



## **MODERATING WORK EFFICIENCY AND PERFORMANCE THROUGH BEST-PRACTICE CERTIFICATION: MANAGEMENT'S PERSPECTIVE**

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### **ABSTRACT**

This paper examines the urgent need to successfully implement best-practice certification when determining an effective economic mechanism for the foodservice industry from the management perspective. The study involved 73 managers of targeted food service companies (at a response rate of 92%) who participated in a survey. The 33 best-practice compliant companies and 40 companies still undergoing the certification process formed the sample. The Partial Least Squares Structural Modeling (PLS-SEM) indicates that best-practices had a significant influence on work

efficiency and performance in the context of the full sample. The Measurement Invariance Assessment of Composite Model (MICOM) analysis also indicates that the best-practice certification adoption group moderated this relationship between best-practices and work efficiency and performance. However, the results show that the best-practice certified group demonstrated a stronger relationship between food relevant best-practices and work efficiency and performance compared to the group undergoing certification. The outcome reveals that embracing best-practice management can lead to a strong systematic approach in enhancing a business operation.

JEL Classification Code: L1, J24, C31

Key words: Best-practice certification, MICOM, Moderation analysis, Operation, Quality, Performance

## 1. INTRODUCTION

Practical and successful management is central to organizational survival and sustained business performance. Clear communication of organizational goals and direction for the employees to understand, align to and work toward achieving desired success at both personal and organizational level are needed to meet ever-changing eventualities (Paulraj and Jong, 2011). Consequently, organizations demand effective management that will guide employees in their daily tasks so that they could collectively work to remain on track in an efficient system. Effective managers will build trust, respect, and quality to overcome management challenges and achieve organizational goals. Research has shown that managers are essential for ensuring positive employee work results, for example, on work performance, job satisfaction and organizational commitment (Saad et al., 2018). Similarly, a management's positive view of employees also significantly influences the overall hygiene practices of food handlers in the public food service business according to Saad et al. (2018). Good management will bring about a marked change which impacts the organization, including the clients. Not only are these managers expected to plan and implement policies, they also value the outcomes of these policies accordingly.

Studies by Lafuente and Abad (2018), Qiu and Kahn (2019), Siougle, Dimelis, and Economidou (2019), Ansari, Kant, and Shankar (2019) and Treacy et al. (2019) have shown that when voluntary certification practice becomes a part of world-class quality management, it impacts on organizational performance. This is

because quality management in the food industry is now recognized as one of the international standards that identify and controls food safety hazards. Several standards have been developed as a guideline, such as ISO 22000 (Food Safety Management), ISO9001 (Quality Management System), and ISO 22000 (Food Safety Management System).

In line with these international standards, the Malaysian Standards developed by SIRIM have now become the national standards. Examples include MS 1480 (Food Safety According to Hazard Analysis and Critical Control Point System), MS 1500 (Halal Food - Production, Preparing, Handling and Storage - General Guidelines), and MS 1514 (Good Manufacturing Practice for Food). Halal Management is another example of a national level food-related management system developed by the Department of Islamic Development Malaysia popularly known as JAKIM. This government authority's vision is to assist Malaysian businesses based on Islamic principles. Quoting Lada, Tanakinjal, and Amin (2009, 66), "*halal* is in the realm of business and trade and is becoming a global symbol for quality assurance and lifestyle choice".

Local studies on certification adoption demonstrate that each certification adoption in Malaysia has been well-accepted by large scale companies, although to a lesser extent by small-medium-enterprises (SMEs) (Ho, 2010). As in the rest of the world, adoption of best-practice certification in Malaysia is still voluntary for fear that strict adherence may exert pressure on the foodservice sector. The government, however, does enforce and regulate the Food Act 1987 for food safety compliance as the minimum requirement for any food-related business. Acts and regulations, as well as all best-practice certifications, serve as practical guidance for the food industry, where the emphasis is on management responsibility for ensuring that food is appropriately prepared and handled. Similarly, premises, devices or related utensils, machines, as well as processing aids must be clean and hygienic. The halal management system focuses on the same aspects but with the additional Islamic law requirements. The halal (permissible by Islam) management system focuses on the source of ingredients; free from najis (contamination and cross-contamination from dogs, pigs and their descendants), any liquid or object discharged from human beings, animals, and slaughtered carrion, as well as alcohol.

Yet statistics demonstrate that not many food service industries, particularly the SMEs, are seeking the ISO/IEC or the Malaysian Standards accreditation as they have a “wait and see” attitude (Idris, McEwan, and Belavendram, 1996). The stagnant trend indicates industry reluctance to adopt available best-practice certifications as a strategy to propel business performance and research on this variable as a moderating factor is scarce (Talib, Chin, and Fischer, 2017; Valmohammadi and Kalantari, 2015). The question is, does this situation reflect industry non-readiness for a competency which implies a reliable and consistent level of quality across their business operation? This brings us to the primary objective of this research which is to examine the adoption of best-practice certification in moderating food hygiene practices toward work efficiency and performance, thus making it essential in identifying some of the root problems in an organization. The following question will be addressed: Is there any significant difference between a non-and-full adoption of a quality management system in the organization? This research also addresses the importance of certification as a moderator and hypothesizes the following:

- H1: Adoption of best-practice certification moderates work hygiene-practices and the work efficiency relationship
- H2: Adoption of best-practice certification moderates employee’s hygiene-practices and the work performance relationship

The first hypothesis explains that best practices will influence the level of work efficiency provided that a best-practice certification has been adopted. Similarly, the second hypothesis assumes that best practices will influence the work performance level provided that a best-practice certification has been adopted. These practices are valuable in improving work efficiency and performance, but they must also be approached together with the certification of these best-practices.

## 2. LITERATURE REVIEW

### 2.1 WORK EFFICIENCY AND PERFORMANCE

Organizations need to work efficiently and economically to compete and survive in the business world. The word “efficiency” which

means “the good use of time and energy in a way that does not waste any” (Cambridge Dictionary, 2019) speaks for itself. According to Wei and Taormina (2011), as efficiency is instrumental in attaining organizational goals, management requires a high level of efficiency to attain a higher level of organizational performance. Hence, to be efficiently and effectively sustainable in today’s competitive environment, organizations must deliver high quality, low-cost products and services in the shortest time possible. Organizations, therefore, adopt a number of management tools such as quality management standards or systems to increase levels of work quality, efficiency, safety, productivity, reliability and satisfaction, while also cutting costs.

According to Goetsch and Davis (2002), a quality management system will not only take into account organizational policies and processes but also show how quality products or services are achieved in line with customer satisfaction and organizational objectives. Zhang, Joglekar, and Verma (2015) measured resource use efficiency in 2,481 hotels in the United States and produced regression results that show hotels adopting eco-certification outperform those without such certification. They argued that adopting such internal practice was critical for ever-growing credibility in the hotel business.

Several studies have also argued that certification is seen to influence business performance. For example, Talib, Hamid, and Chin (2016) confirmed that *Halal* certification improved logistics performance. The same certification compliance was also found to affect a firm’s innovative and market performance (Salindal, 2018). In Bashir et al. (2019), certificate adoption was also used as a strategy for food market competitiveness overseas. It can be deduced that performance literature applauds the adoption of certification as an essential tool in organizational practices.

## 2.2 BEST-PRACTICES

Best-practices are generally acknowledged as the most superior of procedures and processes that lead organizations to greater success financially and non-financially over a certain period (Jirangkul, 2018). To date, many local studies have discussed Total Quality Management (TQM) as a critical success factor (Idris et al., 1996), adoption of EMS 14001 certification (ElTayeb, Zailani, and

Jayaraman, 2010), as well as ISO 9000 and integrated lean TQM for sustainable development (Ho, 2010). A recent overview of academic literature by Castro and Frazzon (2017) traces how best practices are similar in the context of successful adoption in exemplary firms. Interestingly, out of 674 articles benchmarked from 1990 to 2015, the study also found a substantial and consistent increase in research on best-practice in relation to organizational processes. The study suggests that best-practices have been examined in the last three decades.

Adoption of a quality management system also adds value to organizational success. A lot of research has shown an increase in work performance satisfaction, productivity and efficiency after company adoption of ISO standards (Ruzevicius, Adomaitiene and Sirvidaitė, 2004; Tzelepis et al., 2006; Mashagba, 2014; Salhieh and Abu-Doleh, 2015). A study by Sweis et al. (2019) on 57 companies in Jordan reveals how ISO 9001-certified companies experienced higher job satisfaction level compared to non-ISO 9001-certified companies. The results underscore the importance of adopting best practices in the organization's processes based on increased work efficiency and satisfaction level of project managers and their team members.

Some studies show that firms often identified best practices as part of their business improvement strategy. For example, 25 hospitals in Jordan witnessed adoption of green operations management to sustain hospital resources including electrical power, non-hazardous waste, and emissions (Migdadi and Omari, 2019). Best-practices require certification to depict superiority, quality-control, credibility, commitment and engagement according to the guidelines or standards for practice of management principles consistent with corporate business vision and mission. In a review of certification and certified hotels in Africa, Spenceley (2018) argued that being certified is a way of sustaining a hotel business. Of 18 countries, the study identified a very small percentage (less than 4%) of certified hotels across the continent. The findings suggest that the hotels in Africa hardly understood the financial benefits of certification, while the major motivation for certification was pressure from environmentally-conscious customers who cared about a good reputation and cost-saving habits through resource-conserving activities (Spenceley, 2018).

Food-related certifications are expressions of trustworthy and safe production (Corte, Gaudio, and Sepe, 2018). Corte et al. (2018) systematically reviewed articles from 1985 to 2016 on ethical

food and kosher certification, as well as other related certifications relevant to food market sustainability, safety and consumer behavior. Other than hygienic food products, the authors cited Miele (2013) and Silver (2011) on kosher-certification for animal welfare. The preliminary study conducted by Trafialek and Kolanowski (2017) on HACCP principles in certified and non-certified food businesses reveals that implementing HACCP principles in 40 food businesses in Poland had mixed results. As predicted, the assessment of principles in the certified food businesses was higher than that of the non-certified ones, although in some cases, certification did not necessarily result in excellent food safety practices. A study on 210 MS1500-certified Malaysian food manufacturers found that certification implementation positively mediated food business performance (Talib et al., 2017). The authors surveyed 70% of the SMEs' managerial personnel who were knowledgeable and influential in their companies. They argued that the implementation of halal certification would potentially benefit and lead to superior business outcomes.

### 2.3 CERTIFICATION ADOPTION AS A MODERATOR

With ever-increasing business pressures, organizations are now required to execute better business strategies and do more with less to remain competitive. Many organizations resort to best practices for work processes and procedures for producing optimal results practical implementation is deemed necessary (Ghosh and Dass, 2015) as they are the alternative to mandatory legislated standards used to maintain quality which can be based on self-assessment or benchmarking. Best practices ensure a wide range of benefits for employees, managers and companies, including enhanced work performance and efficiency. Most organizations have recognized the need for best practices, and in today's rapidly changing and complex business system, certification is becoming even more important than before (Fleischman, Meyer, and Watson, 2011). According to Samat, Ramayah and Mohd Yusoff (2008), certified companies have higher-quality best practices.

Studies on the moderating effect of best practice certification are rare. Valmohammadi and Kalantari (2015) found that certified companies showed better organizational performance than non-certified ones with internal motivation as a moderating factor. They

also found that internal motivation such as improving customer relationships, saving time and cost, increasing efficiency through involvement of all staff to enhance internal processes played a more critical role in obtaining the certificate than external motivation factors such as being pressured by the market to pursue adoption of the best-practice management system. Also, certified companies with high internal motivation scores showed better performance levels than those with low internal motivation scores. Another study by Talib et. al. (2016) found that adoption of the *halal* certificate directly influences logistics performance when government support played a prominent role as a moderating variable. This shows that certification can be used as an instrument in enhancing organizational performance.

### 3. RESEARCH METHODOLOGY

This research is cross-sectional in nature, in which government-controlled food service providers and workers practicing workplace food safety were chosen as samples. Based on a purposive sampling method, the questionnaire was designed and pre-tested by a group of experts as suggested by Lakhali, Pasin, and Limam (2006). This study follows Saad et al. (2018) for the adoption of a 6-point Likert scale as this type of scale forces a response to set at a certain point (Croasmunand Ostrom, 2011).

The questionnaires were distributed to five regional divisions consisting of 81 government-controlled food services in 13 states of Malaysia. A response rate of 90.1% was obtained from the food service managers with a total of 73 questionnaires returned. The respondents were later grouped into two; fully certified (YES-group) and in-progress of adopting certification (NO-group). The following table shows the tabulation of responses from the five regions (Table 1).

TABLE 1  
Response Profiling According to Five Regions

Region	States	Responses
Northern	Perlis, Kedah, Pulau Pinang, Perak	21
Central	Selangor, Negeri Sembilan, Melaka	7
Southern	Johor	17
Eastern	Pahang, Kelantan, Terengganu	17
East Malaysia	Sabah, Sarawak	11
	Total	73



Structural Equation Modelling with Partial Least Square (i.e. PLS-SEM) estimation technique was employed for data analysis since the sample size can be considered as small (Hair et al., 2017; Ong and Puteh, 2017) and the targeted endogenous latent constructs were two latent constructs (Astrachan, Patel and Wanzenried, 2014). Besides, this multivariate statistical test can also be considered as the best method to adopt for testing both convergent and discriminant validity of a small sample size (Hair, Ringle and Sarstedt, 2011; Ringle, Sarstedt and Hair, 2013) through the concept of bootstrapping analysis (Hair et al., 2017; Hair et al., 2012; Ong and Puteh 2017;). Furthermore, the measurement invariance of the composite model (i.e. MICOM) analysis was used to assess the moderation effect of the categorical moderator variable (Henseler, Ringle, and Sarstedt, 2016), which in this research refers to certification adoption. According to Henseler et al. (2016), this procedure involves three steps namely (1) configural invariance, (2) compositional invariance, and (3) equality of composite mean values and variances. These three procedures are the precondition analysis used for assessing the meaningful and valid moderation test of a categorical moderator variable (Henseler et al., 2016; Hair et al., 2017).

## 4. RESULTS / FINDINGS

### 4.1 CONVERGENT AND DISCRIMINANT ANALYSIS

Table 2 shows that convergent validity was met across all three types of sample data; full data (73 samples), YES-group (33 samples that adopted certification), and NO-group (40 samples in-progress of adopting certification). The analysis indicates that all indicators used to measure the targeted latent constructs had a loading value as well as Cronbach's alpha and Composite Reliability above .70, which meet the minimum requirement of this criterion (Hair et al., 2017). Besides, assessment of the Average Variance Extracted (i.e. AVE) was also above .50 for each type of sample data (Hair et al., 2017). It can be concluded that all indicators for measuring the targeted latent constructs met the minimum requirements of the convergent validity assessment.

**TABLE 2**  
**Convergent Validity of Measurement Model for All Samples (FULL), Certified (YES-group) and In-progress (NO-group) Adoption of Best-Practice Certification**

Latent Variable	Ind.	Full Samples (n = 73)		YES Samples (n = 33)		NO Samples (n = 40)	
Practices	A1	<i>0.77*</i>	CA = 0.78	<i>0.77*</i>	CA = 0.70	<i>0.78*</i>	CA = 0.83
	A2	<i>0.74*</i>	CR = 0.86	<i>0.73*</i>	CR = 0.81	<i>0.82*</i>	CR = 0.89
	A3	<i>0.76*</i>	AVE = 0.60	<i>0.76*</i>	AVE = 0.52	<i>0.78*</i>	AVE = 0.66
	A4	<i>0.81*</i>		<i>0.73*</i>		<i>0.87*</i>	
Performance	B1	<i>0.87*</i>	CA = 0.87	<i>0.88*</i>	CA = 0.87	<i>0.87*</i>	CA = 0.87
	B2	<i>0.83*</i>	CR = 0.91	<i>0.88*</i>	CR = 0.91	<i>0.80*</i>	CR = 0.91
	B3	<i>0.87*</i>	AVE = 0.72	<i>0.84*</i>	AVE = 0.72	<i>0.89*</i>	AVE = 0.71
	B4	<i>0.81*</i>		<i>0.81*</i>		<i>0.81*</i>	
Efficiency	C1	<i>0.83*</i>	CA = 0.90	<i>0.85*</i>	CA = 0.90	<i>0.83*</i>	CA = 0.91
	C2	<i>0.90*</i>	CR = 0.93	<i>0.89*</i>	CR = 0.93	<i>0.92*</i>	CR = 0.94
	C3	<i>0.91*</i>	AVE = 0.77	<i>0.91*</i>	AVE = 0.76	<i>0.92*</i>	AVE = 0.80
	C4	<i>0.87*</i>		<i>0.84*</i>		<i>0.91*</i>	

Note: Ind. = Indicator; CA = Cronbach’s Alpha; CR = Composite Reliability; AVE = Average Variance Extracted; \*the indicator loadings were significant at 95% confidence level.

The results of the heterotrait-monotrait ratio of correlations (HTMT) discriminant analysis across the three-sample data are shown in Table 3. The analysis indicates that each latent variable was totally discriminant of each other as each ratio value reported in Table 3 was below .90 (Henseler, Ringle, and Sarstedt, 2015).

**TABLE 3**  
**HTMT Discriminant Assessment of a Measurement Model for Full Adoption of Best-Practice Certification Sample**

LV	Practices	Performance	Efficiency
Practices	-		
Performance	<i>0.76*</i>		
	<i>0.73*</i>	-	
	<i>0.78*</i>		
Efficiency	<i>0.81*</i>	<i>0.81*</i>	
	<i>0.80*</i>	<i>0.81*</i>	-
	<i>0.78*</i>	<i>0.82*</i>	

Note: LV = Latent Variable; \* $p < .05$ ; Bold value refers to full sample analysis; Unbold value refers to YES-group sample analysis; Italic value refers to NO-group sample analysis.

## 4.2 MICOM MODERATION ANALYSIS

Table 4 shows the MICOM Step 2 assessment. This statistical procedure applies the permutation concept to assess whether the composite scores differ significantly across the groups. For this, a correlation of the composite scores between the moderator groups was used (Henseler et al., 2016; Hair et al., 2017). The analysis did not indicate any significant difference between the two composite scores since the  $p$ -value of the permutation test was not significant (i.e.  $p$ -value > .05).

TABLE 4  
Latent Variable MICOM (Step 2) Test between  
YES-group and NO-group Samples

Latent Variable	Correlation	Correlation Permutation	5% Quantile of the empirical distribution	$p$ -value <sup>a</sup>
Practices	0.99	0.99	0.97	0.79
Performance	0.99	0.99	0.99	0.80
Efficiency	0.99	0.99	0.99	0.99

Note: <sup>a</sup>If the value is higher than 0.05; hence the variance between the two groups is equal.

Since the MICOM Step 2 procedure supports the initial invariance measurement, the analysis proceeded to Step 3. At this stage, a statistical test using a permutation concept of the data set was performed to test whether the mean and variance were equal across the composite score groups (Henseler et al., 2016; Hair et al., 2017). Table 5 shows that the mean and variance for the composite scores between the two groups of moderator variables was equal since the analysis produced non-significant  $p$ -values.

The MICOM analysis confirms that the invariance measurement of the model was met. Table 6 shows the results of the moderation analysis by permutation as suggested by Henseler et al. (2016) and Hair et al. (2017). The initial stage of analysis of all 73 samples (FULL) demonstrates practices having a positive and significant influence on employee performance and efficiency. The same results were also obtained from the tests on the YES-group (33

sample subjects already adopting certification) and NO-group (40 sample subjects in-progress of adopting certification).

**TABLE 5**  
**Latent Variable MICOM (Step 3) Test between YES-group and NO-group Samples**

LV	Mean Value				Variance Value			
	1	2	3 <sup>a</sup>	4	1	2	3 <sup>b</sup>	4
PR	-0.06	0.00	-0.46, 0.46	0.82	-0.17	-0.01	-0.72, 0.67	0.65
PER	-0.21	-0.01	-0.47, 0.45	0.36	-0.08	-0.02	-0.85, 0.81	0.90
EFF	-0.03	0.00	-0.45, 0.46	0.91	-0.26	-0.02	-0.96, 0.87	0.59

Note: LV = Latent Variable; PR = Practices; PER = Performance; EFF = Efficiency; 1 = Original' 2 = Permutation; 3 = 95% Percentile Confidence Interval; 4 = p-value; <sup>a</sup>If the Original value includes a 95% confidence interval, hence the variance between two groups is equal; <sup>b</sup>If the value is higher than 0.05, hence the variance between two groups is equal.

**TABLE 6**  
**Path Moderation Test for Adoption of Best-Practice Certification Samples**

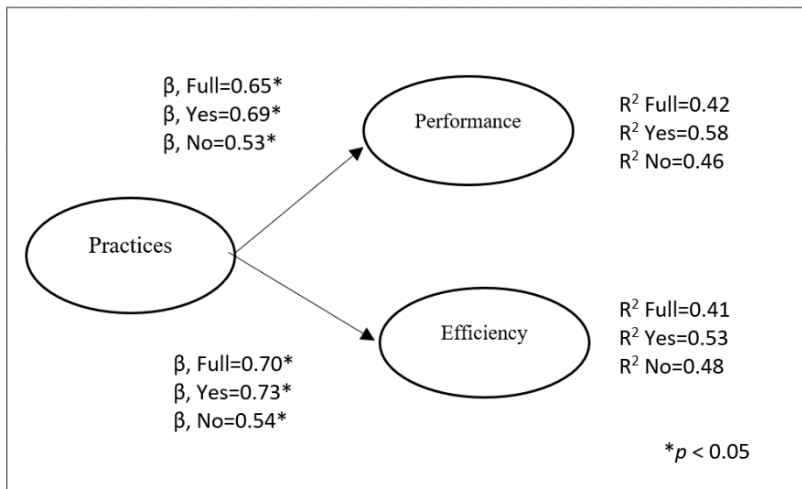
Path	Full	YES	NO	Original Difference $\beta$ (Yes-No)	Permutation	
	$\beta$	$\beta$	$\beta$		95% PCI <sup>a</sup>	p-value
Practices → Performance	0.65*	0.69*	0.53*	0.15	(-0.11, 0.14)	0.03*
Practices → Efficiency	0.70*	0.73*	0.54*	0.18	(-0.11, 0.16)	0.03*

Note:  $\beta$  = Path Coefficient; PCI = Percentile Confidence Interval; \* $p < .05$ ; <sup>a</sup>If the Original value includes the 95% confidence interval, hence the path coefficients between two groups are not equal.

As for the moderator analysis, it can be concluded that adoption of the best-practice certification group moderated the relationship of the targeted paths. The results show that the 95%

Percentile Confidence Interval of the permutation analysis did not include the original difference value of the path coefficient between the two groups (Performance and Efficiency). This is also supported by the *p*-value method, where the *p*-value was lower than .05 (Henseler et al., 2016; Hair et al., 2017). Therefore, the analysis indicates that the group with the best-practice certification (i.e. YES-group) was more likely to have a strong relationship of Practices towards Performance ( $\beta = .686$ ) and Efficiency ( $\beta = .727$ ) compared to the group that was undergoing certification (i.e. NO) (Practices  $\rightarrow$  Performance = .534 and Practices  $\rightarrow$  Efficiency = .543). Figure 1 shows the summary result of the analysis.

FIGURE 1  
Summary Result of PLS Analysis for Best-Practices Certification (YES vs NO adoption)



## 5. DISCUSSION AND CONCLUSION

Initial results reveal that being certified or not in any management system will not affect company performance and efficiency. But the best practices implementation from the adoption of a quality management system would change the company's future.

Results of the present study prove that adopting best-practice certification has moderated the relationship between best practices and work performance, as well as work efficiency. This supports the

first hypothesis that best practices do influence the level of work efficiency provided that a best-practice certification is adopted.

This is in agreement with findings in Ruzevicius et al. (2004), Tzelepis et al.(2006), Mashagba (2014), Salhieh and Abu-Doleh (2015)and Sweis et al. (2019) all of whom found that certification implementation profoundly impacted work performance and work efficiency. Similarly, from the practising managers' perspective, the findings support the second hypothesis that best practices will influence work performance, provided that a best-practice certification has been adopted. This confirms the moderating effect of certification on company work efficiency and performance found in a study by Talib et al. (2017). Orzes et al. (2017) also found that certification (in this case SA8000 certification) positively affected labor productivity and sales performance.

All these results are unanimous not only about the added value of best practices for improving work efficiency and performance but that companies must also be backed by certification of these practices. These findings are parallel to other studies by Valmohammadi and Kalantari (2015) as well as Talib et al. (2017). The empirical findings of this current research are in fact signaling to food service businesses that engaging in and executing best-practices is a worthwhile investment; one that raises business credibility, productivity, and work efficiency. Also, as most food services are small-scale, this research recommends that seeking continuous government support is essential, with perhaps provision of a proposed subsidized price structure that would encourage food services to adopt activities such as best-practice awareness training and relevant management systems seminars.

This research is limited to government-controlled food services. Although best-practice certification is voluntary, periodic Ministry of Health inspections may have contributed to the hesitancy displayed by the management of many food service businesses in acquiring best practices certification. This research suggests directions for further studies when exploring adoption of a best-practice management system for other commercial food businesses.

#### ACKNOWLEDGEMENT

The authors would like to express a special gratitude to many people who have supported us during our data collection, especially to Mr. Jailan Tamit when he was working with Kem Sinar Jaya, Kota Belud, Sabah. This research is dedicated to all government-controlled food service providers who participated in this study.

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