

## **SUPERVISOR APPROVAL**

‘I hereby declare that have read this thesis and this research is sufficient in terms of scope and quality. This project is submitted to Universiti Teknikal Malaysia Melaka as a requirement for completion and reward Bachelor Degree of Technology Management (Technology Innovation)’

Signature : .....

Supervisor name : Dr. Juhaini binti Jabar

Date : 26<sup>th</sup> June 2015

Signature : .....

Panel name : Ms. Sitinor Wardatulaina binti Mohd Yusof

Date : 26<sup>th</sup> June 2015

INTERNAL FACTORS AFFECTING RADICAL INNOVATION READINESS  
TOWARDS ORGANIZATION PERFORMANCE OF ICT SME'S

NURHAFIZAH BINTI IDRIS

A project paper submitted  
In fulfillment of the requirements for the Bachelor Degree of Technology  
Management (Technology Innovation)

Faculty of Technology Management and Technopreneurship  
Universiti Teknikal Malaysia Melaka

JUNE 2015

## DECLARATION

"I admit that this report is the result of my own but summarizes and quotes that every thing I have explained the source"

Signature : .....

Name : NURHAFIZAH BINTI IDRIS

Date : 26<sup>th</sup> June 2015

## **DEDICATION**

This research paper is dedicated to both my father and mother who motivate me in completing this research. They constantly give me support and advice to fulfill the requirement of the research. Without their support and motivation, it will be impossible to complete the research.

## ACKNOWLEDGEMENT

First and foremost, praises and thanks to the God, the Almighty, for His showers of blessings throughout my research work to complete the research successfully. I would like to express my deep and sincere gratitude to my project supervisor, Dr. Juhaini binti Jabar for giving me the opportunity to do research and providing invaluable guidance throughout this research. She has taught me the methodology to carry out the research and to present the research works as clearly as possible. It was a great privilege and honor to work and study under his guidance. I would also like to thank Dr. Chew Boon Cheong and Dr. Ismi Rajiani for sharing their expertise and knowledge in the Research Method subject that really helped me through in the writing of this research. I am extremely grateful to my parents for their love, prayers, caring and sacrifices for educating and preparing me for my future. Finally, my thanks go to all my coursemate, lecturers and the people who have supported me to complete the research work directly or indirectly.

Thank You.

## ABSTRACT

Radical innovation is an exploration of new technology or development of new business, products or process that transform the economies of a business. Thus, to develop radical innovation there must have factors analysis to be considered. This research basically set out to identify internal factors affecting radical innovation readiness toward organization performance of ICT SME's. The objectives of this study are to identify the internal factor and to analyze relationship between internal factors, radical innovation readiness and organization performance. The factors analyses are choose based on the problem identified in the past research. The problem when dealing radical innovation is high cost of R&D and long payback period, uncertainty how to manage a radical innovation, largely unknown size of market and customer needs and difficultness of getting feedback by secrecy because of competition threat. This research used quantitative method to collect and analyze the data. Thus, questionnaires will be used as a method to collect primary data. There are 120 respondents from ICT SME's who responded this research. The result of this research is interpreted by using SPSS version 20 to testing relationship between variables. From the findings, all these internal factors which are financial, top management support and infrastructure are have a strong relationship with radical innovation readiness and organizational performance respectively. The results showed a complete analysis of the demographic characteristics of all respondents by construct frequency tables and chart. The results from reliability analysis all variables are accepted and the items in questionnaires have a good internal consistency. The finding obtained from this research hope will be useful for ICT sectors in Malaysia to enhance their innovation activities more radically to become pioneer of radical innovation in the worldwide.

## ABSTRAK

*Inovasi radikal adalah penerokaan teknologi baru atau pembangunan perniagaan baru, produk atau proses yang mengubah ekonomi perniagaan. Oleh itu, untuk membangunkan inovasi radikal mesti mempunyai analisis faktor yang perlu dipertimbangkan. Kajian ini pada dasarnya dinyatakan untuk mengenal pasti faktor-faktor dalaman yang mempengaruhi kesediaan inovasi radikal terhadap prestasi organisasi ICT PKS. Objektif kajian ini adalah untuk mengenalpasti faktor dalaman dan untuk menganalisis hubungan antara faktor-faktor dalaman, kesediaan inovasi radikal dan prestasi organisasi. Faktor-faktor analisis yang pilih berdasarkan masalah yang dikenal pasti dalam kajian yang lalu. Masalah ketika berhadapan inovasi radikal adalah kos yang tinggi R & D dan tempoh bayaran balik yang panjang, ketidakpastian bagaimana untuk menguruskan inovasi radikal, saiz pasaran yang tidak diketahui dan keperluan pelanggan serta kesusahan untuk mendapatkan maklum balas dengan kerahsiaan kerana ancaman persaingan. Kajian ini menggunakan kaedah kuantitatif untuk mengumpul dan menganalisis data. Oleh itu, soal selidik yang akan digunakan sebagai kaedah untuk mengumpul data primer. Terdapat 120 responden dari ICT PKS yang memberi maklum balas kajian ini. Hasil kajian ini ditafsirkan dengan menggunakan SPSS versi 20 untuk ujian hubungan antara pembolehubah. Dari hasil kajian, semua faktor-faktor dalaman iaitu kewangan, sokongan pengurusan atasan dan infrastruktur adalah mempunyai hubungan yang kukuh dengan masing-masing kesediaan inovasi radikal dan prestasi organisasi. Hasil kajian menunjukkan analisis lengkap ciri-ciri demografi daripada semua responden oleh jadual kekerapan membina dan carta. Hasil daripada analisis kebolehpercayaan semua pembolehubah diterima dan item dalam soal selidik mempunyai ketekalan dalaman yang baik. Hasil yang diperolehi daripada harapan kajian ini akan berguna untuk sektor ICT di Malaysia bagi meningkatkan aktiviti inovasi mereka lebih radikal untuk menjadi perintis inovasi radikal di seluruh dunia.*

## TABLE OF CONTENTS

CHAPTER	TITLE	PAGES
	<b>DECLARATION</b>	iii
	<b>DEDICATION</b>	iv
	<b>ACKNOWLEDGEMENT</b>	v
	<b>ABSTRACT</b>	vi
	<b><i>ABSTRAK</i></b>	vii
	<b>CONTENTS</b>	viii
	<b>LIST OF TABLES</b>	xiv
	<b>LIST OF FIGURES</b>	xvi
	<b>LIST OF SYMBOLS</b>	xvii
	<b>LIST OF ABBREVIATIONS</b>	xviii
	<b>LIST OF APPENDICES</b>	xix
<b>CHAPTER 1</b>	<b>INTRODUCTION</b>	
	1.1 Background of the Study	1
	1.2 Problem Statement	2
	1.3 Research Questions	3
	1.4 Research Objectives	4
	1.5 Scope and Key Assumption of the Study	4
	1.5.1 Scope of the Study	4



1.5.2	Key Assumption of the Study	5
1.6	Significance of the Study	5
1.7	Summary	6
<b>CHAPTER 2</b>	<b>LITERATURE REVIEW</b>	
2.1	Introduction	7
2.2	Profile of Small Medium Enterprise in Malaysia	8
2.3	Information & Communication Technology (ICT) Industry in Malaysia	9
2.3.1	Classification of ICT Industries in Malaysia	10
2.4	Review Of Relevant Theoretical Models	12
2.4.1	Financial	12
2.4.2	Top Management Support	14
2.4.3	Infrastructure	15
2.5	Radical Innovation Readiness	16
2.6	Organization Performance	18
2.7	Summary	18
<b>CHAPTER 3</b>	<b>RESEARCH METHODS</b>	
3.1	Introduction	19
3.2	Theoretical Framework	20
3.2.1	Schematic Diagram	20
3.3	Hypothesis Development	21
3.4	Research Design	22
3.5	Methodological Choices – Quantitative Method Research	23

3.6	Data Collection Method	24
3.6.1	Primary data	24
3.6.2	Secondary data	25
3.7	Location Of The Research	25
3.8	Research Strategy	26
3.9	Research Instrument – Questionnaires	27
3.9.1	Financial	27
3.9.2	Top Management Support	28
3.9.3	Infrastructure	29
3.9.4	Radical Innovation Readiness	30
3.9.5	Organizational Performance	31
3.10	Data Analysis	33
3.10.1	Descriptive Analysis	33
3.10.2	Reliability Analysis	34
3.10.3	Correlation Analysis	34
3.10.4	Regression Analysis	35
3.11	Pilot Testing	35
3.12	Summary	37
<b>CHAPTER 4</b>	<b>RESULTS AND DISCUSSIONS</b>	
4.1	Introduction	38
4.2	Sample Size	39
4.3	Reliability Analysis	39
4.4	Descriptive Analysis	41
4.4.1	Descriptive Statistic of Respondent Background	41

4.4.2	Descriptive Analysis of Independent and Dependent Variables	47
4.5	Pearson Correlation Coefficient	52
4.5.1	Correlation between Variables	52
4.6	Multiple Regression Analysis	54
4.7	Simple Linear Regressions Analysis	57
4.7.1	Financial	58
4.7.2	Top Management Support	59
4.7.3	Infrastructure	61
4.7.4	Radical Innovation Readiness	62
4.8	Hypotheses Verification	64
4.8.1	Hypothesis 1	64
4.8.2	Hypothesis 2	65
4.8.3	Hypothesis 3	66
4.8.4	Hypothesis 4	67
4.9	Summary Of Statistical Analysis	68
4.9.1	Summary of Respondent Background	68
4.9.2	Descriptive Analysis	69
4.9.3	Pearson Correlation Coefficient	70
4.10	Summary Of Relationship Between Independent And Dependent Variables	71
4.11	Summary	73

## **CHAPTER 5 CONCLUSION AND RECOMMENDATIONS**

5.1	Introduction	74
-----	--------------	----

5.2	Managerial Implication	75
5.3	Theoretical Implication	76
5.4	Government Policy Maker	78
5.5	Limitations Of The Study	79
5.6	Recommendations For Future Study	80
5.7	Conclusion	81

## **REFERENCES**

## **APPENDICES**

## LIST OF TABLES

<b>TABLE</b>	<b>TITLE</b>	<b>PAGE NUMBER</b>
2.1	Definition of Top Management	15
3.1	Items of Financial	28
3.2	Items of Top Management Support	29
3.3	Items of Infrastructure	30
3.4	Items of Radical Innovation Readiness	31
3.5	Organizational Performance	32
3.6	Cronbach's Alpha	36
4.1	Reliability Statistic	40
4.2	ICT Related Services	42
4.3	Company Sales Turnover	43
4.4	Number of Employees	45
4.5	Frequency of Innovation Activity	46
4.6	Financial	47
4.7	Top Management Support	48
4.8	Infrastructure	49
4.9	Radical Innovation Readiness	50
4.10	Organizational Performance	51
4.11	Correlation between Variables	52
4.12	Multiple Regression Analysis	54
4.13	ANOVA	55
4.14	Coefficient	55
4.15	Model Summary	58
4.16	Coefficient	59

4.17	Model Summary	59
4.18	Coefficient	60
4.19	Model Summary	61
4.20	Coefficient	62
4.21	Model Summary	62
4.22	Coefficient	63
4.23	Descriptive Analysis	69
4.24	Summary of Hypothesis Verification	71

## LIST OF FIGURES

<b>FIGURE</b>	<b>TITLE</b>	<b>PAGE NUMBER</b>
3.1	Theoretical Framework	20
3.2	Phases of Research Strategy	26
4.1	ICT Related Services	41
4.2	Company Sales Turnover	43
4.3	Number of Employees	44
4.4	Frequency of Innovation Activity	46
4.5	Values of the Correlation Coefficient	53
4.6	Hypothesis Testing	71

## LIST OF SYMBOLS

$\alpha$  = Alpha

$\beta$ - = Beta



## LIST OF ABBREVIATIONS

SME	=	Small Medium Enterprise
ICT	=	Information & Communication Technology
IT	=	Information Technology
NSDC	=	National SME Development Council
R&D	=	Research and Development
DOSM	=	Department of Statistic Malaysia
F&B	=	Food and Beverage
CD	=	Compact Disc
ASP	=	Application Service Provider
EDI	=	Electronic Database Information
EAI	=	Electronic Application Integration
CEO	=	Chief Executive Officer
TPM	=	Technology Park Malaysia
ANOVA	=	Analysis of Variance
SPSS	=	Statistical Package for the Social Sciences
IV	=	Independent Variable
DV	=	Dependent Variable
RM	=	Ringgit Malaysia
M	=	Mean
SD	=	Standard Deviation
PPMC	=	Pearson Product Moment Correlation

## LIST OF APPENDICES

<b>APPENDIX</b>	<b>TITLE</b>	<b>PAGE NUMBER</b>
I	Questionnaire	82
2	Gantt Chart PSM 1	83
3	Gantt Chart PSM 2	84

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 BACKGROUND OF THE STUDY**

The purpose of this study is to clarify internal factors affecting radical innovation readiness toward organization performance of ICT SME's. It begins by describing briefly the issues or problems faced in the Information & Communication Technology (ICT) on the innovation activities. According to the Master Plan SME 2012-2020, the issue and challenges faced in SME are (i) lack of adoption of innovation and technology, (ii) lack of human capital development, (iii) lack of funding, and (vi) infrastructure. Based on related issue, this study will measure level of readiness to determine whether the organization is ready to make radical innovation. Then, research questions are developed based on the problem related and questioned by researcher. After that, research objectives are constructed based on the research question to achieve findings on this study. The details of information about this research can review in the literature review chapter. Besides that, the researcher used quantitative method as the method of this research. The related issue of internal factors affecting radical innovation readiness to enhance organizational performance of ICT SME's will synthesis to produce (i) research

objectives, (ii) statement of problem or research question (iii) literature review (iv) research methodology and (vi) the assumption of the study.

## 1.2 PROBLEM STATEMENT

SMEs play a vital role in the Malaysian economy and are considered to be the backbone of industrial development in the country (Salleh and Ndubisi, 2002). Researcher found that the challenges or problem that related to the research are obstacles facing for innovation activities of SME and problem when dealing with radical innovation.

Innovation is an important tool that provides opportunities to the new inventions and building of new markets (Kuhn & Marisck, 2010). Thus, in the presence of innovation, the overall firm performance would enhance (Rosli & Sidek, 2013). However, there are obstacles facing by SMEs for innovation activities to enhance quality of products or services. According to the survey of Associated Chinese Chambers of Commerce & Industry of Malaysia (2012), the main obstacles facing for innovation activities, are; (i) financial difficulties, (ii) lack of enthusiasm of company leadership, (iii) lack of research personnel, (iv) lack of creativity of research personnel, and etc.

Next, the researcher has narrowed down to the main problem which related to this study. Radical innovations involve substantially a new technology that creates a dramatic change in products or process. Therefore, Groenewegen & Langen (2012), stated that problems when dealing with radical innovations are; (i) high cost of R&D and long

payback period, (ii) uncertainty how to manage a radical innovation, (iii) largely unknown size of market and customer needs, (iv) difficultness of getting feedback by secrecy because of competition threats and etc. Therefore, the focus of this research is to investigate what are the organization's factors that influence radical innovation readiness toward organization performance.

### **1.3 RESEARCH QUESTIONS**

To pursue the research related to the internal factors affecting radical innovation readiness towards organizational performance ICT SMEs, this study needs to answer the following question:

- I. What are the internal factors affecting radical innovation readiness of ICT SME's?
- II. How far does the internal factor affecting radical innovation readiness influence organizational performance of ICT SME's?
- III. What is the suitable radical innovation readiness model focusing on internal factors for ICT SME's?

## **1.4 RESEARCH OBJECTIVES**

The research objectives of this study are:

- I. To identify internal factors that influencing radical innovation readiness of ICT SME's
- II. To analyze the relationship between internal factors of radical innovation readiness towards organizational performance of ICT SME's
- III. To propose a radical innovation readiness model focusing on internal factor for ICT SME's

## **1.5 SCOPE AND KEY ASSUMPTIONS OF THE STUDY**

### **1.5.1 Scope of the study**

Small and Medium Enterprises (SME) is the known well to the world business today. There are no doubt those economic activities most largest are from SME that evolving worldwide. Currently, innovation adoption in Malaysia SMEs industry is still under exploited. Most of the SMEs use incremental innovation to increase their productivity. In this study, researcher focused on ICT industry to develop a model of radical innovation readiness to enhance organization performance to the new invention of innovation. The location of the study is focus in the ICT companies in the Klang Valley. The researcher chooses ICT sector because ICT has become an important sector in Malaysia's economic development. Besides that, this sector has become a very important industry due to its rapid growth and its role in stimulating expansion for other industries in Malaysia.

### **1.5.2 Key Assumption of the Study**

The main purpose of this study is to identify which factors that influence radical innovation readiness. Then, to see whether radical innovation influence in the organization performance of ICT SMEs. This research can used in term of readiness in organization to move forward by making a radical innovation to increase organization performance.

## **1.6 SIGNIFICANT OF THE STUDY**

As stated earlier, in a competitive business world, innovation can be considered as one of a survival tool for any industry. Generally, technology innovations have changed the international trade market, industries business structure, survival and growth of new and existing industries. These changes in market structure and technology innovation have a very high impact on high-tech industries such as Information Technology (IT), engineering, infotainment and multimedia. In line with this, for firms and industries to stay competitive in the dynamic and global environment, there is a need to constantly develop innovation activities and stay ahead in the business world.

The findings obtained from these researches will be useful for ICT industries to enhance their innovation activities more radically to become pioneer of radical innovation in the worldwide. The proposed model of radical innovation readiness hope will be used in ICT SME"s to strengthen their business activities.

## **1.7 SUMMARY**

Thrust One of the Ninth Malaysian Plan identifies the Information and Communications Technology (ICT) sector as one of the areas vital for Malaysia's economic growth. Therefore, the researcher has taken this opportunity to study about internal factors affecting radical innovation readiness among the organizations. This chapter presents a problem statement, research question, research objectives, scope of study and significant of study.