a similar manner, a higher level of awareness among consumers towards the safety of food products they consume, are also regarded as a motivation to the food company in obtaining a food safety certification (Macheke, Manditsera, Ngadze, Mubaiwa and Nyanga, 2013).

Hence based on the above discussion, this paper develops six hypotheses statement (refer Table 2) to scrutinize the relationship between the six dimensions of TQM and trust.

## **METHODOLOGY**

A hypothesis testing will be conducted as this research is intended to recognize the relationship between TQM practices and trust. To analyze the data, Structural Equation Modelling was used by using partial least square structural equation modelling (PLS - SEM). For the statistical processing of the data, the statistical analysis software SPSS 22 (Statistical Package for Social Sciences) and WARP PLS version 5.0 were used in this paper. The two step procedure approach is chosen for testing the hypothesized structural model. In the first step, assessing the measurement model is conducted, while in the second step assessing the structural model is examined.

## **RESULTS**

### *Respondent profile*

A total of 200 food SMEs with halal certification responded in this study, giving a response rate of 25.87%. For the type of industry, 78.5% of food manufacturers with halal certification were small and medium industries (SMEs) and 21.5% were small industries. For the distribution of scheme of halal certification, the majority of respondents (72%) had halal certification for food products only, followed by (19.5%) of respondents had halal certification for beverage products only and only 8.5% of respondents had halal certification for food and beverages. Furthermore, halal committee (44%) and halal supervisors (29%) are the majority of the respondents that completed the survey instrument individually and independently.

*Measurement model*

Table 1 summarizes the results of the measurement model. Factor loading, composite reliability (CR), and variance extracted were used to assess convergent validity (Fornell and Larcker 1981). In this study, the factor loading for all items exceeded the recommended level of 0.6 (Chin, Gopal and Salisbury 1997) and the CR ranging from 0.890 to 0.962 exceeded the recommended level of 0.7 (Gefen, Straub and Boudreau 2000). The average variance extracted (AVE) were in the range of 0.675 to 0.863, exceeding the recommended level of 0.5 (Hair, Black, Babin and Anderson 2010). Next, the discriminant validity was examined by comparing the correlation between constructs and square root of the variance extracted for a construct (Fornell and Larcker 1981) and results showing that the correlations for each construct was less than the square root of the AVE indicating that the measure had adequate discriminant validity. Furthermore, results of the variance inflation factor (VIF) (see table 1) were in the range of 2.132 to 3.536, below the recommended level of 5 (Hair et al., 2010). Indicating that variables used in this paper are reliable.

**TABLE 1: RESULT OF MEASUREMENT MODEL**

Construct	Type	N items	Factor loading	CR	AVE	(Corr) <sup>2</sup>	VIF
Strategic Planning	Reflective	4	0.903 to 0.947	0.962	0.863	0.929	3.162
Information Management	Reflective	4	0.793 to 0.930	0.926	0.758	0.870	3.536
Top Management	Reflective	4	0.590 to 0.901	0.890	0.675	0.822	2.376
Process Management	Reflective	3	0.889 to 0.941	0.938	0.835	0.914	3.004
Human Resources	Reflective	4	0.874 to 0.931	0.951	0.829	0.911	3.302
Customer Focus	Reflective	4	0.782 to 0.950	0.944	0.810	0.900	3.033

---

Trust	Reflective	4	0.878 to 0.937	0.953	0.835	0.914	2.132
-------	------------	---	-------------------	-------	-------	-------	-------

---

*Structural model*

Table 2 which presented the strategic planning was found not to have a positive significant relationship on trust and represents a relatively small effect size ( $\beta = 0.035$ ,  $p = 0.275$ ,  $f^2 = 0.018$ ). Thus, hypotheses H1 of this paper was not supported. Next, the information management is found to have a positive significant relationship on trust with small effect size ( $\beta = 0.216$ ,  $p < 0.001$ ,  $f^2 = 0.138$ ). Therefore, hypotheses H2 is supported. The results also indicated that there was a significant relationship between top management and trust with a small effect size ( $\beta = 0.219$ ,  $p < 0.001$ ,  $f^2 = 0.123$ ). So hypotheses H3 in this paper is supported. Additionally, process management was found to have a positive significant relationship on trust with a medium effect size ( $\beta = 0.288$ ,  $p < 0.001$ ,  $f^2 = 0.194$ ). Therefore, hypotheses H4 is supported. Conversely, there was no significant relationship between human resources and trust with a small effect size ( $\beta = 0.043$ ,  $p = 0.232$ ,  $f^2 = 0.026$ ). Hence, hypotheses H5 was not supported. Finally, customer focus also was found not to have a positive significant relationship on trust and represent a relatively small effect size ( $\beta = 0.073$ ,  $p = 0.107$ ,  $f^2 = 0.041$ ). Therefore hypotheses H6 was not supported.

**TABLE 2: RESULT OF STRUCTURAL MODEL**

Path	$\beta$	<i>p - value</i>	<i>f2</i>	Hypotheses
SP → Trust	0.035	0.275	0.018	H1: not supported
IM → Trust	0.216	<0.001	0.138	H2: supported
TM → Trust	0.219	<0.001	0.123	H3: supported
PM → Trust	0.288	<0.001	0.194	H4: supported
HR → Trust	0.043	0.232	0.026	H5: not supported
CF → Trust	0.073	0.107	0.041	H6: not supported

Note:\*\* denotes significant at  $p < 0.01$ , \* denotes significant at  $p < 0.05$ , SP=Strategic planning, IM=Information management, TM=Top management, PM=Process management, HR=Human resources, CF=Customer focus

## **DISCUSSION**

Findings of this paper indicated that strategic planning has no significant relationship with trust. The results obtained contradict the results from the research done by Che Din and Daud (2014) who claimed that clear vision and visible halal values is one of the critical success factors that will ensure food products that are produced is Shariah compliant.

In examining the relationship between information management and trust, it was found that significant positive relationship was present. This result shows similar findings to Mohd Shariff and Abd Lah (2014) in which data management such as record keeping related to materials and ingredients used by food manufacturers were seen as one of the critical factors to comply with general guidelines in producing certified halal food products.

Next, the research findings in this study indicated that top management was found to be significantly related to trust. This result is consistent with the mainstream result of the halal food related research where top management appear to have significant role in ensuring halalan thoyyiban of halal food product. These can be seen through studies done by Daud, Che Din, Bakar, Kadir and Sapuan (2011).

Moreover, findings of this research indicated that process management had a significant positive relationship with trust. This findings is similar to the research done by Ratanamaneichat and Rakkarn (2013) stated that process management should be apply to ensure halalan thoyyiban product.

Furthemore in this research, human resource was shown to be not significantly related to trust. This result is in contrast with the food safety related research because human resource was considered as a crucial element to the successful implementation of the food safety system (Fotopoulos et al., 2009; Tari et al., 2004).

Finally, the finding of this research shows that customer focus does not have significant relationship with trust. The result obtained against with the findings of study conducted by Che Din and Daud (2014) which stated that one way to maintain Shariah compliance of halal food product is through customer relation and communication

## **CONCLUSION**

This paper explored the above mentioned gaps and findings revealed that TQM practices can influence Shariah compliance of the halal food products. The results suggest that information management, top management and process management can influence trust. In the meantime, results also indicated that strategic planning, human resources and customer focus are three dimensions of TQM practices that were found not to have significant relationship to trust.

## REFERENCES

- Abdul Talib, H.H., Mohd Ali, K.A. & Fazli Idris (2014). *Critical success factors of quality management practices among SMEs in the food processing industry in Malaysia*. Journal of Small Business and Enterprise Development. 21 (1): 152 – 176.
- Agus, A. 2005. *The structural linkages between TQM, product quality performance, and business performance: Preliminary empirical study in electronics companies*. Singapore Management Review. 27(1): 87-105.
- Arumugam, V. Keng-Boon Ooi & Tuck-Chee Fong (2008). *TQM practices and quality management performance*. The TQM Journal. 20(6): 636 – 650.
- Che Din, R. & Daud, S. *Critical Success Factors of MS1500:2009 Implementation*. International Halal Conference, PWTC, Kuala Lumpur, Malaysia, 4-5 September 2012. Procedia- Social and Behavioral Sciences. 121(2014): 96-103.
- Chin, W. W., Gopal, A., & Salisbury, W. D. (1997). *Advancing The Theory Of Adaptive Structuration: The Development Of A Scale To Measure Faithfulness Of Appropriation*. Information Systems Research, 8(4), 342 - 367.
- Costa Dias, M.A., Sant'Ana A.S., Cruz A.G., Assis F. Faria J.D., Fernandes de Oliveira C.A. & Bona, E. (2011). *On the implementation of good manufacturing practices in a small processing unity of mozzarella cheese in Brazil*. Food Control. 24: 199-205.
- Daud, S., Che Din, R., Bakar, S., Kadir, M.R. & Sapuan, N.M. (2011). *Implementation of MS1500:2009: A gap analysis*. Communication of the IBIMA Journals. 2011: 1-11.
- David, F.R. (2007). *Strategic Management: Concept and Cases*. South Carolina: Pearson.
- Fornell, C. & Larcker, D. F. (1981). *Evaluating structural equation models with unobservable variables and measurement error*. JMR, Journal of Marketing Research, 18(1), 39.



- Fotopoulos, C.B. & Psomas, E.L. (2009). *The impact of “soft” and “hard” TQM elements on quality management results*. International Journal of Quality & Reliability Management. 26(2): 150 – 163.
- Fotopoulos, C.V., Kafetzopoulos, D.P. & Psomas, E.L. (2009). *Assessing the critical factors and their impact on the effective implementation of a food safety management system*. International Journal of Quality & Reliability Management. 26(9): 894-910.
- Gefen, D., Straub, D., & Boudreau, M. C. (2000). *Structural Equation Modeling And Regression: Guidelines For Research Practice*. Communications of the Association for Information Systems, 4(1), 7.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis*. Upper Saddle River, NJ: Prentice-Hall.
- Hoang, D. T., Igel, B. & Laosirihongthong, T. (2006). *The impact of total quality management on innovation: Findings from a developing country*. International Journal of Quality & Reliability Management. 23(9): 1092-1117
- Issac, G., Rajendran, C. & Anantharaman, R.N. (2004). *A conceptual framework for total quality management in software organizations*. Total Quality Management. 15(3): 307-344.
- Karaman, A.D., Cobanoglu, F., Tunalioglu, R & Ova, G. (2012). *Barriers and benefits of the implementation of food safety management systems among the Turkish dairy industry: A case study*. Food Control. 25(2): 732-739.
- Macheka, L., Manditsera, F.A., Ngadze, R.T., Mubaiwa, J. & Nyanga, L.K. (2013). *Barriers, benefits and motivation factors for the implementation of food safety management system in the food sector in Harare Province, Zimbabwe*. Food Control. 34 (1): 126-131.
- Mohd Sharif, S. & Abd Lah N.A. *Halal Certification on Chocolate Products: A Case Study*. Conference Proceedings on International Halal Conference (INHAC), PWTC, Kuala Lumpur, Malaysia, 4-5 September, 2012. Procedia-Social and Behavioral Science, 2014

- Prajogo, D. I. & Sohal, A. S. (2003). *The relationship between TQM practices, quality performance, and innovation performance: An empirical examination*. International Journal of Quality & Reliability Management. 20(8): 901-918.
- Prajogo, D.I. & Sohal, A.S. (2004). *The multidimensionality of TQM practices in determining quality and innovation performance –an empirical examination*. Technovation. 24: 443-453.
- Psomas, E., Vouzas, F. & Dimitrios, K. (2013). *Quality management benefits through the “soft” and “hard” aspect of TQM in food companies*. The TQM Journal. 26(5): 431-444.
- Psomas, E.L. & Fotopoulos, C.V. (2010). *Total quality management practices and results in food companies*. International Journal of Productivity and Performance Management. 59(7): 668 – 687.
- Ratanamaneichat, C. & Rakkarn, S. *Quality Assurance Development of Halal Food Products for Export to Indonesia*. Social Science, Engineering and Energy Conference, Thailand, 2012. Procedia-Social and Behavioral Sciences, 2013.
- Samson, D. & Terziovski, M. (1999). *The relationship between total quality management practices and operational performance*. Journal of Operations Management. 17(4): 393-409.
- Syed Marzuki, S.Z., Hall, C.M., & Ballantine, P.W. (2012). *Restaurant manager and halal certification in Malaysia*. Journal of Food Service Business Research. 15:195-214.
- Talib, H.H., Ali, K.A.M. & Idris, F. (2013). *Quality management framework for the SMEs food processing industry in Malaysia*. International Food Research Journal 20(1):147-164.

*The Influence Of Total Quality Management (Tqm) Practices Towards Assuring Trust  
Attributes Of Food Products With Halal Certification  
Rizuwan Abu Karim & Nolila Mohd. Nawi*

Tari, J.J. & Sabater, V. (2004). *Quality tools and techniques: Are they necessary for quality management?* Total Quality Management. 9(8): 703-710.

Zhang, Z., Waszink, A. & Wijngaard, J. (2000). *An instrument for measuring TQM implementation for Chinese manufacturing companies.* International Journal of Quality & Reliability Management. 17(7): 730-755.