



**Faculty of Technology Management and  
Technopreneurship**

**THE ADOPTION OF HALAL STANDARDS  
TOWARDS THE PERFORMANCE OF MALAYSIAN FOOD  
MANUFACTURING SMEs**

**Fadhlor Rahim bin Azmi**

**Master of Science in Technology Management**

**2017**

**THE ADOPTION OF HALAL STANDARDS  
TOWARDS THE PERFORMANCE OF MALAYSIAN FOOD  
MANUFACTURING SMEs**

**FADHLUR RAHIM BIN AZMI**

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

**Faculty of Technology Management**

**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

**2017**

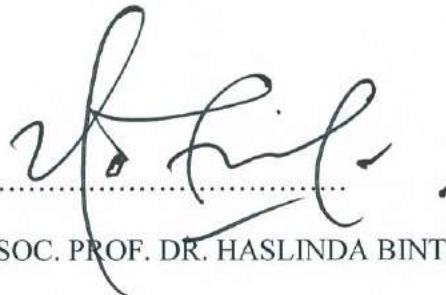
## DECLARATION

I declare that this thesis entitled “The Adoption of Halal Standards towards the Performance of Malaysian Food Manufacturing SMEs” 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.

Signature :   
Name : FADHLUR RAHIM BIN AZMI  
Date :

## 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.

Signature :   
Supervisor Name : ASSOC. PROF. DR. HASLINDA BINTI  
MUSA  
Date :

## **DEDICATION**

I dedicate this thesis to my beloved father and mother, Mr. Azmi bin Musa, Mdm.

Ruhani binti Muhamed and also to my lovely family.

## ABSTRACT

Increasing Muslim community in Malaysia causes the need for Halal product demand to grow. The Malaysian Government is committed to this Halal industry and is keen to create an international Halal Hub that will operate in Malaysia. Small and Medium Enterprises (SMEs) have the potential to serve as one of the platforms for the hub as various forms of assistance have been provided by the government to ensure that SMEs are more competent and competitive in line with international requirements. The Halal Standards in this study have been outlined as a guideline for research management innovation and the effect is very less emphasized at the moment. A total of 183 SMEs comprising the food industry in Malaysia were selected as samples for this study. Among the questions raised to these SMEs are "what are the key determinants of adopting these Halal standards on improving their performance"? To determine Halal standards factors, the study utilized an exploratory factor analysis to assess the structural factors of the scale. The study also used regression analysis to test the key determinants and the extent to which the use of Halal standards improves SME performance. The results of this study showed that the behavioral factors in the organization towards Halal standards could be clearly comprehended from this developed model. This study also provides advantages over the acceptance of innovation management (Halal standards), organizational management performance and its implications on Halal practices. This in turn helps the government or policy makers to understand in greater details the key contributors to the acceptance of general innovation management and Halal standards, particularly towards improving the performance of SME industry in global realms.



## **ABSTRAK**

*Peningkatan komuniti Islam di Malaysia menyebabkan keperluan kepada permintaan produk Halal semakin meningkat. Kerajaan Malaysia amat komited terhadap industri Halal ini serta berkeinginan untuk mewujudkan sebuah Hub Halal antarabangsa yang akan beroperasi di Malaysia. Perusahaan Kecil dan Sederhana (PKS) berpotensi untuk dijadikan sebagai salah satu platform kepada hub ini kerana pelbagai bentuk bantuan telah diberikan oleh kerajaan bagi memastikan PKS ini lebih kompeten serta berdaya saing selari dengan kehendak dan keperluan antarabangsa. Piawaian Halal dalam kajian ini telah digariskan sebagai satu garis panduan kepada inovasi pengurusan penyelidikan dan kesannya amat kurang dititikberatkan pada masa ini. Sebanyak 183 buah PKS yang terdiri daripada industri makanan di Malaysia terpilih sebagai responden bagi kajian ini. Antara persoalan yang diutarakan kepada PKS ini seperti “apakah penentu utama untuk menerima pakai piawaian Halal ini terhadap peningkatan prestasi mereka”. Untuk menentukan faktor piawaian Halal, kajian menggunakan analisis faktor penerokaan untuk memenuhi keperluan kajian untuk menilai struktur faktor yang di skalakan. Kajian juga menggunakan analisis regresi untuk menguji faktor penentu yang utama dan menguji sejauh mana penggunaan piawaian Halal meningkatkan prestasi PKS. Hasil kajian ini mendapati faktor tingkah laku di dalam organisasi terhadap piawaian Halal dapat difahami dengan jelas daripada model yang dibangunkan ini. Kajian ini juga memberi kelebihan terhadap penerimaan pengurusan inovasi (piawaian Halal), prestasi pengurusan organisasi serta implikasinya terhadap amalan Halal. Ini seterusnya dapat membantu kerajaan atau penggubal dasar untuk memahami dengan lebih terperinci akan penyumbang utama kepada penerimaan pengurusan inovasi amnya dan piawaian Halal khususnya ke arah peningkatan prestasi industri PKS secara lebih global.*

## ACKNOWLEDGEMENTS

Alhamdulillah. Praise be to Allah (SWT) the Almighty for a success completion of this thesis. This challenging journey, in the pursuit of my master study, has finally reached its destination. Thanks Allah and the prayers of my loved ones. I would never have done this alone without the support of loving people around me.

I wish to convey my utmost gratitude to Assoc. Prof. Dr. Haslinda Binti Musa, my supervisor for her encouragement, valuable suggestions and advice during the entire period of this research. Without her assistance this thesis would not have been possible. She has also given me opportunities and great experience as Graduate Research Assistant for her research project.

Special thanks to my second supervisor, Assoc. Prof. Dr. Norfaridatul Akmaliah Binti Othman, who provides me with valuable advice and suggestion.

My sincere thanks also go to lecturers of FPTT and FKP who have helped me a lot during my thesis writing and in ensuring that I'm not alone facing this journey, together motivating each other; Pak Ip, Ir. Dr. Yuhazri, Dr. Saifudin and Dr. Fam. My beloved friends have also helped me a lot, Amir, Bro Zem, Kak Liza, Kak Fadzlin and all fellow postgraduate friends at FPTT, FKP, IPTK's staff and Persatuan Seni Silat Cekak Cawangan Negeri Melaka. Thank you so much.

Finally, I wish to express my gratitude and utmost appreciation to my beloved parents Mr. Azmi Musa and Mdm. Ruhani Mohamed and not to forget my siblings, Kak Long, Kak Ngah, Fadh, Nurul, Siti, Farah, Solihin, Iskandar, Hakim and Adik Intan for their prayers and encouragements during my journey. Words of mouth are not enough to thank you all. May Allah repay all of you with good and piety in return.



## TABLE OF CONTENTS

	PAGE
<b>DECLARATION</b>	
<b>APPROVAL</b>	
<b>DEDICATION</b>	
<b>ABSTRACT</b>	i
<b>ABSTRAK</b>	ii
<b>ACKNOWLEDGEMENTS</b>	iii
<b>TABLE OF CONTENTS</b>	iv
<b>LIST OF TABLES</b>	vii
<b>LIST OF FIGURES</b>	x
<b>LIST OF APPENDICES</b>	xi
<b>LIST OF ABBREVIATIONS</b>	xii
<b>LIST OF PUBLICATIONS</b>	xiii
<b>AWARD</b>	xvi
<b>CHAPTER</b>	
<b>1. INTRODUCTION</b>	<b>1</b>
1.0 Overview	1
1.1 Food Manufacturing Industry – Halal Perspectives	2
1.2 Small Medium Enterprises (SMEs) in Malaysia	4
1.3 Halal Concept	5
1.3.1 Malaysia Halal Standards	7
1.3.2 MS 1500:2009 Halal Food	9
1.4 Background of the Study	10
1.5 Problem Statement	13
1.6 Scope of the Study	14
1.7 Significance of the Study	15
1.8 Research Questions and Research Objectives	15
1.9 Summary of Chapter	16
<b>2. LITERATURE REVIEW</b>	<b>18</b>
2.0 Introduction	18
2.1 The Definition of Halal Standards	18
2.2 Scenario of Halal Awareness	19
2.3 Impact of Halal Standards on Business Performance	22
2.4 Adoption Theory and the Implementation to Organisations	24
2.5 Summary of Chapter	25
<b>3. CONCEPTUAL FRAMEWORK</b>	<b>27</b>
3.0 Introduction	27
3.1 Theoretical Background	27
3.1.1 Diffusion of Innovation	28
3.1.2 Technology-Organizational-Environmental Framework (TOE)	29
3.2 Conceptualization of the Adoption Factors of Halal Standard	30
3.3 Theory and Practice in SMEs Performance	32

3.4	Conceptual Model and Hypotheses Development	34
3.4.1	Technological Factors	34
3.4.2	Organisational Factors	36
3.4.3	Environmental Factors	42
3.4.4	Business Performance as a Result of Adoption of Halal Standards	45
3.5	Summary of Chapter	48
<b>4.</b>	<b>RESEARCH METHODOLOGY</b>	<b>49</b>
4.0	Introduction	49
4.1	Research Design	49
4.1.1	Research Process	51
4.1.2	Operationalisation of Constructs – Development of Questionnaire	54
4.2	Population and Sampling	64
4.2.1	Sampling Technique	64
4.2.2	Sample Size Determination	65
4.2.3	Distribution of Survey Questionnaires	66
4.3	Pilot Testing for Instrument	67
4.4	Data Analysis Procedure	68
4.4.1	Independent Sample T-Test	69
4.4.2	Missing Data Analysis	70
4.4.3	Check of Outlier	70
4.4.4	Reliability and Validity	70
4.4.5	Frequency and Mean Score	71
4.4.6	Exploratory Factor Analysis	71
4.4.7	Regression Analysis	72
4.5	Summary of Chapter	72
<b>5.</b>	<b>RESULT AND DISCUSSION</b>	<b>74</b>
5.0	Introduction	74
5.1	Sample T-Test Analysis	75
5.2	Reliability Analysis Results	76
5.3	Frequency Analysis Results (Respondents Profile)	77
5.4	Descriptive Analysis for Adoption Factors of Halal Standards	78
5.5	Exploratory Factor Analysis (Adoption Factors of Halal Standards)	83
5.6	Regression Analysis	95
5.6.1	Hypotheses Testing	95
5.6.2	The Strongest Factor towards HS Adoption	103
5.6.3	Analyse the SMEs Performance towards the Adoption of HS	105
5.7	Discussion of the Results	107
5.8	Summary of Chapter	113
<b>6.</b>	<b>CONCLUSION</b>	<b>114</b>
6.0	Introduction	114
6.1	Summary of the Findings	114
6.2	Contribution towards Knowledge	116
6.3	Contribution towards Industry	117
6.4	Limitation of Present Study	118
6.5	Direction for Future Study	118

**REFERENCES**  
**APPENDICES**

**119**  
**143**

## LIST OF TABLES

TABLE	TITLE	PAGE
3.1	Adoption Factors of Halal Standards	31
3.2	Significant Factors of Halal Standards	32
3.3	Performance Indicator for Halal Studies	32
4.1	Construct and Operational Measure for Questionnaire	56
4.2	Items Measuring for Adoption Factors of HS	59
4.3	Determining Sample Size from a Given Population	65
4.4	The Chronology of Survey Administration	67
4.5	Type of Analysis	68
5.1	T-Test Result	75
5.2	Reliability Analysis	76
5.3	Respondents Profile	77
5.4	Descriptive Analysis for Technological Factors	79
5.5	Descriptive Analysis for Organisational Factors	81
5.6	Descriptive Analysis for Environmental Factors	83
5.7	KMO and Bartlett's Test for Technological Factors	85
5.8	Total Variance Explained for Technological Factors	86
5.9	Exploratory Factor Analysis Final Results for	86

	Technological Factors	
5.10	Reliability Test for Factor Component (Technological)	86
5.11	KMO and Bartlett's Test for Organisational Factors	89
5.12	Total Variance Explained for Organisational Factors	89
5.13	Exploratory Factor Analysis Final Results for Organisational Factors	90
5.14	Reliability Test for Factor Component (Organisational)	91
5.15	KMO and Bartlett's Test for Environmental Factors	93
5.16	Total Variance Explained for Environmental Factors	93
5.17	Exploratory Factor Analysis Final Results for Environmental Factors	94
5.18	Reliability Test for Factor Component (Environmental)	94
5.19	Multiple Regression Analysis for Determining the Relationship between the Technological Factors and the Adoption of HS	96
5.20	Multiple Regression Analysis for Determining the Relationship between the Organisational Factors and the Adoption of HS	97
5.21	Multiple Regression Analysis for Determining the Relationship between the Environmental Factors and the Adoption of HS	99



5.22	Summary of Testing the Hypothesis	100
5.23	Model Summary	103
5.24	ANOVA for Adoption of HS	103
5.25	Coefficient Result for Adoption Factors	104
5.26	Model Summary	106
5.27	ANOVA for Adoption of HS	106
5.28	Coefficient Result for Adoption of HS	107
5.29	Summary of the Results	110

## LIST OF FIGURES

<b>FIGURE</b>	<b>TITLE</b>	<b>PAGE</b>
3.1	Conceptual Model	47
4.1	Research Onion Diagram	51
4.2	Research Process	53
5.1	The Relationship between the Independent Variables and the Adoption of Halal	102
5.2	Statistical Diagram	105

## LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Online Questionnaire	143
B	Output of Sample Independent T-Test	158
C	Output of Reliability Analysis (section 5.2)	160
D	Output of Descriptive statistics (section 5.4)	163
E	Output of Factor Analysis – Explanatory Factor Analysis and Reliability Analysis (section 5.5)	165
F	Output of Regression (MRA) (section 5.6.1)	176
G	Output of Regression (Linear Regression) (section 5.6.2)	177

## LIST OF ABBREVIATIONS

SMEs	-	Small Medium Enterprise
HS	-	Halal Standards
DOI	-	Diffusion of Innovation Theory
TOE	-	Technology-Organizational-Environmental Framework
HDC	-	Halal Industry Development Corporation
EFA	-	Exploratory Factor Analysis
MRA	-	Multi Regression Analysis
MIDA	-	Malaysian Investment Development Authority
SMECorp	-	SME Corporation Malaysia
MTDC	-	Malaysian Technology Development Corporation
MATRADE	-	Malaysia External Trade Development Corporation
JAKIM	-	Jabatan Kemajuan Islam Malaysia
$\chi^2$	-	Chi-square
<i>df</i>	-	Degree of Freedom
<i>p</i>	-	Significant value
<i>Sig</i>	-	Significant

## LIST OF PUBLICATIONS

### Chapter of Books

**Azmi, F.R., & Musa, H.,** (2017). Adoption Factors of Halal Standards: Malaysian Perspectives. Selected papers from the International Halal Conference 2016, revised and re-submitted to Editor of INHAC 2016. Publish by *Springer*.

### Journal and Proceeding Papers

**Azmi, F.R., Musa, H., Abdullah, A.R., Othman, N.A. and Fam, S.,** 2017. Analyzing the awareness of green technology in Malaysia practices. *Proceedings of Mechanical Engineering Research Day 2017, 2017*, pp.252-254.

**Azmi, F.R., Musa, H., Shahbodin, F., Hazmilah, H. and Fam, S.,** 2017. Implementation of green human resource management in Malaysia. *Proceedings of Mechanical Engineering Research Day 2017, 2017*, pp.257-258.

Musa, H., **Azmi, F.R., Abdullah, A.R., Hazmilah, H. and Sedek, M.,** 2017. Developing learning model in effective social entrepreneurship. *Proceedings of Mechanical Engineering Research Day 2017, 2017*, pp.290-291.

Musa, H., **Azmi, F.R., Shibghatullah, A.S., Asmala, A. and Abas, Z.A.,** 2017. The implementation of global positioning system (GPS) towards logistic service provider (LSP). *Proceedings of Mechanical Engineering Research Day 2017, 2017*, pp.250-251.



Musa, H., Azmi, F.R., Abdullah, A.R., Sedek, M. and Saad, N.M., 2017. Emotional intelligence and stress among SME entrepreneurs in Melaka: A case of entrepreneurial education. *Proceedings of Mechanical Engineering Research Day 2017, 2017*, pp.248-249.

Musa, H., Azmi, F.R., Mohamad, N., Shahbodin, F. and Fam, S., 2017. Creative industry learning and development towards craft product: Critical success factors of technopreneurship. *Proceedings of Mechanical Engineering Research Day, 2017*, pp.246-247.

Musa, H., Ab Rahim, N., Azmi, F. R., Shibghatullah, A. S., & Othman, N. A. (2016). Social Media Marketing and Online Small and Medium Enterprises Performance: Perspective of Malaysian Small and Medium Enterprises. *International Review of Management and Marketing*, 6(7S), 1-5.

Musa, H., Mohamad, N., Rajiani, I., Hasman, N. S. B., & Azmi, F. R. (2015). The website usage among private sector: A case of Malaysian business organization. *European Journal of Business and Management*, 7(6), 121-125.

Musa, H., Azmi, F. R., Ab Rahima, N., Samad, A., & Shibghatullaha, N. A. Othman. (2016). Analyzing the Effectiveness of Social Media Marketing. In: *The European Proceeding of Social & Behavioural Sciences*. pp. 1-5.

Musa, H., Azmi, F. R., Khalid, F. A., & Yunus, A. R. (2016) Analysing the Adoption of Malaysian Standards (MS) on SME Performances: The Mediating Effects of Innovation Adoption Factors. In: *Proceedings of the International Conference on Industrial Engineering and Operations Management*. Pp.976-984

#### **Conference Papers (Presentations)**

Azmi, F.R., & Musa, H., (Nov 2016). Adoption Factors of Halal Standards: Malaysian Persepectives. *3rd International Halal Conference*. Shah Alam, Malaysia.

Musa, H., Azmi, F. R., Khalid, F. A., & Yunus, A. R. (March 2016) Analysing the Adoption of Malaysian Standards (MS) on SME Performances: The Mediating Effects of Innovation Adoption Factors. *International Conference on Industrial Engineering and Operations Management*. Kuala Lumpur, Malaysia. **(Best Track Paper)**

Musa, H., Azmi, F. R., Ab Rahima, N., Samad, A., & Shibghatullaha, N. A. O. (April 2016). Analyzing the Effectiveness of Social Media Marketing. *International Soft Science Conference*. Langkawi, Malaysia.

## AWARD

**Best Track Paper Award** (March 2016). Analysing the Adoption of Malaysian Standards (MS) on SME Performances: The Mediating Effects of Innovation Adoption Factors. In *International Conference on Industrial Engineering and Operations Management*, Kuala Lumpur, Malaysia.

## CHAPTER 1

### INTRODUCTION

#### 1.0 Overview

The Halal food products have become increasingly popular among consumers worldwide, as the concept of Halal is associated with good, healthy, safe and high quality assessment. In other words, the Halal food industry should be able to guarantee and confidently ensure the Halalness of foods sold (Fathi et al., 2016). Food manufacturing is a popular mechanism in order to expand Halal business because the industry's key growth areas comprise functional food, health food, convenience food, food ingredients and Halal food (Ayupp and Tudin, 2013).

This chapter presents food manufacturing industry from various aspects; Section 1.1 covers the industry from the Halal perspective, Section 1.2 discusses the role of Small Medium and Enterprises (SMEs) in Malaysia as an economic catalyst in Malaysia, Section 1.3 reviews the Halal concept in terms of the Shariah principle and the impact of Halal. This section also highlights the Malaysian Halal Standards (HS) and Halal Food standard in Malaysia (MS 1500:2009) in Section 1.3.1 and 1.3.2. Moreover, while Section 1.4 presents background of the study or the path of this research, Section 1.5 identifies the problem of the research. Scope of the study is justified in Section 1.6 whereas the significance of the study is covered in Section 1.7. Lastly, Section 1.8 justifies research questions and objectives.



## 1.1 Food Manufacturing Industry – Halal Perspectives

Malaysian food processing industry is characterized with its cultural diversity derived from multicultural societies which offer various types of food products with Asian preferences. The industry is mostly owned by Malaysians, made up of SMEs. Besides SMEs, international companies and well-known multinational giants manufacture a wide range of food products in Malaysia. While exports of food processing for Malaysia totalled RM18.0 billion in 2015, imports amounted to RM17.8 billion (MIDA, 2017). Additionally, food processing SME is the largest of the Malaysian SMEs' main stream whereby they play an important role in sustaining economic growth to achieve a developed country status by 2020 (Bhuiyan et al., 2016).

The Halal industry in Malaysia provides immense opportunities for Malaysian food manufacturers whereby value of Halal markets is estimated at USD547 billion a year (Alam et al., 2011). The Halal industry in Malaysia provides immense opportunities for Malaysian food manufacturers. Due to the change in lifestyle, consumers are now demanding food in the form of easy-to-prepare, ready-to-cook, and ready-to-eat, however, there is also lack of support in terms of basic infrastructure for the development of the food industry (Ismail and Yusop, 2014).

Food processing refers to the economic sector that combines agricultural, seafood, natural, synthetic and/or chemical products with various forms of management, capital and labour in producing and processing value added food, confectionery and beverage products, food ingredients, food flavours and extract and other edibles that meet consumer food and refreshment needs and preferences (Adelaja et al., 2000). Thus, the government of Malaysia has improved Halal management in many areas of Halal related matters which include Halal products



and services such as food and beverage products, food premises, consumer goods such as cosmetics, personal care, clothing and equipment, pharmaceutical, slaughter house, logistic, hospitality services and finance (Zaina et al., 2015) in order to cover all the Halal sector .

Food manufacturing in Malaysia has been dominated by SMEs, yet, most of them are still reluctant to apply for Halal certification (Jari, 2014). SMEs entrepreneurs do not seriously picture the significance of Halal and its power to attract consumers in which even MATRADE encourages Halal entrepreneurs to utilize technology to enhance productivity and quality (Bernama, 2017; Jari, 2014). Furthermore, Halal industry in Malaysia provides a great opportunity for food manufacturers in Malaysia. Malaysia is renown in the development of Halal standards in line with the vision to be a Global Halal Hub in 2020. It is estimated that, the global halal food market has a potential to contribute about USD560 billion per year. Muslim consumer spending is expected to grow from US \$ 1.6 trillion in 2012 to US \$ 2.4 trillion in 2018 (MIDA, 2017).

SMEs are one of the main catalysts for economic growth in Malaysia whereby they become a medium to drive Halal business. Hashi and Krasniqi (2011) asserted that SMEs are widely viewed as important to the growth and stability of economy and they must improve in terms of entrepreneurial and management skills. In Halal context, SMEs will expand Halal business especially in Malaysia. However, they must focus on factors such as environmental and individual in order to be a clear wake-up call for the implementation of new programs and policies to increase the number of entrepreneurs (Chong, 2012).