

**TECHNOLOGY UTILIZATION FACTORS OF FOOD MANUFACTURING IN  
SMALL AND MEDIUM ENTERPRISE (SME)**

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'I/We hereby declared that I/We had read through this thesis and in my opinion that this thesis is adequate in terms of scope and <sup>quality</sup> which fulfill the requirements for the award of Bachelor of Technology Management (Innovation)

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**The thesis is submitted in partial fulfilment of the requirements for the award of  
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**Faculty of Technology Management and Technopreneurship  
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## DECLARATION OF ORIGINAL WORK

“I hereby declare that this report is the result of my own, except certain explanations and passage where every of it is cited with source clearly.”

Signature :  
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Date :

## **DEDICATION**

I would like to dedicate the appreciation to my family members who supported me in terms of spiritual and financial, beloved supervisor and panel who guided me throughout the research and course mates that assisted me through the journey of research.

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## ABSTRACT

Technology is one of the most important tools used by food manufacturing to maintaining the firm's success in the production. The factor been highlighted which is Cost of technology (Price), Perceived ease of Usefulness of Technology, Perceived of Usefulness, Required skill of the technology (Knowledge) and Technology Performance is the most overlapped and important factors to be analyzed and evaluated to get better understanding on the technology utilization of food manufacturing in Small and Medium enterprise (SME). Moreover, in this era technology is become most powerful tool which brings the firm's business to the next level in term of production, enhancement of products and fastest manufacturing process. For that reason, this study was conducted to investigate the Technology Utilization Factors of Food manufacturing in Small and Medium Enterprise (SME). The data for this study was collected using questionnaires from 234 respondents from overall states in Malaysia. The collected data was analysed and discussed. The outcomes of the study will be a new insight in restructuring the existing usage of technology in food manufacturing in (SME).

**Keywords:** Technology utilization, technology factors, food manufacturing in SME.

## ABSTRAK

*Teknologi adalah salah satu alat yang paling penting yang digunakan oleh pengilangan makanan untuk mengekalkan kejayaan firma dalam pengeluaran. faktor yang difokusdi sini adalah Kos teknologi (Harga), kemudahan Persepsi Kebergunaan teknologi, Persepsi Kebergunaan, Kemahiran yang diperlukan teknologi (Pengetahuan) dan Prestasi Teknologi adalah yang paling bertindih dan faktor-faktor penting yang perlu dianalisis dan dinilai untuk mendapatkan pemahaman yang lebih baik ke atas penggunaan teknologi pembuatan makanan dalam Perusahaan Sederhana dan Kecil (PKS). Selain itu, dalam era yang sedang membangun ini teknologi telah menjadi alat yang paling berkuasa yang membawa perniagaan syarikat ke peringkat seterusnya dari segi pengeluaran, peningkatan produk dan proses pembuatan terpantas. Atas sebab itu, kajian ini dijalankan untuk mengkaji penggunaan Faktor Teknologi di sektor Pembuatan Makanan di Sederhana dan Kecil (PKS). Data untuk kajian ini dikumpulkan dengan menggunakan soal selidik daripada 234 responden dari semua negeri keseluruhan Malaysia. Data yang diperolehi dianalisis dan dibincangkan. Hasil kajian akan menjadi wawasan baru dalam penyusunan semula penggunaan yang sedia ada teknologi dalam pembuatan makanan di (PKS).*

**Kata kunci:** *penggunaan Teknologi, faktor teknologi, pembuatan makanan di PKS*



**TABLE OF CONTENT**

<b>CHAPTER</b>	<b>CONTENT</b>	<b>PAGES</b>
	<b>RECOGNITION</b>	i
	<b>DECLARATION OF ORIGINAL WORK</b>	ii
	<b>DEDICATION</b>	iii
	<b>ACKNOWLEDGEMENT</b>	iv
	<b>ABSTRACT</b>	v
	<b>ABSTRAK</b>	vi
	<b>TABLE OF CONTENT</b>	vii-x
	<b>LIST OF TABLES</b>	xi-xiii
	<b>LIST OF FIGURES</b>	xiv
	<b>LIST OF EXHIBIT</b>	xv
	<b>LIST OF DIGRAM</b>	xv
	<b>LIST OF ABBREVIATION</b>	xvi
	<b>LIST OF APPENDIX</b>	xvi

**CHAPTER 1 INTRODUCTION**

1.0 Introduction	1
1.1 Background of Study	1-3
1.2 Problem Statements	4-5
1.3 Research Questions	5
1.4 Research Objectives	6
1.5 Scope of Study	6
1.6 Research Limitations and Key assumption	6-7
1.7 Summary	8

**CHAPTER 2 LITERATURE REVIEW**

2.0 Introduction	9
2.1 Food Manufacturing Sector in Malaysia	10-11
2.2 Small and Medium Enterprise	11-14
2.3 Technology Adoption	14-15
2.4 Technology Utilization Factor of Food Manufacturing in Small and Medium Enterprise	16
2.4.1 Cost of the Technology (Price)	16-17
2.4.2 Perceived Ease of Use	17- 18
2.4.3 Perceived of Usefulness the Technology	19
2.4.4 Required Skill of the Technology	20-22
2.4.5 Technology Performance	22-24
2.5 Theoretical Framework	24- 25
2.6 Discussion on Factors	25-26
2.7 Summary	27

<b>CHAPTER 3</b>	<b>RESEARCH METHODOLOGY</b>	
3.0	Introduction	27
3.1	Research Design	28-29
3.2	Methodology Choices	29-30
3.3	Primary and Secondary Data Source	30-31
3.4	Location of Research	32
3.5	Research Strategy	32-33
3.5.1	Questionnaire Development	34
3.5.2	Pilot Testing	34-35
3.5.3	Validity	35-36
3.5.4	Large Scale Survey	36
3.5.5	Data Analysis and Discussion	36
3.6	Time Horizon	37
3.7	Summary	37
<b>CHAPTER 4</b>	<b>DATA ANALYSIS</b>	
4.0	Introduction	38-39
4.1	Pilot Test	40
4.2	Descriptive Statistics Analysis	41
4.3	Results Dissemination Questionnaire	41-42
4.4	Respondent Profile Analysis	43-44
4.4.1	Gender	44-45
4.4.2	Age	46-47
4.4.3	Education Level	47-48
4.4.4	State	49-50
4.4.5	Income level	51-52
4.4.6	Year of Business Operates	52-53
4.5	Reliability	54-56
4.6	Correlation	57-60
4.7	Discussion on Correlation Result of Factor Knowledge and Demographic	61-68
4.8	Hypothesis	68

4.9 Summary	69
<b>CHAPTER 5 CONCLUSION AND RECOMMENDATIONS</b>	
5.0 Introduction	70
5.1 Summary of the Descriptive Analysis	50-72
5.2 Scale Measurement	72
5.2.1 Reliability	72
5.3 Discussion of Research Objectives and	73
5.3.1 To verify the current technology utilization factors.	73
5.3.2 To analyze the correlation between technologies utilization factors in food manufacturing in small and medium enterprise.	73-74
5.4 Implication of Study	74-75
5.5 Limitation	75-76
5.6 Recommendation	76-77
5.7 Conclusion	77-78
5.7 Summary	78-79
<b>REFERENCES</b>	80-84
<b>APPENDIX</b>	85-95

## LIST OF TABLES

TABLE	TITLE	PAGE NUMBER
2.1	The table below summarizes the approved SME definitions based on number of full-time employees (National SME Development Council, 2015)	12
2.2	The table below summarizes the approved SME definitions based on annual sales turnover - National SME Development Council,2015	13
2.3	Technology Utilization Factor of Food Manufacturing in Small and Medium Enterprise	25
4.1	Pilot Test	40
4.2	Results Dissemination Questionnaire	42
4.3	Summary Total of Respondent	43
4.4	Gender	44
4.6	Age	46
4.7	Education Level	47
4.8	State	49

4.9	Income Level per Year	51
4.10	Years of Business Operates	52
4.11	Cronbach's Alpha Coefficient Range and Its Strength of Association	54
4.12	Reliability Test of Factors	55
4.13	Mean and Standard Devotion of Factors	55
4.14	Result of Correlations Analysis: Result of Correlations Analysis	57
4.15	Summary of Correlation Relationship	59
4.16	Knowledge and Gender	62-63
4.17	Knowledge and Education	64-65
4.18	Knowledge and Income Level Per Year	65-66
4.19	Knowledge and Year of Business Operates	67-68

## LIST OF FIGURES

<b>FIGURE</b>	<b>TITLE</b>	<b>PAGE NUMBER</b>
1.1	Distribution of SMEs in Service Sector by Sub-Sector and size (Source: SME Corp.Malaysia)	3
1.2	Distribution of SMEs in Manufacturing Sector by Sub Sector (SME Corp. Malaysia)	3
4.1	Gender	45
4.2	Age	46
4.3	Education Level	48
4.4	State	50
4.6	Years of Business Operates	53
4.5	Income Level per Year	51

**LIST OF EXHIBIT**

<b>EXHIBIT</b>	<b>TITLE</b>	<b>PAGE NUMBER</b>
Exhibit 3.1	Design in research process	29
Exhibit 3.2	Survey lifecycle from a Design Perspective	33



**LIST OF DIGRAM**

<b>DIAGRAM</b>	<b>TITLE</b>	<b>PAGE NUMBER</b>
Diagram 3.3	Questionnaire Development	34
Diagram 3.2	Pilot Testing Process	35

## LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
SME	Small and Medium Enterprise
IMP	Industrial Master Plan
GDP	Gross Domestic Product
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
SPSS	Statistical Packages for Social Science
TC	Technology Performance
PEOU	Perceived Ease of Usefulness of Technology
POU	Perceived of Usefulness of Technology
RS	Required Skill of the Technology (Knowledge)
TC	Technology Performance

**LIST OF APPENDIX**

<b>APPENDIX</b>	<b>TITLE</b>
1	Appendix Gant Chart PSM 1
2	Appendix Gant Chart PSM 2
3	Descriptive Statistic
4	Questionnaire

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.0 Introduction**

In this chapter the researcher will discuss on the technology utilization factors of food manufacturing in small and medium enterprise Melaka. Besides background of study, problem statement, research question, research objective, scope of study, research limitation and key assumption and significant of study will be explained in details thought out this chapter.

#### **1.1 Background of Study**

Small and Medium enterprise (SME) are known as one of the biggest cooperation in Malaysia (Ebrahim, Ahmed, &Taha, 2010) whereby SMEs are backbone of Malaysian's economy. Ninety-seven percent of business establishment in Malaysia are SMEs. Therefore, SME contributes and plays an important role in the economic development of our country. SMEs role are in terms of production, employment generation, contribution to exports and facilitating equitable distribution of income is very critical. In Malaysia there are many sectors run by SME cooperation with different ranking and contribution level. Food sector is known as one of the big sector that operates under SME in Malaysia (SME Corp. Malaysia).

Malaysia food industry is diverse as Malaysia has multicultural with wide range of food choices with variety of taste. Food industry is predominantly Malaysia owned and dominated by SME. Food sectors in our country encompasses many kind of sectors such as cocoa and chocolate products, fishery products, cereals and cereal products, processed fruits and vegetables, confectionery, herbs and spices, beverages, animal feed and others. Food industry are plays a main role in Malaysian industry (SME Corp.Malaysia).

In Malaysia the food industry deserves to be one of the biggest industries. Figure 1.1 illustrates the distribution of SMEs in Service Sector by Sub-Sector and size (SME Corp.Malaysia) indicates that foods and beverages manufacturing are placed second of the overall sectors that operates in Malaysia this prove that the food industry is the biggest industry. According to Figure 1.2 distribution of SMEs in Manufacturing Sector by Sub- Sector and Size (SME Corp.Malaysia) food and beverage products are in second place. This both figures describe the total contribution of food sector of SME in our country (SME Corp.Malaysia).

Technology is a driving force of innovation today, challenging even the most established companies to modernize and reimaging how they stay relevant. Technology utilization in business filed will be a compulsory thing to eliminate some defect and failure to the business.

**Figure 1.1 : Distribution of SMEs in Service Sector by Sub-Sector and size  
(Source: SME Corp.Malaysia)**

Distribution of SMEs in Services Sector by Sub-Sector and Size				
Sub Sector	Micro	Small	Medium	Total SMEs
Wholesale and Retail Trade & Repair of Motor Vehicles and Motorcycles	228,113	55,048	6,637	289,798
Food and Beverage Services	117,020	24,459	1,242	142,721
Transportation and Storage	34,790	3,901	1,334	40,025
Personal Services and other activities	34,427	2,218	76	36,721
Professional, Scientific, and Technical Services	10,777	7,384	893	19,054
Administrative and Support Service	7,543	2,661	405	10,609
Human Health and Social Work	6,257	2,617	166	9,040
Real Estate Activities	6,107	1,833	240	8,180
Education	5,672	1,923	343	7,938
Arts, Entertainment and Recreation	5,174	874	169	6,217
Financial Services	3,973	1,129	254	5,356
Accommodation	1,448	985	384	2,817
Information and Communication	722	873	285	1,880
Water supply; Sewerage, Waste Management and Remediation activities	381	112	29	522
Electricity, Gas, Steam and Air Conditioning Supply	16	44	47	107
<b>Total</b>	<b>462,420</b>	<b>106,061</b>	<b>12,504</b>	<b>580,985</b>

**Figure 1.2 : Distribution of SMEs in Manufacturing Sector by Sub Sector  
(SME Corp. Malaysia)**

Distribution of SMEs in Manufacturing Sector by Sub-Sector and Size				
Sub Sector	Micro	Small	Medium	Total SMEs
Textiles & Wearing Apparel	9,123	872	52	10,047
F&B Products	3,278	2,233	505	6,016
Fabricated Metal Products	2,070	1,698	190	3,958
Printing & Reproduction of Recorded Media	1,717	1,145	56	2,918
Machinery & Equipment (including Repair & Installation of Machinery & Equipment)	841	1,178	97	2,116
Furniture	886	847	110	1,843
Rubber & Plastics Products	322	1,126	308	1,756
Wood & Wood Products	499	791	158	1,448
Non-Metallic Mineral Products	484	758	131	1,373
Basic Metal	431	543	109	1,083
E&E Products	231	639	198	1,068
Chemicals & Chemical Products	271	534	156	961
Paper & Paper Products	283	442	103	828
Motor Vehicles, Trailers & Semi-trailers and other transport equipment	242	440	77	759
Leather & Related Products	219	151	6	376
Basic Pharmaceutical Products & Pharmaceutical Preparations	60	115	17	192
Coke & Refined Petroleum Products	19	39	5	63
Tobacco Products	30	27	3	60
Others	613	356	27	996
<b>Totals</b>	<b>21,619</b>	<b>13,934</b>	<b>2,308</b>	<b>37,861</b>

## 1.2 Problem Statement

Small and medium enterprise is known as a largest and premier organization that develops the wealth of Malaysia economy. Food sector is one of the sub-sectors in the manufacturing industry and it is dominated by the SMEs that contribute towards the economical and country growth. No industry will be slow down by the revolutions caused by technological advance. Food sector owners in Malaysia must fully utilize and occupied the technology for achieve more development in their business and contributes to the development of the economic as well. In SME currently numbers of factors are responsible for the imbalance, ranging from industry-related problems such as lack of skilled manpower, and poor technological inputs, to problems relating to changes and implementation of government policies for industrialisation (Elsadig Musa Ahmed, 2012). This shows how import is the technological role in business.

Characteristics of small and medium industries cause that these companies in embrace technologies face obstacles and problems of its own particular. (Gilaninia, 2011). Nowadays technology is needed in SME businesses to improve efficiencies of the product and increase the productivity to get a huge income and profit .Technology also plays an important role in business to produce an efficient product to sustain the business. However the degree of technology usage in SME is relatively low in our country which is slow down the effectiveness and efficiency of the SMEs especially in food sector. This is maybe because of some factors which are SME owners are afraid of the high cost to attain the technology, are the technology requires high standard of skills, are this technology is being complex while use, dose the technology will be compatible to the business, are the technology is useful for the business and are the technology performance will be acceptable by the SME owners who are don't know operated it well. World different countries with the knowledge that Lack remove these barriers and lack use of the capabilities and opportunities presented by the Internet, reduce competitive of small and medium businesses and are limited their commercial activity (Gilaninia, 2011).

Low utilization of technology in food industry may slow down the process will affect the production of food sector. This may cause the business to be slow in terms of the development of the business and production of the food. It may cause the food industry firm to be dull and low. These challenges may give some difficulties to SMEs food sector owners to increase on their productivity and by this indirectly the food industries firm will give the lowers contribution by not fully utilize the technology to the country economic development. Seem the food sector is in the second place according the (SME Corp.Malaysia) figure 1.1 and figure1.2.

Technology utilization factor are one of the main factor that are attacking the development of SMEs food industry. Therefore the food industry in Malaysia needs to improve and know how to utilize the technology for the success of the business.

### **1.3 Research Questions**

This research aims to identify and determine the technology utilization factors of food manufacturing in small and medium enterprise and what are the industry will achieve by using the technologies for product or service. There are three research questions that will be answered through this research to achieve the research objective and solve these research problems:

RQ1: Are the current factors valid to measure technology utilization factors?

RQ2: What are the factors influencing small and medium enterprise to use technologies?

RQ3: How does the technology utilization factors relate to each other?