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Study Title: Determination and Analysis of Obstacles of Innovation in Malaysian Food Processing SMEs

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ABSTRACT

This paper discusses the innovation obstacles among Small and Medium Enterprises (SMEs). It aims to identify the main barriers of innovation in Malaysian food processing SMEs and seeking the best approach to overcome each of the barriers of innovation in Malaysian food processing SMEs. 163 sets of questionnaires were distributed among managers or owners of the food processing SMEs around Selangor, Malaysia and 77 responses had been collected and recorded. By using Statistical Package for the Social Sciences (SPSS), the result obtained by finding the mean value for each of the item assessed. From all the four barriers of innovation that had been studied like financial barrier, market barrier, organizational culture barrier and lack of information and skilled personnel barrier, it can be concluded that the financial barrier is the main barrier of innovation in Malaysian food processing SMEs. The financial barriers can be overcome by an easy financial loan application by the government for new machine or new equipment purchasing for SMEs. To eliminate the market factor barrier, the fear of failure need to be eliminated and be open minded. Next, the company has to give detail explanations about innovation to the employees to overcome the organizational culture barrier. Lastly to overcome the lack of information and skilled personnel barrier, more training, skills and knowledge program and workshops related to innovation for SMEs need to be held by government agencies. Both research objectives have been achieved and the findings are mainly benefit the SMEs practitioners and also related government agencies in restructuring the strategies towards more efficient innovation adoption and implementation.

Keywords: Barriers of Innovation, Small and Medium Enterprise, Methods of Overcoming Innovation Barriers

1. INTRODUCTION

Small and medium enterprises (SMEs) are considered to be the engine of economic growth and employment in Malaysia. The latest statistics indicate that SMEs constitute 99.2% of the total business establishments or totalling 548,267 enterprises, and contribute about 32% of GDP and 59% of total employment (SME Corp Malaysia, 2011). The development of SMEs has been recognised as an integral component for achieving sustainable economic growth and the developed country status by 2020. Due to their sheer numbers, size and nature of operations, the role of SMEs in promoting endogenous sources of growth and strengthening the infrastructure for accelerated economic expansion and development in Malaysia has been recognised (Normah, 2007). One of the primary means through which SMEs are expected to accomplish this task is by developing and commercialising innovations. Innovativeness of a new product and SME innovation capability is important to present opportunities for SMEs in terms of growth and expansion into new areas as well as allow SMEs to gain competitive advantage.

In Malaysia, the food processing industry is dominated by small and medium scale companies which represents more than 98% (5,925) of the total establishments (6,069) (Syed Shah et al., 2011). In 2010, the food industry contributed about 10% of the Malaysian manufacturing output attracted a total of RM1.972 billion in 69 projects. During the period of the Second Industrial Master Plan (IMP2) 1996-2005, the contribution of the industry to the total manufacturing output had increased from 6.1% in 1996 to 9.9% in 2005 (Musalmah, 2008). The processed food products have become the choice of many Malaysians due to the increasing trend of their standard of living and purchasing power. The Malaysian SMEs in the food sector are driven to operate to contribute to household income, for self employment and the growing demand of international markets in particular for *halal* foods (SMIDEC, 2009). In addition, with a Muslim population of 60%, the demand for *halal* foods by Malaysian consumers has increased over the years. It was estimated that the potential value of the *halal* food industry range between USD600 billion and USD2.1 trillion, which provides immense opportunities for Malaysian food processing companies (Brandt and Chuah, 2012). The changes of Malaysian lifestyle have resulted to an increase in the demand for convenience food and healthy food which in turn has led to innovative new products in the food processed based SMEs in Malaysia (Mohd Fauzi and Syed Shah Alam, 2011). Such innovation initiatives are driven by various factors such as changes in consumers' preferences, technological change, research and development activities, skills of workforce and many more.

Realising the essential contribution of food processing SMEs towards our economic growth, various incentives and assistance formulated by government to stimulate them to become more aggressive in undertaking innovative activities. MITI through its Groom Big or Product Quality Enhancement Programme has benefited 198 *Bumiputera* SMEs through increases in quality of their products. The One District One Industry programme or better known as *Satu Daerah Satu Industri* (SDSI) has been in existence for almost 20 years and has evolved over the years successfully created industries in a total of 141 districts nationwide. The MS1500:2004 standard, which covers the guidelines of food safety principle (MS1514), Hazard Analysis Critical Control Point (HACCP-MS1480), as well as guidelines for good cleaning practice for small and medium food industries towards HACCP, was introduced in April 2004 (Musalmah, 2007). SME Corporation Malaysia in collaboration with

Malaysia Industry-Government Group for High Technology (MIGHT) have introduced 1-Innovation Certification for Enterprise Rating & Transformation (1-InnoCert) to recognise and certify innovative enterprises & SMEs and to encourage entrepreneurs to venture into high technology and innovation-driven industries (MIGHT, 2010).

However, Desilva and Takeda (2005) noted that food processing industry is seen to be lagging behind in innovation activities in the developing country. SMEs are still facing heaps of challenges and obstacles that deter them from further expanding their businesses. The challenges and obstacles faced are highly related to the developmental stage of the firms and it includes lack of managerial capabilities, shortage in financing and human resources. Besides that, SMEs also have difficulties in gaining access to information and relevant technologies. This limits innovation and SMEs' competitiveness. Studies by JBIC (2000) and MITI (1996) identified low capital equipment, low capabilities of manpower, and budgetary constraints as key factors hindering innovation and development of technology among SMEs. As such, many SMEs are unable to develop new products and upgrade their existing lines of products. A survey carried out in 2012 by Associated Chinese Chambers of Commerce & Industry of Malaysia (ACCCIM) revealed 29% of the respondents agreed that financial difficulties is the main obstacle while carrying out innovation activities, followed by the usage of technologies (27%) and uncertainty in market direction (26%) (ACCCIM, 2012). Investment in R&D is one of the most important indicators of the overall level of innovation a given sector or industry. However, majority of SMEs (58%) do not undertake any form on research and development (R&D) activities in their company. About 32% of respondents undertake R&D, mainly by those in the manufacturing sector. For companies that do conduct R&D activities, majority of them (60%) spent less than 1% of the operating cost on R&D expenditure (National SME Development Council, 2011). Besides that, Vaibmu (2013) in his article summarized that the SMEs have difficulty to adopt innovation because of the financial barriers, inadequate marketing and management, inadequate skilled employees, difficulty in following the government regulations and also weakness on the internal information and linkages.

By knowing the barriers to the innovation implementation, SMEs can be prepared and be ready to face the challenge by taking appropriate preventive actions to avoid those barriers or to minimize their impacts. In this study, the researchers wanted to find out the main barriers that prevent the Malaysian food processing SMEs from being innovative and focused on four barriers: financial barriers, market factors, the organizational culture barriers and the lack of information and skilled personnel barrier. In addition, the researcher also intended to identify the best way of overcoming the barriers of innovation.

2. METHODOLOGY

A quantitative methodology using a survey questionnaire was utilized to collect data directly from respondents.

Questionnaire Design

The questionnaire consists of four different parts. First part is the introduction which informs the respondents about the purpose of the questionnaire in the survey. The

second part is Section A, which determines the demographic information of the respondents. This section requires the respondents' answer on their gender, age, ethnicity, and education level. In addition, background of the company also been asked such as the operating years, type of food products and the number of employees. Part three, that is Section B, is developed to obtain information related to the barriers of innovation in Malaysian food processing SMEs. Meanwhile, the last part of the survey would be Section C which constructed to collect the information on how to overcome the barriers of innovation.

Survey Implementation

The respondents of this survey were the food processing SMEs owners or managers around Selangor, Malaysia. 242 questionnaires were distributed to the respondents but only 70 of them were collected and used in this study.

Data Analysis

Statistical Package for the Social Sciences (SPSS) was used to analyse the data. Three types of analyses have been conducted in this study; demographic analysis of the respondents, barrier factor analysis in innovation of SMEs food processing, and best approach analysis to overcome each of the barriers in the innovation.

3. RESULTS AND DISCUSSION

Analysis of Demographic Information

Summary of the demographic analysis of the respondents is tabulated in Table 1. Eight elements of demographics have been analysed such as age of the owner, education level, years of business operation, types of food product and involvement of the companies in innovation activities. Most of the companies run by male with the range of age between 36 to 45 years old. From 70 respondents, 77.1% of them are Malay and averagely SPM level of their education. Most companies have been operated for around 1 – 5 years and they have involved in innovation activities in their products and processes.

Table 1: Summary of Demographic Analysis of the Respondents

| Demographic Variables | | Frequency | Percentage |
|-----------------------|----------------------|-----------|------------|
| Gender | Male | 43 | 61.4 |
| | Female | 27 | 38.6 |
| | Total | 70 | 100 |
| Age | 25 years old or less | 16 | 22.9 |
| | 26-35 years old | 23 | 32.9 |
| | 36-45 years old | 24 | 34.3 |
| | > 45 years old | 7 | 10 |
| | Total | 70 | 100 |
| Ethnicity | Malay | 54 | 77.1 |
| | Chinese | 12 | 17.1 |
| | Indian | 4 | 5.7 |
| | Total | 70 | 100 |

| | | | |
|--|--|------------|------------|
| Education level | No qualifications | 13 | 18.6 |
| | PMR/SRP | 5 | 7.1 |
| | SPM | 29 | 41.4 |
| | Certificate | 6 | 8.6 |
| | Diploma | 15 | 21.4 |
| | Bachelor Degree | 2 | 2.9 |
| | Total | 70 | 100 |
| Years of business operations | < 1 year | 15 | 21.4 |
| | 1 – 5 years | 46 | 65.7 |
| | 6 – 10 years | 7 | 10.0 |
| | > 10 years | 2 | 2.9 |
| | Total | 70 | 100 |
| Types of food product | Fish-based | 11 | 15.7 |
| | Frozen foods | 13 | 18.6 |
| | Bakery products | 17 | 24.3 |
| | Cocoa-based | 7 | 10.0 |
| | Cereal products | 4 | 5.7 |
| | Snacks foods | 15 | 21.4 |
| | Beverages | 3 | 4.3 |
| Total | 70 | 100 | |
| Number of employees | < 5 persons | 41 | 58.6 |
| | 5 – 20 persons | 29 | 41.4 |
| | Total | 70 | 100 |
| The Companies' innovations and research and development (R&D) activities over the past 5 years | No innovations | 26 | 37.1 |
| | Introduced innovations but had no R&D | 42 | 60.0 |
| | Introduced innovations and involved in R&D | 2 | 2.9 |
| | Total | 70 | 100 |

Analysis of the Barriers of Innovation

The purpose of the analysis is to identify which barrier gives the most influence on innovation performance of Malaysian food processing SMEs. Table 2 tabulates the analysis result of the all four barrier factors. Financial barrier gives the most influence on the innovation performance as the mean value of the factor is 4.19 and it has rated as ranking no. 1. Second barrier factor is organisational cultural. This followed followed by market factor barrier and lack of information and personnel skilled factor.

Table 2: Summary of the Mean Values for the Barrier Factor of innovation

| No. | Factor | Mean value of the questions | Mean value of the factor | Ranking | |
|-----|-----------------------|-----------------------------|--------------------------|--------------|----------|
| 1. | Financial barrier | Q1 | 3.99 | 4.190 | 1 |
| | | Q2 | 4.39 | | |
| 2. | Market factor barrier | Q1 | 3.77 | 3.647 | 3 |

| | | | | | |
|----|---|----|------|--------------|----------|
| | | Q2 | 3.46 | | |
| | | Q3 | 3.71 | | |
| 3. | Organizational culture barrier | Q1 | 4.39 | 4.095 | 2 |
| | | Q2 | 3.80 | | |
| 4. | Lack of information and personnel skilled barrier | Q1 | 3.39 | 3.343 | 4 |
| | | Q2 | 3.40 | | |
| | | Q3 | 3.24 | | |

Analysis of the Best Approach to Overcome the Barriers of Innovation

Table 3 tabulates the summary of the best approach to overcome the barriers of innovation.

Table 3: Summary of the Mean Value on the Approach to Overcome the Barriers in SMEs Innovation

| Factor of Barrier | Questions to Overcome the Barrier | Mean Value |
|---|---|------------|
| Financial barrier | Q1. Easy financial loan application procedures by financial institutions and government agencies. | 4.17 |
| | Q2. Easy financial loan application by the government for new machine/equipment. | 4.36 |
| Organizational culture barrier | Q1. Employees need to be positive towards any changes that can help SMEs to develop | 4.37 |
| | Q2. The company has to give detail explanations about innovation to the employees. | 4.40 |
| Market factor barrier | Q1. Partnering with other SMEs or other companies to operate the businesses | 3.23 |
| | Q2. Eliminate the fear of failure and be open minded in business. | 4.06 |
| Lack of information and personnel skilled barrier | Q1. More training, skills and knowledge program and workshops relate to innovation for SMEs. | 4.03 |
| | Q2. Send the employees to any workshop or program to improve skills. | 3.97 |
| | Q3. The company needs to be alert about any new technologies/products. | 3.93 |
| | Q4. The publicity about innovation programs for SMEs needs to be done comprehensively all over the nation. | 3.74 |

The mean value in the right column of Table 3 shows the best approach to overcome the barrier in SMEs innovation in Malaysia. The government should provide an easy financial loan application for the purchasing of new machines. This is because the latest technology in SME industries is important for the companies to stay competitive in the business market. Besides that, majority of the respondent think that the organisational cultural barrier can be overcome through the detail explanations of innovation by employers to the employees. The employers should convince the employees that the innovation can bring greater benefits to both parties.

From the analysis, it has been found that to overcome the market factor barrier, the managers need to eliminate the fear of failure and be open minded in business. Most

SMEs owners feel that adopting something new is risky and it might lead to a failure. The last barrier factor to be overcome is lack of information and skilled personnel. The result of analysis showed that the related government agencies need to conduct and organize more training, skills and knowledge programs and workshops related to the innovation in SMEs.

The summary of the result on the best approach to overcome each of the barriers of innovation in Malaysian food processing SMEs is shown in Table 4.

Table 4: Summary of the Result on the Best Approach to Overcome Each of the Barriers of Innovation in Malaysian Food Processing SMEs

| No. | Factors | The best ways to overcome |
|-----|---|---|
| 1. | Financial barriers | Easy financial loan application by the government for new machine/new equipment purchasing for SMEs. |
| 2. | Market factor barrier | Eliminate the fear of failure and be open minded in business. |
| 3. | Organizational culture barrier | The company has to give detail explanations about innovation to the employees. |
| 4. | Lack of information and skilled personnel barrier | More training, skills and knowledge program and workshops relate to innovation for SMEs by government agencies. |

4. CONCLUSION

The main barrier in conducting innovation in Malaysian food processing SMEs has been discovered as financial barrier, followed by organization cultural, market factor and lack of information and personnel skilled barrier. The analysis has also revealed that the best way to overcome the financial barrier is that the government providing an easy financial loan application for the purchasing of new machine or equipment for SMEs. Besides that, the detail explanations of innovation by employers to the employees need to be done wisely as an approach to overcome the organizational culture barrier. In addition, the SMEs must eliminate the fear of failure and be open minded when it comes to innovation adoption matter. Lastly, the forth barrier in conducting innovation in Malaysian food processing SMEs could be conducting more training and workshops relate to innovation for SMEs.

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