



Faculty of Technology Management and Technopreneurship

**INVESTIGATING CONSTRAINTS IN FOOD MANUFACTURING
FOR SMEs PERFORMANCE: A CASE OF KUALA LUMPUR**

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Master of Science in Technology Management

2018

**INVESTIGATING CONSTRAINTS IN FOOD MANUFACTURING FOR SMEs
PERFORMANCE: A CASE OF KUALA LUMPUR**

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**A thesis submitted
in fulfillment of the requirements for the degree of Master of Science
in Technology Management**

Faculty of Technology Management and Technopreneurship

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2018

DECLARATION

I declare that this thesis entitled “Investigating Constraints in Food Manufacturing for SMEs Performance: A Case of Kuala Lumpur” is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.


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APPROVAL

I hereby declare that I have read this thesis and in my opinion this thesis is sufficient in terms of scope and quality for the award of Master of Science in Technology Management.

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Date : ...24...OCTOBER..2018

DEDICATION

First and foremost, I would like to dedicate this thesis to my beloved husband, Mohamad Ikhwan bin Mohamad Nasir for his continuous love, encouragement and patience during the completion of my journey to obtain my Master's degree. This journey would not have been possible without his absolute support.

To my parents, Kamaruddin and Malilah, and my parents-in-law, Mohamad Nasir and Jainon, thank you for your unconditional love and prayers. Finally, to my siblings, Rohaidah, Norazimah, Mastura, Azni Yati, Kamarulnizam, Hazarullina, Noraziah, Yasman, Norazlita, Rafidah, and Norhaslinda, your courage has given me tremendous inspiration, and thank you for being my greatest support system.

ABSTRACT

Small and medium enterprises (SMEs), across sectors, have proven to be the backbone of the world's economy including Malaysia. However, according to the SME annual report in 2016, 41 percent of businesses have deteriorated in terms of sales and profit, during the third quarter of 2015. Hence, if the deterioration continues, food manufacturing will also face the impacts as 90 percent of the establishments of the food manufacturing are SMEs. Furthermore, food manufacturing is the highest contributor in manufacturing sector of SMEs, in terms of value of gross output, largest number of establishments, and largest number of employments. The deterioration of business proved that there is a presence of constraints that hinder the performance of SMEs. Thus, this study intended to investigate the constraints and their impacts towards SMEs in food manufacturing located in Kuala Lumpur. With the application of Theory of Constraints, five constraints have been identified in the literature that influence the performance of food manufacturing SMEs, namely: (i) institutional constraints, (ii) financial constraints, (iii) external constraints, (iv) internal constraints, and (v) social constraints. A framework consisting of five independent variables and one dependent variable was developed. In order to meet the research objectives, this study employed quantitative method by conducting a self-administered survey questions to 135 SMEs in food manufacturing. The distribution of questionnaires was conducted by hand and through electronic mail. The same method was applied in data collection. The results from correlation and multiple regression have identified that financial, external, and social constraints were significant to the performance of SMEs in food manufacturing. On the other hand, institutional and internal constraints were not significant to the performance. Thus, greater initiatives and collaboration from various parties that are involved directly and indirectly with SMEs in food manufacturing, are needed in order to reduce these constraints. Reduction and elimination of constraints faced by SMEs would enhance the performance of food manufacturing SMEs. This study has managed to produce a model of constraints that have an impact on the performance of food manufacturing SMEs. In conclusion, this study provided clearer understanding of the food manufacturing practices in Malaysia and offer several implications for research, policymakers, and practitioners.

ABSTRAK

Perusahaan kecil dan sederhana (PKS) yang terdiri dari pelbagai sektor, telah terbukti menjadi tunjang kepada ekonomi dunia termasuklah di Malaysia. Tetapi, menurut laporan tahunan PKS pada tahun 2016, 41 peratus perusahaan telah mengalami kemerosotan dari segi jualan dan keuntungan, pada suku tahun pertama 2015. Jika kemerosotan ini berterusan, industri pembuatan makanan dikhuatiri akan terkesan kerana, 90 peratus perusahaan pembuatan makanan adalah dikalangan PKS. Tambahan pula, pembuatan makanan adalah penyumbang tertinggi di sektor pembuatan PKS, dari segi nilai output kasar, bilangan penubuhan terbesar, dan bilangan pekerjaan terbesar. Kemerosotan perniagaan membuktikan bahawa terdapat kehadiran kekangan yang menghalang prestasi PKS. Disebabkan itu, tujuan penyelidikan ini dijalankan adalah untuk menyiasat kekangan dan kesan kekangan tersebut dalam halangan prestasi PKS dalam pembuatan makanan di Kuala Lumpur. Dengan mengaplikasi “Theory of Constraints” lima kekangan telah dikenalpasti dari kajian literatur telah menjadi penghalang prestasi pembuatan makanan PKS, iaitu: (i) kekangan institusi, (ii) kekangan kewangan, (iii) kekangan luar, (iv) kekangan dalaman, dan (v) kekangan sosial. Rangka kerja yang terdiri daripada lima pembolehubah bebas dan satu pemboleh ubah bergantung telah dibina. Untuk memenuhi objektif penyelidikan, kajian ini telah menggunakan kaedah kuantitatif dengan menjalankan soalan kaji selidik kepada 135 PKS dalam pembuatan makanan. Pengedaran kaji selidik telah dijalankan melalui pemberian terus dan mel elektronik. Kaedah yang sama dijalankan terhadap pengumpulan data. Hasil kajian telah mengenalpasti bahawa kekangan kewangan, kekangan luaran, dan kekangan sosial adalah penting kepada prestasi PKS dalam pembuatan makanan. Manakala, kekangan institusi, dan kekangan dalaman adalah tidak penting terhadap prestasi. Sehubungan itu, inisiatif dan kolaborasi yang lebih baik diperlukan dari pelbagai pihak yang terlibat secara langsung dan tidak langsung dengan PKS dalam pembuatan makanan, untuk mengurangkan kekangan ini. Prestasi pembuatan PKS diyakini akan bertambah baik jika kekangan yang dihadapi oleh PKS dikurangkan atau dihapuskan. Kajian ini telah berjaya menghasilkan sebuah model kekangan yang mempunyai pengaruh penting kepada PKS dalam bidang pembuatan makanan. Sebagai kesimpulan, kajian ini memberikan pemahaman yang lebih jelas tentang industri pembuatan makanan di Malaysia dan menawarkan beberapa implikasi untuk penyelidikan, pembuat dasar, dan pengamal terlibat.

ACKNOWLEDGEMENTS

Alhamdulillah, praise to the Almighty Allah, I am able to complete this journey.

First, I would like to express my deepest appreciation to my supervisor, Dr. Fararishah Abd Khalid, for her continuous support and guidance throughout the completion of this thesis. I am extremely honored to be supervised by someone who is patient, supportive, and dedicated.

To Associate Professor Dr. Juhaini Jabar, my second supervisor, I would like to express my eternal gratitude to her, for opening up the opportunity for me to continue my study. Your kindness and guidance has made this journey possible.

Special thanks go to the staff of Faculty of Technology Management and Technopreneurship (FPTT) who helped me during the completion of this thesis. My deepest appreciation also goes to my friends in the 'Postgraduate Room' who assisted me throughout the process.

Finally, I would like to thank the respondents who had agreed to participate in this study.

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LIST OF ABBREVIATIONS

BNM	-	National Bank of Malaysia (Bank Negara Malaysia)
CGC	-	Credit Guarantee Corporation
df	-	Degree of freedom
DFI	-	Development Financial Institutions
DOSM	-	Department of Statistics Malaysia
EC	-	External constraint
FC	-	Financial constraint
IC	-	Internal constraint
ITC	-	Institutional constraint
M	-	Mean
MDV	-	Malaysia Debt Ventures Berhad
MIDA	-	Malaysian Investment Development Authority
MITI	-	Ministry of International Trade and Industry
p	-	Significant value
PO	-	Performance of organizations
SC	-	Social constraint
SD	-	Standard deviation
Sig	-	Significant
SMEs	-	Small and medium enterprises
TOC	-	Theory of Constraints

- VIFs - Variance inflation factor
- β - Beta value

LIST OF PUBLICATIONS

Journal Article

Kamaruddin, N. I., Khalid, F. A., & Jabar, J. (2018). Impact of Constraints Towards Performance of Food Manufacturing SMEs in Malaysia. *Journal of Fundamental and Applied Sciences*, 10(6S), 822-838.

CHAPTER 1

INTRODUCTION

1.1 Introduction

During the past three decades, Malaysia has experienced considerable economic and social transformations that have triggered massive and rapid urbanization; 75% of the population lives in urban areas (Worldbank, 2015). As for Kuala Lumpur (KL), it has undergone a reorientation process from being a federal capital to becoming one of South-East Asia's most prominent, modern and sophisticated cities since the early 1990s (Shokoohi and Nikitas, 2017). Its current identity however is dictated not only by economic growth and significant social and physical transformations but also these changes have led to the sprawl of KL's population towards the southern part of KL, leaving most parts of the city centre for businesses. According to Jusoh (2009), Kuala Lumpur City-Region, is the most developed region in the country and an important catalyst towards national economic growth the nation.

Meanwhile, according to the Economic Planning Unit of the country, manufacturing industries in Malaysia contributed to RM1,110.9 billion during the Tenth Malaysia Plan which were from the year 2011 to 2015, with an annual growth rate of 4.8%. The Second Industrial Master Plan (IMP2) which was implemented from 1996 to 2005 also achieved positive outcomes. Thus, in the Third Industrial Master Plan (IMP3) for the period of 2006-2020, the manufacturing sector is expected to continue its successful run and grow at 5.6% annually. This shows that, manufacturing is a major growth sector in Malaysia. In line with this trend and to attain its target, the Malaysian government has outlined various initiatives,

strategies and approaches with the goal of realizing the nation's objective of becoming a developed country by 2020. Apart from achieving global competitiveness, the manufacturing sector also needs to sustain its growth momentum during the period. According to the Department of Statistics Malaysia (DOSM), the manufacturing sector in Malaysia is divided into eight main industries:

- a) Vegetable and animal oils and fats and food processing,
- b) Beverages and tobacco products,
- c) Textiles, wearing apparel and leather products,
- d) Wood products, furniture, paper products and printing,
- e) Petroleum, chemical, rubber and plastic products,
- f) Non-metallic mineral products, basic metal and fabricated metal products,
- g) Electrical, electronic and optical products, and
- h) Transport equipment, other manufacturing and repairs

The Malaysian manufacturing sector creates demand for fast productivity growth service sub-sectors which include finance, transportation and telecommunications. Apart from this, the manufacturing sector also provides a platform for spins-offs in production services such as design consultancies and engineering with its production and processes. (Tehseen and Ramayah, 2015). The comparative advantage in Malaysian manufacturing sector results into situation of healthy balance of payments and leads towards standards of living as well.

This study will focus on the food industry as it is a major global industry. The increased demands on food supply and its related industries has made food processing

industries one of the most popular topics for research and development, compared to other industries.

Great initiatives have been made to expand and diversify the food industry in the country to make Malaysia one of the most successful food production and distribution hubs in the region. Over time, the significant improvement in the performance of the food industry in Malaysia was noticed and it subsequently increased the competitiveness of the industry. This is in parallel with the contributions of the food industry to the Malaysia's Gross Domestic Products (GDP) over the years. From Table 1.1, it can be seen that the performance of the food manufacturing industry (which is measured by number of establishments, gross output, value added elements and number of employees) significantly increased in all areas between 2010 and 2015. In terms of the number of establishments, there was a significant increase from 5,930 establishments in 2010 to 8,063 establishments in 2015. The total percentage share of contribution to the overall manufacturing industries also increased from 14.9% in 2010 to 16.4% in 2015. As for the gross output, the total percentage share of contribution remained the same in 2010 as in 2015, at 17.5%. In addition, there was an increase in value of more than RM50 billion in 2015. There were also slight improvements in percentage share contribution for value-added products and services: 10.5% in 2010, and 10.8% in 2015. In terms of value-added products and services, there was an increase in amount closer to RM10 billion; in 2010, the amount was at RM17.9 billion and in 2015, it increased to RM27.8 billion. As for the number of employees, both the number of people in employment and percentage share of contribution were increased from 2010.

Table 1.1: Performance of food manufacturing in 2010 and 2015

Year	Number Of Establishments		Gross Output		Value Added		Employments number	
	Number	Share (%)	RM Billion	Share (%)	RM Billion	Share (%)	Number	Share (%)
2015	8,063	16.4	199.8	17.5	27.8	10.8	256,908	12.1
2010	5,930	14.9	146.6	17.5	17.9	10.5	196,084	10.8

Source: Department of Statistics Malaysia (2016)

In addition, as highlighted by the Ministry of International Trade and Industry (MITI), the food industry is one of the 12 industries in the manufacturing sector that has been targeted for further development and promotion during the IMP3 (MITI, 2006). The 12 industries consist of non-resourced (electrical and electronics; medical devices, textiles and apparels; machinery and equipment; metals; and transport equipment) and resource-based industries (petrochemicals; pharmaceuticals; wood based; rubber based; oil palm based; and food processing). The food industry is categorized as a resourced-based industry. The contributions of these industries are greater in terms of value added goods and services; technology; exports; knowledge content; multiplier and spin-off effects; and potential for regional and global integration. IMP3 targeted the export value of the food industry to reach RM244.6 billion by the year 2020 at an average annual growth of 7.8%. As for investment value, the food industry is targeted to achieve RM24.6 billion, with 6.2% of annual growth at the end of the IMP3 period.

However, the food industry is facing an era of rapid transformation, driven by changes in information technology, globalization, genetic development, intellectual property rights, and health and safety concerns (Md. Nor et al., 2016). According to Heneghan (2017), there are six biggest challenges facing the food and beverages industry lately. First, sugar reduction. It will be on to be top of mind for product developers and thus, companies will be

looking on ways to retain the same product quality, in terms of mouth feel, flavour profile, and sweetness. Second, differentiation. The outcome of product innovation over the years has making differentiation among products as one of the biggest challenges among the producers. Third, conveniences. This is due to the trend of people preferences towards on-the-go snack rather than a complete meal. Lacking of time has making a convenience food products to be more popular option among consumers.

Fourth, changing demands of consumer. In the marketplace, rising consumer demand for products that are grown sustainably, minimally processed, ethically sourced and made with natural ingredients is creating instability within the global food and agricultural supply chain. Food companies and their trading partners must create a new supply chain framework that allows them to serve the needs of consumers without sacrificing price, product availability, convenience and efficiency. Fifth, adapting to recent and impending policy changes. Globally, food companies will be challenged by the proliferation of the World Health Organization's (WHO) food and nutrition policy recommendations for member states. Thus, food companies must be aware of the changes imposed by the regulatory bodies such as WHO. Last but not least, food safety. Safety of food that consumed by the consumers were among the biggest challenges faced by the food producer. It is essential that the private sector and individual governments to come together and develop a harmonized approach in creating standards and guidelines for food safety.

Furthermore, there is a dichotomy, as seen in the structure of food industry sectors in Malaysia. On one hand, there are large industries which are more organized and which mostly use modern and state-of-the-art machinery and technologies. They are well-provided with ample capitalization and continuous supply of raw materials, whether domestically or internationally. With these advantages, the large industries manage to keep up with the

dynamic changes of the market. In contrast, most Small and Medium Enterprises (SMEs) generally use low technologies or are manually operated and they depend on government assistance. On top of that, according to the Malaysian Investment Development Authority (MIDA), most of the establishments in food manufacturing are dominated by SMEs.

SMEs in Malaysia are currently estimated to be responsible for about 65% of the number of people in employment, and to contribute approximately 37% to the country's GDP (The Star, 2017). According to the SME Master Plan 2012-2020, the targeted contribution to the GDP by SMEs is 41% by 2020, and the employment rate would be 69%. Although there is a significant increase in the employment rate, the contribution of GDP by SMEs is still going at a slow pace, as shown in Figure 1.1. Furthermore, it shows that for the past two years from 2014 to 2016, the mean of increase rate of GDP per annum is 0.35%. If the rate of increase per annum is maintained, the contribution to the GDP by SMEs by the year 2020 is estimated to be only 38.35%, a lack of 2.65% from the estimated target. This shows that SMEs do not perform according to their intended targets and objectives. The inability of SMEs to succeed and perform according to their targets is an indication that there are a presence of constraints to the development of SMEs. If the constraints and limitations still persist against the development of SMEs, the result might be failure and bankruptcy for the SMEs.