

**THE RELATIONSHIP BETWEEN INNOVATION AND
INFORMATION TECHNOLOGY ON ORGANIZATIONAL
PERFORMANCE**

NOOR AZINUDDIN BIN AHMAD



UUM
Universiti Utara Malaysia

**MASTER OF HUMAN RESOURCE MANAGEMENT
UNIVERSITI UTARA MALAYSIA
December 2015**

**THE RELATIONSHIP BETWEEN INNOVATION,
INFORMATION TECHNOLOGY, AND
ORGANIZATIONAL PERFORMANCE**

By

NOOR AZINUDDIN BIN AHMAD



UUM
Universiti Utara Malaysia

**Thesis submitted to
School of Business Management (SBM),
University Utara Malaysia
in partial Fulfilment of the requirements for the
Master of Human Resource Management**

PERMISSION TO USE

In presenting this project paper in a partial fulfillment of the requirements for a Post Graduate degree from the Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for copying this project paper in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor or in their absence, by the Dean of School of Business Management, College of Business where I did my project paper. It is understood that any copying or publication or use of this project paper or parts of it for financial gain shall not be allowed without any written permission. It is also understood that due recognition shall be given to me and to the UUM in any scholarly use which may be made of any material in my project paper.

Request for permission to copy or to make other use of materials in this project paper on whole or in part should be addressed to:

Dean of School of Business Management, College of Business
Universiti Utara Malaysia (UUM)
06010 Sintok Kedah Darul Aman



ABSTRACT

Organizational performance is important to the organization. This is because it will be the benchmark to the organization whether the organization achieves their vision and mission or not. In order to ensure the company stay competitive, the organizational performance can be as a determined in order to ensure that the organization could be successful in the future. Hence, the purpose of this study is to know the relationship between innovation and information technology on the organizational performance in Malaysian Public Listed Companies. A cross-sectional study was chosen for this study. There are two objectives in this study, first is to evaluate the relationship between innovation with organizational performance in Malaysian Public Listed Companies. Second is to examine the relationship between information technology and organizational performance in Malaysian Public Listed Companies. Data were gathered through the online questionnaire survey of organizations (n=31). A total of 214 questionnaires were distributed to the Malaysian public listed companies by email and only 31 questionnaires were returned for analysis. The data has been analysed by using *Statistic Package for Social Sciences (SPSS)*. Regression results have shown the innovation has no relationship with the organizational performance. Meanwhile, the results indicated that information technology has a significant and positive relationship with organizational performance. The implications of this study is the organization need to use information technology in order to enhance the organizational performance of the company. Besides that, information technology is the important tool to make the work become more effective and at the same time, the company can stay competitive in the market.

Keywords: Innovation, Information Technology, Organizational Performance, Malaysian Public Listed Companies.

ABSTRAK

Prestasi organisasi adalah penting kepada organisasi. Ini kerana ia akan menjadi penanda aras kepada organisasi sama ada organisasi mencapai visi dan misi mereka atau tidak. Dalam usaha untuk memastikan syarikat kekal berdaya saing, prestasi organisasi menjadi penentu dalam usaha memastikan organisasi berjaya pada masa hadapan. Oleh itu, tujuan kajian ini adalah untuk mengetahui hubungan antara inovasi dan teknologi maklumat kepada prestasi organisasi dalam Syarikat Terserai Awam Malaysia.

Satu kajian keratan rentas telah dipilih untuk kajian ini. Terdapat dua objektif dalam kajian ini, pertama adalah untuk menilai hubungan antara inovasi dengan prestasi organisasi dalam Syarikat Terserai Awam Malaysia. Kedua adalah untuk mengkaji hubungan antara teknologi maklumat dan prestasi organisasi dalam Syarikat Terserai Awam Malaysia. Data dikumpulkan melalui soal selidik organisasi dalam talian ($n = 31$). Sebanyak 214 soal selidik telah diedarkan kepada syarikat-syarikat terserai awam Malaysia melalui e-mel dan hanya 31 soal selidik telah dikembalikan untuk dianalisis. Data telah dianalisis dengan menggunakan *Pakej Statistik Untuk Sains Sosial (SPSS)*. Keputusan regresi menunjukkan inovasi tidak mempunyai hubungan dengan prestasi organisasi. Sementara itu, keputusan menunjukkan bahawa teknologi maklumat mempunyai hubungan yang signifikan dan positif dengan prestasi organisasi.

Implikasi bagi kajian ini adalah penting terhadap keperluan organisasi untuk menggunakan teknologi maklumat supaya meningkatkan prestasi organisasi syarikat. Selain itu, teknologi maklumat adalah alat yang penting untuk membuat kerja-kerja menjadi lebih berkesan dan pada masa yang sama syarikat dapat kekal berdaya saing dalam pasaran.

Kata Kunci: Inovasi, Teknologi Maklumat, Prestasi Organisasi, Syarikat Terserai Awam Malaysia.

ACKNOWLEDGEMENT

In the name of Allah SWT, the Most Gracious and Most Merciful, I praised to Allah for the completion of this project paper. Without the dedication and support from these people, the completion of this dissertation will not be possible.

I would like to express my deepest appreciation to my project supervisor, Dr Zurina Adnan for her invaluable efforts and time in providing proper guidance, assistance and support throughout the entire process. Her understanding, consideration and untiring advice effortlessly drive me to complete this project paper.

My sincere appreciation to the Malaysian Public Listed Companies that were willing to help and significantly contributed by participating and answering questionnaires for this study.

Last but not least, thanks should go to my friend En. Ariff Fikri Bin Azhari, En Raimi Bin Mesari and my beloved mother, Pn. Salmiah Binti Romli who give moral support and encouragement throughout this project paper.



TABLE OF CONTENTS

PERMISSION TO USE	i
ABSTRACT	ii
ABSTRAK	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	vii
LIST OF TABLES	viii
LIST OF APPENDICES	ix
LIST OF ABBREVIATIONS	x
CHAPTER ONE: INTRODUCTION	
1.0 Introduction	
1.1 Background of the Study	
1.2 Problem Statement	3
1.3 Research Questions	5
1.4 Research Objectives	5
1.5 Significant of the Study	6
1.6 Scope of the Study	6
1.7 Definition of the Variables	7
1.7.1 Innovation	7
1.7.2 Information Technology	7
1.7.3 Organizational Performance	7
1.8 Organization of the thesis	8
CHAPTER TWO: LITERATURE REVIEW	9
2.0 Introduction	9
2.1 Organizational Performance	9
2.2 Innovation	12
2.3 Information Technology	14
2.4 Relationship between Innovation and Organizational Performance	15
2.5 Relationship between Information Technology and Organizational Performance	16
2.6 Underpinning Theories	18
2.7 Conclusion	21
CHAPTER THREE: METHODOLOGY	22
3.0 Introduction	22
3.1 Research Framework	22
3.2 Research Hypothesis	22
3.3 Research Design	22
3.4 Sampling Design	24
3.4.1 Population of Interest	24
3.4.2 Target Population	24

3.5 Operational Definitions	25
3.6 Measurement of the Variables	25
3.6.1 Innovation	26
3.6.2 Information Technology	27
3.6.3 Organizational Performance	28
3.7 Data Collection Techniques	29
3.8 Sample Size	30
3.9 Sampling Technique	31
3.10 Units of Analysis	31
3.11 Data Analysis Technique	31
3.12 Conclusion	33
CHAPTER FOUR: FINDING AND DATA ANALYSIS	34
4.1 Introduction	34
4.2 Response Rate	34
4.3 Profile of the Respondents	35
4.4 Factor Analysis	36
4.4.1 Factor Analysis of Innovation	36
4.4.2 Factor Analysis of Information Technology	37
4.4.3 Factor Analysis of Organizational Performance	38
4.5 Reliability Analysis	39
4.6 Descriptive Analysis	40
4.7 Correlation Analysis	41
4.8 Regression Analysis between Innovation, Information Technology and Organizational Performance	42
4.9 Summary of Hypotheses Testing	44
4.10 Conclusion	44
CHAPTER FIVE: CONCLUSION AND RECOMMENDATION	46
5.1 Introduction	46
5.2 Relationship between Innovation and Organizational Performance	46
5.3 Relationship between Information Technology and Organizational Performance	47
5.4 Implication of the Study	48
5.5 Recommendation for Future Research	49
5.6 Limitation of the Study	49
5.7 Conclusion	50
REFERENCES	52

LIST OF FIGURES

Figure 3.1: Research Framework

22



LIST OF TABLES

Table 2.1 The Life Cycle of Resource Based View	19
Table 3.1 Section of Questionnaire	25
Table 3.2 Items and Operational Definition of Variable for Innovation	26
Table 3.3 Items and Operational Definition of Variable for Information Technology	27
Table 3.4 Items and Operational Definition of Variable for Organizational Performance	28
Table 4.1 Rate of Respons	34
Table 4.2 Profile of the Respondents	35
Table 4.3 Result of Factor Analysis for Innovation	37
Table 4.4 Result of Factor Analysis for Information Technology	38
Table 4.5 Result of Factor Analysis for Organizational Performance	39
Table 4.6 Reliability Analysis Results	39
Table 4.7 Descriptive Statistic of the Variable	40
Table 4.8 Correlation between Variables	42
Table 4.9 Result of Regression Analysis of Innovation and Information Technology on Organizational Performance	43
Table 4.10 Summary of Hypotheses Testing	44



UUM
Universiti Utara Malaysia

LIST OF APPENDICES

Appendix A	Selected Malaysian Public Listed Companies	67
Appendix B	Profile of the Respondents	78
Appendix C	Factor Analysis for Innovation	79
Appendix D	Factor Analysis for Information Technology	80
Appendix E	Factor analysis for Organizational Performance	83
Appendix F	Reliability Analysis	85
Appendix G	Descriptive Analysis	90
Appendix H	Correlation Analysis	90
Appendix I	Multiple Regression Analysis	91
Appendix J	Permission Letter	95
Appendix K	Online Questionnaire	96



UUM
Universiti Utara Malaysia

LIST OF ABBREVIATIONS

PLCs	Public Listed Companies
IV	Independent Variable
DV	Dependent Variable
SPSS	Statistical Package of Social Science
RBV	Resource Based View
OP	Organizational Performance
IT	Information Technology
INN	Innovation
M	Mean
SD	Standard Deviation
KMO	Kaiser-Mayer Olkin



UUM
Universiti Utara Malaysia

CHAPTER ONE

INTRODUCTION

1.0 Introduction

In the fast forward challenging economy nowadays, many aspects should be considered in order to ensure the company stays alive in the market. Aspect of the organizational performance (OP) is one of the important things. Hence, this research has come out with data and input that explains about the relationship between innovation and information technology on organizational performance in Malaysian public listed companies (PLCs). Based on that, the purpose of this chapter is to provide some basic information regarding this study. This chapter starts with the discussion by providing some background information surrounding the issue. After that, the problems that lead to the need for the present study are presented, followed by the research questions, the research objectives and the significance of the study. Eventually, the definitions of the variables are detailed out.

1.1 Background of the study

In the new era today, organizational performance is very important to ensure whether or not the organization would be successful. Organizational performance is also important in terms of knowing whether the organization has achieved its mission and vision of the company. The organization that has poor organizational performance might be having

some problems and they should be solved carefully. Organizational performance encompasses all the results or output of an organization as tools that will be used to measure the goals and objectives of an organization. Many researchers have their own different opinions about organizational performance. According to Richard *et al.* (2009), organizational performance involves the recurring activities to establish organizational goals, monitor progress toward the goals, and make adjustments to achieve those goals more effectively and efficiently. Meanwhile, Abu-Jarad, Yusof and Nikbin (2010) stated that the organizational performance as an issue arise among organizational researchers to be discussed. Heffernan and Flood, (2000), organizational performances are difficult to measure. However, according to Daft (2000) organizational performance is the organization's ability to attain its goals by using resources in an efficient and effective manner. In addition, Richardo and Wade (2001) defined organizational performance as the ability of the organization to achieve its goals and objectives.

In this study, it will focus on organizational performance in public listed companies in Malaysia. The purpose of focusing on publicly listed companies because they have links with the investors. In terms of investment, the need of the organizational performance is very important in order to sustain in the market. If the performance of the public listed companies is not good, it will somehow influence the investors to invest in that company. Hence, the aspect of performance in the public listed companies is very important.

According to BusinessDictionary.Com, Public Listed Companies (PLCs) can be clarified as the companies that shares are traded on the stock exchange for public trading. In

Malaysia, PLCs have more than 813 companies stated in Bursa Malaysia (as at May 2015). Previously, Bursa Malaysia is also known as the Kuala Lumpur Stock Exchange. The companies which are listed on the Bursa Malaysia should have some criteria or factors consideration in order to be Public Listed Companies, such as identifiable core business, good management, no conflicts of interest, strong business prospects, healthy financial position, and good corporate governance (bursamalaysia.com). Hence, this is not easy to maintain competitiveness in the market

1.2 Problem Statement

Many organizations nowadays are facing the problem about organizational performance. In fact, many studies were undertaken to know the aspects that will help to enhance the organizational performance. According to Scholl (2002), despite an organization's effort, many organizations still do not perform well and studies on the survival of organizations found that the average age of an organization is only around 18 years. For example Perwaja Steel Sdn. Bhd which is one of the public listed companies was incorporated in 1982 cannot survive after more than five years established (Chui Yan, 2010). The reason is, they do not perform well, and aspects of performance have been ignored by the organization. It shows that an organization will be failed if they are not taking the aspect of organizational performance for granted.

Besides that, the innovation aspect influence the organizational performance. According to Gopal and Kumar (2011), based on past research at Muhibbah Engineering (M) Berhad which is one of the PLCs in Malaysia showed the lack of innovation is one of the

factors that influence organizational performance of the company. The innovation is interrelated to enhance the organizational performance. Previously, the link of the innovation has been widely discussed in past literature on how the innovation influence the organizational performance. According to Tajuddin, Iberahim, and Ismail (2015), the innovation, enhanced the organizational performance in the construction industry in Malaysia. But this not comprehensive to all types of industry that have in Malaysia. In light of the problem, the researcher does come out to examine these gaps.

Another factor that influences organizational performance is information technology (IT). In some organizations nowadays, they still did not use information technology in their company as a primary tool (Bill Goodwin, 2014). The reason they refuse to use it because the cost to implement IT in an organization is high, and it takes time for the employees to learn and adapt. As the matter of fact, IT is one of the necessary tools for the organization to become successful and it seems to be unavoidable in order to scale up the knowledge management. According to Melville, Kraemer, and Gurbaxani (2004), IT can enhance organizational performance.

In Mid-2014, sustainability of the performance was assessed among 200 companies listed in Bursa Malaysia but only 24 listed companies are qualified to be included in the index for Malaysian Public Listed Companies (MISC, 2014). Meanwhile, according to Lau (2009), roughly around RM46.29 billion from Bursa Malaysia was exterminated together, which is 17 of public listed companies in the half of the year in 2007 being taken private. It shows that, the factor of performance does not perform well. The aspect of performance should be enhanced underperforming (Gopal and Kumar, 2011).

Past research before this by Rasula et al (2012)” was focused on the factors that influence organizational performance at manufacturing companies and it is more on the western country as mentioned before this. Hence, this research wants to explore the relationship between innovation and information technology on the organizational performance, also the relationship between them at public listed companies in Malaysia context practically.

1.3 Research Questions

In order to achieve the motive of this study, the following research questions to offer solutions at the end of the research study are addressed;

- 1) Is there any relationship between innovation and organizational performance?
- 2) Does information technology have a relationship with organizational performance?

1.4 Research Objectives

The primary purpose of this study is to assess the relationship between innovation and information technology on the organizational performance in public listed companies in Malaysia. The specific objectives are:

- 1) To investigate the relationship between innovation and organizational performance in Malaysian PLCs.
- 2) To analyze the relationship between information technology and organizational performance in Malaysian PLCs.

1.5 Significance of the study

This study is very important to ensure whether or not, the innovation and information technology has the relationship to the organizational performance. Some perceptions think that all big companies which have skilful workers and ability in doing their job will automatically improve the performance, but it does not necessarily work that way. In the past studies, their respondents focus on the manufacturing company (Rasula, Jelena, Vuksic, Vesna Bosilj & Stemberger, 2012). In this study, it does not only focus on manufacturing companies, but also focuses on different types of companies that measure the organizational performance and to know comprehensively in details whether or not, the implementation made by the public listed companies can give effect to the performance. Hence, the findings of this research can be as a guidance to help the public listed companies to improve their organizational performance.

1.6 Scope of the study

This study wants to analyze the relationship of the innovation and information technology on the organizational performance, especially for public listed companies in Malaysia. The sample that contributed to this study is the Human Resource Department at public listed companies and the respondents focus on executive workers.

1.7 Definitions of Variables

In order to understand the meaning of each variable in this study, the definition and terms of the variables are explained below:

1.7.1 Innovation

Innovation is a valuable tool that could help the firm acquires the better ability to encounter and adapt any changes in the environment (De Jong & Den Hartog, 2008).

1.7.2 Information Technology

Information technology is define as the ability of technology to capture knowledge and usage of information systems (Rasula *et al*, 2012).

1.7.4 Organizational Performance

Organizational performance refers to whether the company does well in discharging the administrative and operational functions pursuant to the mission and whether the company actually produces the actions and outputs pursuant to the mission or the institutional mandate (Kim, 2005).

1.8 Organization of the thesis

In order to achieve the purpose of this study, contents of this research are structured in the following way. The thesis is organized into five chapters. The first chapter provides an overview of this thesis which includes background of the study, problem statements, research questions, and the objectives of the study, the significance of the study, the scope of the study, organization of the study and definition of variables. In chapter two of this research, it covers and discusses about the previous study of independent variable and dependent variable. Besides that, it explains more details about the relationship between innovation and information technology in enhancing the organizational performance.

Meanwhile, the research design and method are described in the chapter three. Research framework, research hypothesis, research design, measurement of the variables, data collection process, sampling design and types of the study will be included in this chapter. After that, the analysis of the questionnaire survey and results will be covered in chapter four. Finally, the conclusion of this research will be presented in chapter five.

CHAPTER TWO

LITERATURE REVIEW

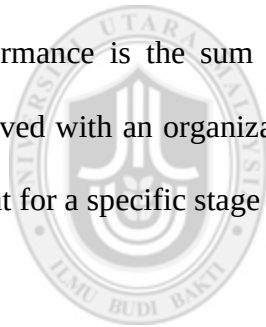
2.0 Introduction

In this chapter, previous literature was reviewed which is related to the topic of the research. The relationship between innovation and organizational performance will be discussed. After that, the relationship between information technology and organizational performance also will be discussed further. In addition, this chapter also presents the underpinning theory that related to this study.

2.1 Organizational Performance

Organizational performance is a main and crucial aspect that should be focused in details. It is a continual process that focused by the organization in order to ensure the performance of the organization is still progressing and increasing (Gavrea, Ilies, and Stegerea, 2011). Organizational performance is also one of the indicators that measures whether or not the company achieves its objectives. But, it is a difficult concept to define and measure. There are a lot of meanings that defined the organizational performance over the years. During 50s, Georgopoulos and Tannenbaum (1957: p. 535) defined the organizational performance is a part of the objective and as an extension of the organization. At this time, the structure of the organization, work, and the people were evaluated to determine the performance. In year 60s and 70s,

Yuchtman and Seashore (1967: p. 379) determined the organizational performance as an ability of the organization through environment to access the resources that limited. Within 80s and 90s, with the more challenging market, the organizational performance become successful if the factor of effectiveness and efficiency are achieved. However, Lusthaus and Adrien (1998); and Campbell, Dunnette, Lawler & Weick (1970) stated that the organizational performance that uses unlimited resources can help the organization to achieve its objectives. Organizational performance is subjective, hard to measure and complex in the public sector or company (Anspach, 1991; Au, 1996). It needs more effort in order to ensure the effectiveness of organizational performance (Brewer and Selden, 2000). Moreover, Ling and Hong (2010) stated that organizational performance is the sum of accomplishments attained by all businesses/departments involved with an organization goal during a given period of time, with the goal either meant for a specific stage or on the overall extent.



UUM
Universiti Utara Malaysia

All the above concepts have defined about organizational performance over the years. Organizational performance is actually meant to show whether the company perform well in discharging the administrative and operational functions pursuant to the mission and whether the company actually produces the actions and outputs pursuant to the mission or the institutional mandate (Kim,2005). This definition has been used in this study because based on performance related values in terms of efficiency, effectiveness, and fairness.

Furthermore, many factors that drive the organizational performance including informational technology (Westrum,2004). The innovation could also improve the organizational performance (Moustaghfir and Schiuma, 2013).

In addition, the aspect of fairness and efficiency are also needed in order to enhance the quality, productivity of work and organizational performance as a whole. According to Al-Zu'bi (2010), the organization needs an efficient manager to ensure the organizational performance can be improved. Meanwhile, the individual's perception of the fairness treatment from the organization is also one of the factors that influence the performance (Fernandes and Awamleh, 2006). Based on the factors above, the company will be able to indirectly increase the profit of the company.

In Malaysia, there are some companies which still face the problems about organizational performance. Organizational performance has become an issue nowadays regardless in small or big companies. For instance, Malaysia Airlines System Berhad (MAS) is one of the big companies in Malaysia faced the downsizing due to poor of performance. Refers to an analysis report of the years 2007-2011 by Mushure (2014), performance of this company was going down and need to be improved. Based on the example of the company above, the organizational performance can be dropped if it does not manage very well.

2.2 Innovation

Malaysia is one of the developing countries and moving forward to be developed country in order to achieve the National Vision 2020. Malaysia's aim of becoming a developed country and a high income economy status by the year 2020 can be realized by emphasizing towards the industry's improved and greater performance through innovation.

In this study, the lack of data to generate the findings for innovation makes the innovation difficult to define. Hence, different definitions of innovation included in this literature. Many of innovation definitions more to the idea of implementing or adapting a novel behavior or idea an organization (Daft & Becker, 1978; Damanpour, 1988; Hage, 1999; Oerlemans, Meeus, & Boekema, 1998; Zaltman, Duncan, & Holbek, 1973). According to Lafley & Charan (2008), innovation is a new idea into benefits, revenues and profits. However, innovation cannot be seen as something periodical that happens by accident or something that results from the action of an individual. Refers to Bates and Khasawneh (2005), innovation is related to the adoption and application of new knowledge and practices, including the ability of an organization to adopt or create new ideas and implement these ideas in developing new products, services, working processes and procedures, and improving those already established. Besides that, innovation is considered an intangible resource. Furthermore, innovation is seen as the result of an interactive and nonlinear process between the firm and the environment (Silva et al., 2007).

Nowadays, many companies especially in public listed companies are dealing with innovation to make their companies more competitive. The size of company usually has a positive effect on the performance. This is because huge companies normally have more resources and capital in terms of investment on innovation (Damanpour, 1992). Nevertheless, Rosenbusch et al., (2011) stated that even the companies concentrate and spent a large amount of resources to the innovation process, but they are incompetent to put them into innovative offerings, the resources will be wasted and the performance of the companies will be suffered. In many companies, regardless small, medium or even big size of the companies, they are related to the innovation with performance of the organization. The innovation also can give the positive effect to the organization, whether the size of the company is small, medium or large (Kemp, De Jong, Folkeringa, and Wubben, 2003). But according to Bowen, Rostami and Steel (2010), the relationship between innovation and performance has been uncertain.

According to Garcia-Morales *et al.* (2008), innovation has the effect on performance by introducing new knowledge that is not made available to competitors at least for a certain period of time. The organization that adopts an innovation in the company will able to create “isolation mechanisms” as knowledge of the innovation is not available to competitors (Aragon-Correa *et al.* 2007). This allows the organization to maintain its competitive advantage, protect profit margins, and the most important thing is it can obtain greater organizational performance.

Refers to De Jong & Den Hartog (2008), the innovation plays as a tool that helps the organization acquires the better ability to encounter and adapt any changes in the

environment. The innovation is also important to add the value in terms of quality and quantity of the product and services. Thus, this idea has been used and related to this study in order to identify the relationship between innovation and organizational performance.

2.3 Information Technology

Over the past 30 years, the information technology is not so important. Nowadays, it becomes something that is very important in life. Today, the organization still uses the information technology to store the data and information besides encouraging the employees on information technology. Utilization of the information technology could affect the structure, procedures, products, and services of the organization. It also could help the organization in daily activities besides giving the competitive advantage to become more effective (Mousavi and BadrAbady, 2008). Besides that, according to Robey, Boudreau, and Rose (2000), information technology that has already been learned by the organization could provide opportunities for them. Based on what the company already learned about information technology, it could help the organization to implement and react how to use it effectively for a better future. Information technology also is a great expenditure or investment for the organization. It will support and increase the productivity of the organization (Smith, 2008). Consequently, the work becomes more effective and organizational performance will be improved. In the large company such as manufacturing companies, the information technology is very important to be able to work effectively and gives the positive impact of the organizational performance (Shaukat and Wajid, 2008). According to Dans (2001),

Kraemer and Dedrick (2001), information technology have a positive and direct effect on performance. However, information technology cannot improve the performance of the organization if the implementation of information technology is not accepted and the employees in the organization are not warmly concerned used it (Venkatesh *et al.*, 2000). In contrast, Strassman (1990, 1997), Brynjolfsson (1993), Dos Santos (1993) stated that information technology did not affect on performance. In addition, Ho et al (2006), Anderson et al. (2003), Solow (1987), and Brynjolfsson & Hitt (1995) reported that information technology negatively affect on performance.

Futhermore, information technology is defined as the ability of technology to capture knowledge and usage of information systems (Rasula *et al*, 2012). This definition has been referred as an idea in doing this research. Based on that, there are two very important elements of information technology. First is the knowledge and the second one is usage of IT tools to make sure that it could give the greatest effect on organizational performance.

2.4 Relationship between Innovation and Organizational Performance

In terms of the relationship between innovation and organizational performance, the innovation gave the positive results or outcomes to the company (Schiuma, 2013). According to Saunila, Pekkola and Ukko (2014), the results were found that the link between innovation capability and firm performance has an important existence. However, innovation has not necessarily given the positive effect to the organization's performance. According to Jen Huang and Ju Liu (2005) in their research on

“Exploration for the relationship between innovation, information technology, and performance” found that there is no effect on the organization’s performance. In some cases, the innovation is not the primary factor to succeed in the organization (Glor, 2014). In fact, the relationship between innovation and organizational performance has still been debated. Balkin *et al* (2000), found the negative relationship between these variables. This is supported by Greve (2003), there is no significant relationship between innovation and organizational performance.

In a different study conducted by Wright, Palmer and Perkins (2004), they indicate that innovation has a positive effect on performance only in a hostile environment but not in a benign environment for small businesses. A hostile environment is characterized by intense rivalry among firms and weak or diminishing competitive opportunities. Firms operating in highly competitive (hostile) markets are likely to be more successful innovators by increasing the number of new product introductions through incremental innovation in order to meet customer needs hence contributing to the positive impact on performance. Thus, the relationship between innovation and organizational performance sounds complex and needs to explore further.

2.5 Relationship between Information Technology and Organizational Performance.

In the recent years, the information technology moves rapidly. By using the technology, daily business activities would be faster. Information technology in fact could enhance

the organizational performance. Past study shown that, the organizational performance indeed could be improved by using the information technology (Brynjolfsson and Hitt 1996; Kohli and Devaraj 2003; Mukhopadhyay et al. 1995). Therefore, the company should allocate the company budget on information technology due to improve the company's performance. Previous studies by Bharadwaj *et al.* (1999) showed that, the result of investment in information technology had a significantly positive to the organizational performance. This is based on a sample of 631 listed companies in the USA collected on expenditures in information technology from 1989 to 1993 to inquire the effect between company performance and information technology investments. Other studied by Brynjolfsson and Yang (1999), also showed the positive result of investment in information technology through a sample of Fortunes 1000 companies that was conducted.

However, information technology is not necessarily being positive to the organizational performance. Information technology has the negative relation to organizational performance for short term (Novak and Stern, 2008). The new information technology needs to be learned, adapted and sometimes sophisticated technology makes the employees face the trouble to use it. Furthermore, not all types of work need information technology to handle the job.

2.6 Underpinning Theories

In this study, Resource-Based View (RBV) Theory has been used in order to relate to the relationship between innovation, information technology and organizational performance. Resource-Based View is the theory that was helpful to know the resource of the companies include innovation and information technology in order to develop the competitive advantage. RBV also uses to sustain the competitive advantage was derived from resources and capabilities that driven by company, valuable, rare, inimitable and non substitutable, Barney (1991).

Besides that, the RBV is a basis drivers for the organization as a competitive advantage and to enhance the organizational performance by focusing on the firms' resources. According to Hsu & Pereire (2008), RBV is a seeker of unique or otherwise costly-to-copy resources that create competitive advantage. The aspect of financial, human, intangible, physical, organizational, or technological may be the resource for competitive advantage. Basically, research on the RBV focused on a highly aggregated dependent variable, namely, firm performance (Ray, Barney, & Muhanna, 2004). In this study, the dependent variable is organizational performance. Hence, it relates to this study.

In addition, the RBV also has its roots in Penrose's (1959) theory on the growth of the firm. Meaning that, it looks at the resources that can enhance the organizational performance. In this study, innovation and information technology will be the resources to enhance the organizational performance.

Table 2.1

The Life Cycle of Resource Based View.

Author(s) and Year	Key Contribution
Lippman & Rumelt, 1982	Explained the concepts of inimitability and causal ambiguity; these concepts became core elements of the resource-based view (RBV)
Wernerfelt, 1984	Emphasized the value of focusing on firms' resources rather than on their products; coined the term <i>resource-based view</i>
Barney, 1991	Presented and developed the core tenets of RBV; presented a detailed definition of resources; and articulated the full set of characteristics that make a resource a potential source of competitive advantage (i.e., valuable, rare, inimitable, and nonsubstitutable)
Conner, 1991	Juxtaposed the RBV with industrial-organization economics in order to demonstrate that RBV was developing as a new theory of the firm.
Growth stage Mahoney & Pandian, 1992	Further delineated the RBV by relating it to distinctive competencies, organizational economics, and theory on industrial organization.
Teece, Pisano, & Shuen, 1997	Built on RBV ideas to introduce the concept of dynamic capabilities; in particular, explained competitive advantage as arising from the confluence of assets, processes, and evolutionary paths
Maturity stage Alvarez & Busenitz, 2001	Explained the contributions of RBV to entrepreneurship research and articulated further contributions that could be made
Barney, Wright, & Ketchen, 2001	Identified the impact of RBV on related subject areas
Makadok, 2001	Synthesized ideas on excess profits offered by RBV and theory on dynamic capabilities
Lippman & Rumelt, 2003	Initiated discussion of the micro-foundations of RBV by introducing a payments perspective

Source: Barney *et al* (2011)

Table 2.1 above shows that RBV has been used for many years before this. Besides that, the RBV also has been used in different perspective by the organization in order to ensure that the company stay competitive and indirectly enhance the organizational performance.

RBV is often related to social capital and innovation theories since the analysis of social network becomes one of the most important estimation tools in the last decades for enterprise growth and competitive strength as well as innovation (Uzzi, 1997; Gulati, *et al.*, 2000). Innovation is the tools that make the organization more competitive and improve the organizational performance. Nevertheless, innovation does not come simply from scanning the external environment for market opportunities, but from looking inside and build on the resource endowment and core competencies of the organization. By the RBV, it will able to know the effect of innovation to the organizational performance. RBV not only focus on how to squeeze innovation output of the organization, but it also on how to provide the way for innovative activity to occur in the first place. Besides that, the RBV also focuses on the opportunity of the organization to produce innovative output or activities with increased future value. Further, RBV and innovation have a bilateral relationship. RBV enlarges the aspects that can determine the firm's capacity to innovate, and at the same time the innovation is a mechanism through which a firm can renew the value of its assets. This creates a mutual relationship and give the value to the organization (Kostopoulos, Spanos & Prastacos, 2002).

In terms of information technology, RBV could help to improve the organizational performance. According to Zhang (2007), and Nakata, *et al.* (2008), the theories of

resource-Based View (RBV) able to explore the pervasive effect of IT into the organization and explain how internal factors, such as core competencies, can provide a competitive advantage position to improve performance. Besides that, the relationship between information technology and performance based on the RBV approach will bring competitive advantage to the company (Barney, 1991; Wernerfelt, 1984).

Information technology will build up the performance to become better in the future. According to Bharadwaj (2000), the companies that use the information technology and become a leader in information technology usage have superior performance. By calculating the real information technology usage in the company, the relationship between information resources and company performance can be determined (Devaraj, *et al.* 2001).

2.8 Conclusion

This chapter presents the literature review on innovation, information technology, and organizational performance. Besides that, the theory that related to this study was also discussed. Next following chapter, the methodology on data collecting method will be described.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

In this chapter, it will present the procedure and methodology of data collection for this research. The purpose of this research is to examine the relationship of innovation, and information technology on the organizational performance in Malaysian public listed companies. Therefore, it covers research framework, research hypothesis, research design, population and sampling, instrumentation, data collection and data analysis.

3.1 Research Framework

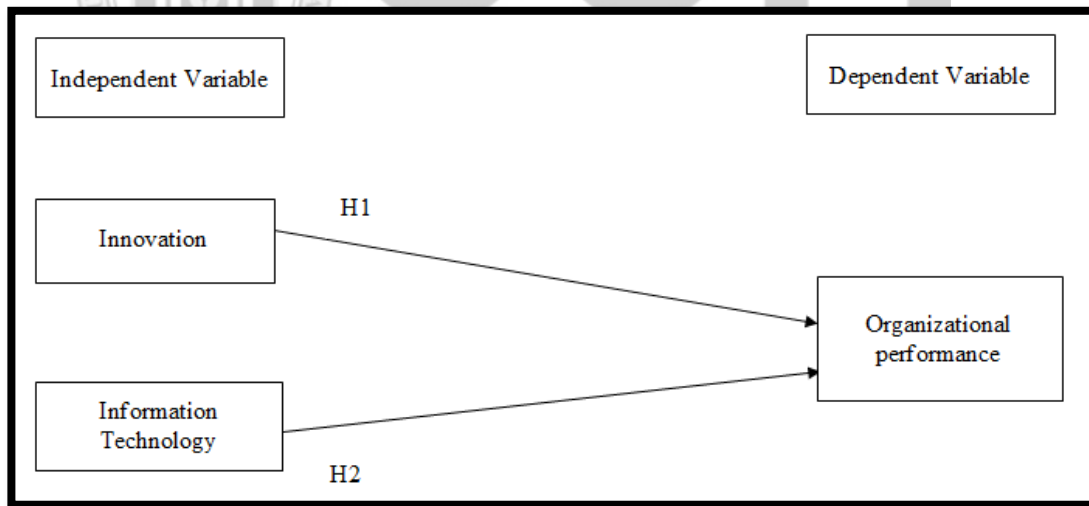


Figure 3.1: Research framework.

Figure 3.1 demonstrates the framework of the research in this study adapted and improvised from (Rasula *et. al*, 2012). There are independent variables and dependent

variable. Independent variables consist of two variables, namely innovation and information technology. Meanwhile, the dependent variable is organizational performance.

3.2 Research Hypothesis

In view of the literature review and research questions, the following research hypotheses will suffice for this research work;

Hypothesis 1: Innovation has a relationship with organizational performance.

Hypothesis 2: Information technology has a relationship with organizational performance.

3.3 Research Design

The purpose of this study is to examine the relationship between innovation and organizational performance. In addition, the purpose also wants to study the relationship between information technology and organizational performance. Hence, this research is more to correlation study. The study was conducted with the aim to the importance of the variables that are associated with the problem. Quantitative approach used in this study in order to meet the research objectives. The field survey was conducted through the distribution of the questionnaire. In this study, the cross sectional study was chosen due to meet the objective of the research.

3.4 Sampling Design

Sample design and sampling size are crucial because a proper sampling design and size helps the researcher to draw conclusions that would be generalized to the population of interest. The sample size can be based on the size of population by referring to the Table of Sample Size by Sekaran (2003).

3.4.1 Population of Interest

The aim of this study is to analyze the relationship between innovation, information technology, and organizational performance perspective toward public listed companies in Malaysia. This study focused on the organization level analysis. The unit of the analysis was Public Listed Companies.

3.4.2 Target Population

The researcher is interested in collecting data specifically toward the executive worker in the organization of public listed companies in Malaysia. This is to analyze that the innovation and information technology have a relationship with the organizational performance. The population for this study involved of all Public Listed Companies in Malaysia. The total number of companies is 814 (Bursa Malaysia, 2015).

3.5 Operational Definitions

In this section, the operational definitions and the items are generated for this present study. The items and operational definition of innovation, information technology and organizational performance was described in the following section.

3.6 Measurement of the Variables

Basically, this study uses a multiple question in order to measure the innovation, information technology and organizational performance. The questionnaire contains quantitative measurement. The demographic part of the question is more to company information on year of establishment, number of the employees, and types of the company. The questionnaire consists of 20 questions were distributed and the English language has been used. The questionnaires are separated into two sections as shown in Table 3.1 below:

Table 3.1
Section of questionnaire

Section	Illustration
Section one	Includes 3 questions about company's demographic information such as year of establishment, number of the employees, and type of the industry.
Section two	Includes 6 questions to measure Innovation. Consists 6 questions to measure information technology.

Consists 5 questions to measure organizational performance.

3.6.1 Innovation

In order to make this research more realizable, operational definition of innovation was illustrated. First, innovation was measured using the scale adapted from De Jong and Den Hartog, (2008). It consists of six items. All items were measured across 5- point Likert scale ranging from 1= Strongly Disagree, 2= Disagree, 3= Neither Agree nor Disagree, 4= Agree, 5= Strongly Agree. All items are listed in the table below:

Table 3.2
Items and Operational Definition of variable for Innovation

Variable	Operational Definition	Items
Innovation	Valuable tools that could help the firm acquires the better ability to encounter and adapt any changes in the environment.	1. Our company makes suggestions to improve current products or services. 2. Our company produces ideas to improve work practices. 3. Our company acquires new knowledge. 4. Our company actively contributes to the development of new products or services. 5. Our company acquires new groups of customers. 6. Our company optimizes the organization of work.

Source: De Jong & Den Hartog (2008)

3.6.2 Information Technology

In order to make this research more realizable, operational definition of information technology was illustrated. First, information technology was measured using the scale adapted from Rasula *et. al* (2012). It consists of six items. All items were measured across 5- point Likert scale ranging from 1= Strongly Disagree, 2= Disagree, 3= Neither Agree nor Disagree, 4= Agree, 5= Strongly Agree. All items are listed in the table below:

Table 3.3

Items and Operational Definition of variable for Information Technology

Variable	Operational Definition	Items
Information Technology	The ability of technology to capture knowledge and usage of information systems.	1. In our organisation, Information Technology tools are used to store data on implementing projects, tasks and activities. 2. In our organisation, Information Technology tools are used to store information on suppliers and customers. 3. In our organisation, Information Technology tools are used to support collaborative work (e.g. Calendars, video conferencing systems, communication tools). 4. Information Technology tools in our organisation are simple to use and have a user friendly interface. 5. Information Technology tools in our organisation enable effective work. 6. In our organisation, we see the

advantage of using Information Technology tools in the fact that it prevents the loss of knowledge.

Source : Rasula *et. al* (2012)

3.6.3 Organizational Performance

Organizational performance is an important aspect that can show either company would be successful or not. In order to make this research more realizable, operational definition of the organizational performance was illustrated. First organizational performance was measured using the scale adapted from Kim, (2005). The scale consists of 5 items. All items were measured across 5- point Likert scale ranging from 1= Strongly Disagree, 2= Disagree, 3= Neither Agree nor Disagree, 4= Agree, 5= Strongly Agree. All items are listed in the table below:

Table 3.4
Items and Operational Definition of Variable for Organizational Performance

Variable	Operational Definition	Items
Organizational Performance	Whether the company does well in discharging the administrative and operational functions pursuant to the mission and whether the company actually produces the actions and outputs pursuant to the mission or the institutional mandate.	1. My organization has made good use of employees knowledge and skills in looking for ways to become more efficient. 2. In the past two years, the productivity of employees work unit has improved. 3. My organization rate the quality of work performed by co-workers within their work group.

4. My organization is trying to reduce cost in managing organization and performing works.
5. In general, all are treated with respect in my organization, with no regard to status and grade.

Source: Kim (2005)

3.7 Data Collection Techniques

To make this research more reliable, this research used questionnaire method to collect the data. The primary aim is to attain the respondents are convenient to give feedback in terms of time and enable the researcher to get accurate information. The questionnaires were personally administered and distributed to the respondents by email. Besides that, the respondents were advised to give their frank and honest opinion regarding questions. The questionnaire was created by using “Google Forms Online Questionnaire.” Full questionnaire provides in Appendix K.

In order to ensure the respondents to completely answer the questionnaires, the respondents were given one month to complete the questionnaires at their convenience. The questionnaires were sent through email on 19th October 2015 to all targeted public listed companies in Malaysia.

During the data collection, it involved four attempts. The first attempt, 214 questionnaires were distributed to the respondents through email attached with permission letter (Appendix J). However, the feedback from the respondents are not

satisfied. The questionnaires (214 questionnaire) were sent again to the respondents in order to ensure the respondents answer it. But, the feedback from the respondents has no much difference. They just ignored the email. After that, the respondents were contacted personally through the phone calls as a third attempt. However, a small feedback received from the respondents that answered the questionnaire. The last attempt, the respondents were contacted again personally to ensure that the questionnaire was answered and they answered it but just a little amount.

After one month questionnaires were distributed and involved four attempts, on 19th November 2015, the total of questionnaires that received the feedback is 31 sets out of 214 sets of questionnaires. The full selected respondents and the total feedback received are provided in the Appendix A.

3.8 Sample Size

A total of population this study is 814 organizations (Bursa Malaysia,2015). Refers to Sekaran (2006) table, if the population is 814, the sample will be 214. Thus, 214 respondents will be considered from the sample frame which will serve as sample size for the purpose of this study. Sekaran, (2006) also stated sample sizes that are most suitable for most research must be above 30 and below then 500. Therefore, a total of 31 respondents is convenient for this research. Meanwhile, according to Cohen (1998), minimum sample size can be by look at the arrow of independent variable to the dependent variable with use 10 times rule (10 x rule).

3.9 Sampling Technique

In this sampling frame, the researcher used the probability sampling method. In selecting the 214 respondents to represent the sample size, Systematic random sampling is used that every 3rd element in the population started with randomly chosen element between 1 and 3. There are several reasons for using this sampling design. Firstly, the probability sampling does not depend upon the existence of detailed information about the universe for its effectiveness. Secondly, the probability sampling provides estimation which are essentially unbiased and it has measurable precision. Thirdly, it is possible to evaluate the relative efficiency various sample designs when only probability sampling is used. Since all persons (or “units”) have an equal chance of being selected for the survey, it randomly can select participants without missing entire portions of the audience.

3.10 Units of Analysis

The units of the analysis for this research is based on the organizations. But the data were collected from departments and individual employees. In order to do the analysis, the data would be clarified as organization level.

3.11 Data Analysis Technique

In order to determine the reliability of the measures used in the questionnaires, this study used of Cronbach’s alpha to see if the items are reliable. In terms of analysing the data, the reliability test run by using Statistical Package for the Social Sciences (SPSS 21.0)

has been used. First, the demographic profile of the respondent was analysed by using descriptive statistic. Descriptive analysis is a tool in order to make it easy to interpret and understand about the transformation of the raw data into the form (Sekaran, 2003).

Next is factor analysis. According to Hair, Black, Babin, Anderson, and Tatham (2006), the factor analysis has been used to make the number of items suitable and underlying with the structure of the variables. Refers to Hair *et. al* (2006), every single item should cross loading below .30 and above than .50.

In terms of the reliability test, most of the researchers used the Cronbach's Alpha to measure the reliability of the variables. If the results of the reliability show less than .60, it is considered as poor, if it is in the range of .70, it is considered as acceptable and if it is above than .80 it is considered as good and strong (Sekaran,2003).

In order to ensure the skewness and kurtosis normal or not, normality test will be conducted. Skewness and kurtosis will be accepted if it is below than critical value 3.3 (Thabachnick and Fidell, 1996).

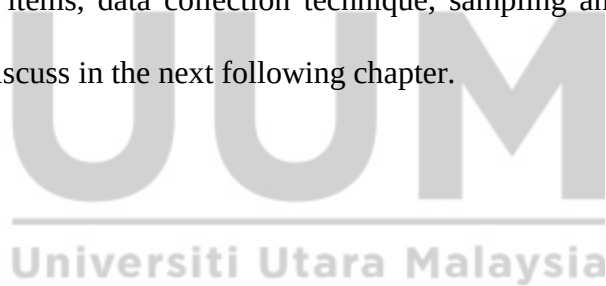
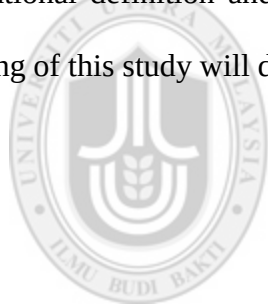
Furthermore, the correlation coefficient will be used to ensure the relationship has significant or not between variables. In order to describe the relationship between variable, scale suggested by Davis (1971) will be used. According to Davis (1971), if the scales range is 0.01 to 0.09, it is considered as a very low relationship. The scale range of 0.10 to 0.29, it is considered as low. If the scale range is 0.30 to 0.49, it is considered

as moderate. The scale range between 0.50 to 0.69, it is a strong relationship. And if the scale range is above than 0.70, it is considered as a very strong relationship.

Lastly, in order to analyze the dimension of the innovation, information technology, and the organizational performance, the Multiple Regression Analysis will be used.

3.12 Conclusion

This chapter provides the method of collecting the data used in this study. It includes the operational definition and items, data collection technique, sampling and design. The finding of this study will discuss in the next following chapter.



CHAPTER FOUR

FINDING AND DATA ANALYSIS

4.1 Introduction

This chapter presents the finding and analysis of the data received. Analysis of the data was analyzed by using SPSS (Version 21). The chapter begins with the respondents' company profiles. After that, the analysis continued with the factor analysis followed by reliability analysis of independent variables (Innovation and Information Technology) and the dependent variable (Organizational Performance). Finally, by using regression analysis, the result of hypothesis testing is shown.

4.2 Response Rate

A total of 214 questionnaires was distributed to the Malaysian Public Listed Companies through e-mail. Out of the 214 questionnaires, only 31 usable questionnaires were returned, giving an overall response rate of 14.5%. Table 4.1 below shows in detailed:-

Table 4.1
Response rate

	Total	Percentage (%)
Distributed questionnaires	214	100
Returned questionnaires	31	14.48
Unreturned questionnaires	183	85.51
Usable questionnaires	31	14.48

4.3 Profile of the Respondents

Table 4.2 showed the respondents' profiles. Refers to the table, there are total of 31 respondents from public listed companies in Malaysia based on the different types of industry. The output presented in the Table 4.2 below also showed the company profiles for the year of establishment and number of the employees. As shown in Table 4.2, about 74% of the samples of companies have been running their business for 35 years and below. A total of 22 companies (71%) have fewer than 1000 employees. The sample also represents many industries in which category of them are in the manufacturing industry (38.7%). Appendix B provided the full SPSS output.

Table 4.2
Profile of the respondents

Companies' Profiles	Category	Frequency	Percentage (%)
Year of Establishment	Before1959	1	3.2
	1959-1978	7	22.6
	1979-1998	12	38.7
	After 1999	11	35.5
Number of the Employees	Less than 1,000	22	71.0
	1,001-2,000	1	3.2
	2,001-3,000	3	9.7
	More than 3,000	5	16.1

Type of Industry	Manufacturing	12	38.7
	Agriculture	2	6.5
	Property	1	3.2
	Financial and Business Services	5	16.1
	Oil and Chemical	4	12.9
	Others	7	22.6
	Total	31	100

4.4 Factor Analysis

This part elaborates the output from the statistical analysis which includes factor analysis. The exploratory factor analysis is used to measure the content validity, that is to what extent can the measurement represent the content aspect measured (Piaw, 2012), and will confirm whether or not the theorized dimensions emerge (Sekaran, 2010). If a measurement accurately reflects the true value of the variable, the value of correlation will be high and the research will have high validity (Piaw, 2012).

4.4.1 Factor Analysis of Innovation

In this study, factor analysis has been used. According to Pallant (2013), factor analysis attempts to identify a small set of factors that represents the underlying relationships among a group of related variables. Every single item should be above .50 and below .30 cross loading in terms of the criteria to analyse the factors (Hair *et al*, 2006). In order to

measure the Innovation, 6 items have been used. Table 4.3 shows the factor analysis for innovation.

Table 4.3
Result of Factor Analysis for Innovation

Items	Factor 1
Inn1	.913
Inn4	.830
Inn2	.819
Total Variance Explained	73.09%
KMO	.655

Based on the results, only 3 items relating to innovation were remained for further analysis, namely Inn1, Inn2, and Inn4 from a total of 6 items. The items were deleted due to cross loading below .30 and loading above .50. Thus, only 3 items were remained further analysis. Appendix C provides the full SPSS output.

4.4.2 Factor Analysis of Information Technology

In order to measure information technology, 6 items have been used. Refers to Table 4.4 below, from the 6 items, no item has been removed. According to Hair *et al* (2006), the item should be above than .50. Thus, all items fulfil the requirement above .50. Based on KMO, the sampling adequacy value of the items was .754. From the result of factor analysis, the total variance explained is 69.19%. Appendix D provides the full SPSS output.

Table 4.4
Result of Factor Analysis for Information Technology

Items	Factor 1
Tech4	.932
Tech6	.866
Tech1	.848
Tech2	.789
Tech5	.786
Tech3	.758
Total Variance Explained	69.19%
KMO	.754

4.4.3 Factor Analysis of Organizational Performance

Due to measure organizational performance as dependent variable, 5 items have been used. From the total 5 items, 1 item has been removed namely OP4 because communalities values below than .50. Other items, namely OP1, OP2, OP3 and OP5 were retained. Table 4.6 below shows the values of each item. The results also showed the KMO value is .733 and the total variance explained is 65.68%.

Appendix E provides the full SPSS output.

Table 4.5
Result of Factor Analysis for Organizational Performance

Items	Factor 1
OP5	.913
OP2	.827
OP1	.751
OP3	.738
Total Variance Explained	65.68%
KMO	.733

4.5 Reliability Analysis

In order to test the reliability of the variables, this study used Cronbach's Alpha. The values results of Cronbach's Alpha of each variable were elaborated in the Table 4.7 below:-

Table 4.6
Reliability Analysis Results.

Variables	Total of items	Cronbach's Alpha
Innovation	3	.799
Information Technology	6	.908
Organizational Performance	4	.822

Table 4.6 illustrated the values of Cronbach's Alpha for independent variables (innovation and information technology), and dependent variable (organizational performance). The reliability range should be at least .60 and if less than .60 it is considered as not reliable and if it is above than .60, it will be more reliable (Sekaran, 2003). Based on the table, the range of the values showed the results between .799 and .908 which is all the variables are reliable. Appendix F provides the full SPSS.

4.6 Descriptive Analysis

In order to test the mean and standard deviation of each variable which includes innovation, information technology, and organizational performance, descriptive analysis were used. Table 4.7 below shows the values of mean, standard deviation, Skewness, and Kurtosis for each variable.

Table 4.7
Descriptive Statistic of the Variables.

Variables	Mean	Std. Deviation	Normality	
	(M)	(SD)	Skewness	Kurtosis
Innovation	4.18	.70	-0.538	-0.654
Information Technology	4.07	.71	-0.587	0.026
Organizational Performance	4.10	.54	0.195	-0.744

Table 4.7 above showed the mean and standard deviation results for each variable which includes IV (Innovation and Information Technology), and DV (Organizational Performance). Five Points Likert scale has been used and all the values of the variable were based on that. Based on the results, it showed the mean (M) and standard deviation

(SD) for innovation ($M=4.18$, $SD=.70$), information technology ($M=4.07$, $SD=.71$), and organizational performance ($M=4.10$, $SD=.54$). The result also showed that the innovation has the highest mean with ($M=4.18$). Meanwhile, the information technology has the lowest mean with ($M=4.07$).

The values of skewness and kurtosis for innovation, information technology, and organizational performance also showed in the Table 4.8 to find out the normality of the variables. Based on the results, the range values of skewness for innovation, information technology, and organizational performance were between -0.587 and 0.195.

Meanwhile the values of kurtosis for innovation, information technology, and organizational performance were between -0.744 and 0.026. According to Tabachnick and Fidell (1996), the value for skewness and kurtosis must be below than a critical value 3.3. Hence, all the variables namely innovation, information technology, and organizational performance were fulfilled the condition above. Appendix G is provided the full SPSS.

4.7 Correlation Analysis

In this study, correlation analysis has been used to measure the relationship among variables. Innovation and information technology as independent variables and organizational performance as the dependent variable. The results of the correlation test showed in the Table 4.8 below:

Table 4.8
Correlation between Variables

Variables	Innovation	Information Technology	Organizational Performance
Innovation	-	-	-
Information Technology	.539**	-	-
Organizational Performance	.447*	.722**	-

Note: N= 31, ** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1- tailed).

Table 4.8 showed there were significant and also positive relationship between innovation, information technology, and organizational performance. All the variables were positive relationship based on the coefficient values. The organizational performance and information technology is the highest significant correlation with the value of ($r = .722$, $p < 0.01$). The lowest one is between organizational performance and innovation with the value of ($r = .447$, $p < 0.05$). Meanwhile, the correlation between innovation and information technology with the value of ($r = .539$, $p < 0.01$). Appendix H is provided the full SPSS output.

4.8 Regression Analysis between Innovation, Information Technology and Organizational Performance

In order to examine the relationship between independent variables (innovation and information technology), and dependent variable (organizational performance), multiple regression analysis has been used. This study is more appropriate when multiple

regression analysis has been used because the relationship between independent variables, dependent variable and continuous were able to show (Hair *et al*, 2006).

The regression analysis revealed that 52.6% of the variances in the dependent variable of organizational performance have been explained by the independent variables of innovation and information technology. This was shown by the R square value of 0.526 (refer to Table 4.9). The information technology variable ($\beta = 0.679$, $p < 0.05$) has a significant relationship to the organizational performance. Meanwhile, the regression result of innovation does not reveal being significant to the organizational performance. Appendix I is provided the full SPSS output.

Table 4.9
Result of Regression Analysis of Innovation and Information Technology on Organizational Performance

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.731	.474		3.684	.001
Innovation	.062	.119	.081	.523	.605
Information Technology	.517	.118	.679	4.396	.000*

Dependent Variable: Organizational Performance (OP)

R Square = 0.526

F = 15.54

* $p < 0.05$

Based on the result above, the hypothesis H1 (Innovation has a relationship with organizational performance) was rejected. While hypothesis H2 (Information technology has a relationship with organizational performance) was accepted.

4.9 Summary of Hypotheses Testing

The following Table 4.10 shows the summary of the findings of hypothesis testing:

Table 4.10
Summary of Hypotheses Testing

Hypotheses	Results
H1 Innovation has a relationship with organizational performance	Rejected
H2 Information technology has a relationship with organizational performance	Accepted

4.10 Conclusion

This chapter presented the results and data analysis of the study. From the data, factor analysis, reliability, correlation, and multiple regression analysis were carried out. Based on the factor analysis finding above, only 13 out of 20 items could be pursued for further analysis.

In terms of the values for Cronbach's Alpha, all variables which include independent variables (Innovation and Information Technology), and dependent variable (Organizational Performance) considered as good relationship and acceptable.

The result of multiple regression analysis yields the innovation has no significance with the organizational performance. In contrast, the information technology has a relationship and significantly with organizational performance.



CHAPTER FIVE

DISCUSSION AND RECOMMENDATION

5.1 Introduction

This chapter discusses the findings in relating to the objectives of the study. Based on the objectives, this study aims to determine the link between three variables namely innovation and information technology (Independent Variable), and organizational performance (Dependent Variable). In this chapter also presents the theoretical and practical implications, limitations of this study, and recommendations for future research.

5.2 Relationship between Innovation and Organizational Performance

There are several objectives for this research. The first research objective is to investigate the relationship between innovation and organizational performance. Based on the analysis results in the Table 4.10, this study found that there is no significant effect between innovations and organizational performance. The plausible reason to this finding could be due to the context of the performance being measured. In this study, organizational performance focused more on the process of producing output rather than the output itself. In this regard, the result of innovation is difficult to be identified in the

work process. Rather the effect of innovation could be observed more obviously is performance is measured in terms of output such as scale, profit or income and so forth. Hence, the result showed the innovation has no direct effect on the organizational performance in Malaysian public listed companies.

5.3 Relationship between Information Technology and Organizational Performance

The next objective of this study is to analyze the relationship between information technology and organizational performance. The results in the Table 4.10 showed that information technology has a significant effect on the organizational performance. Thus, this result has answered the research question RQ2, information technology has influenced the organizational performance. In other words, information technology has relationships with the organizational performance in Malaysian public listed companies.

Information technology can enhance the organizational performance. This is supported by Chirani and Tirgar (2013) that information technology has capabilities to improve the organizational performance based on its advantages such as good information technology tools enabler the work becomes more effective. In addition, it also provides the capabilities and competitive advantage to enhance the organization's performance (Ringim, Razalli, and Hasnan 2012). On the other hand, information technology will encourage the organization to perform effective work when the good information technology has been used.

According to Sambamurthy *et. al* (2003), information technology is an essential role to enhance the firm's performance. The previous study by Ringim, Razalli & Hasnan (2012) in the banking sector showed that information technology has a relationship with organizational performance. Therefore the information technology can enhance the organizational performance. This is supported by Pellet (2006), stated that information technology is one of the major components for high performance in the organization. In this study, the result also showed through information technology, performance of the Malaysian public listed companies will be increased.

5.4 Implication of the Study

Based on the finding that has been discussed in the previous chapter, this provides implications theoretically and practically. Theoretically, Theory RBV was partially supported innovation and information technology to enhance the organizational performance.

In practice, the information technology enhanced the performance of the organization. Focusing on Malaysian public listed companies, it shows that information technology has positive implication to make many companies improve their performance to stay competitive. Information technology is an important tool to make their work becoming more effective. Besides that, information technology also gives the advantage for the employees in the company to prevent lack of knowledge. In addition, information technology was used due to underpin collaborative work such as video conferencing systems in the meeting and many else.

Overall, the information technology has influenced in order to improve organizational performance in Malaysian public listed companies, but innovation does not .

5.5 Recommendation for Future Research

This study can be extended in several ways. For future research, this study can be pursued to make comparative analysis and see how other companies improve their organizational performance through innovation, information technology, and knowledge management. Since this study only focused on public listed companies, perhaps for the future, a specific research on manufacturing companies which is covered only among Malaysian public listed companies or a research to make a comparison between private and public companies in Malaysia can be carried out.

Besides that, in order to make the results of the variables more significantly, the further research can make a combination of the data collected from questionnaires through secondary data. It can be different indicators. Furthermore, the model also can be extended more variables to make it reflect the practices in the private, public or only focusing on one type of industry such as manufacturing companies.

5.6 Limitation of the Study

In this study, there were several limitations in order to finish it. The first limitation is based on the population. The population only from public listed Companies in Malaysia

and it is not presenting the private companies in Malaysia. The second limitation of this study is based on the sample. The sample 31 organizations were focused at the organization level only and just one employee on behalf for one organization. Third, this research is a cross sectional study. The data are collected and analyzed at one point of time. Thus, the causal effect cannot be established. Fourth, the quantitative (questionnaire) method has been used in this research. This thing might be affected by response bias.

Next limitation is based on the framework. In this study, the researcher just focuses on the innovation and information technology that could enhance the organizational performance. Other factors such as employee motivation and empowerment also might be can enhance the organizational performance (Dobre, 2013).

5.7 Conclusion

This chapter was conducted to discuss in details, provide the reasons and suggestions based on data analysis. The implication of the study was discussed following with recommendations for the future research and limitation of the study.

The purpose of this study is to know the relationship between innovation and information technology on the organizational performance in Malaysian public listed companies. The study had reached all research objectives of this study. The finding revealed that information technology had a relationship with organizational performance. Therefore, the findings had validated through information technology, performance of the Malaysian public listed

companies was increased. In contrast, the finding revealed that innovation had no relationship with organizational performance.

In a nutshell, this study has successfully answered all the research objectives. Nevertheless, there is a need for future researchers to investigate the innovation and information technology that would improve the organizational performance from different perspectives.



REFERENCES

- Abu-jarad, I. Y., Yusof, N., & Nikbin, D. (2010). A Review Paper on Organizational Culture and Organizational Performance. *International Journal of Business and Social Science*, 1, 26–46.
- Aguinis, H. (2004). Regression analysis for categorical moderators. NY: Guilford
- Anspach, R. R. (1991). Everyday Methods for Assessing Organizational Effectiveness. *Social Problems*. <http://doi.org/10.1525/sp.1991.38.1.03a00010>
- Anderson, Mark C., Banker, Rajiv D dan Ravindran Sury, 2003, *The New Productivity Paradox* Communication of The ACM), March 2003/Vol. 46, No. 3
- Au, C. F. (1996). Rethinking organizational effectiveness: Theoretical and methodological issues in the study of organizational effectiveness for social welfare organizations. *Administration in Social Work*, 20, 1–&. http://doi.org/10.1300/J147v20n04_01
- Al-Zu'bi, H. A. (2010). A study of relationship between organizational justice and job satisfaction. *International Journal of Business and Management*, 5(12), p102.
- Aragón-Correa, J. A., García-Morales, V. J., & Córdón-Pozo, E. (2007). Leadership and organizational learning's role on innovation and performance: Lessons from Spain. *Industrial marketing management*, 36(3), 349-359.

Balkin, D. B., Markman, G. D., & Gomez-Mejia, L. R. (2000). Is CEO Pay in high technology firms related to innovation?. *Academy of Management Journal*, 43(6), 1118-1129. <http://dx.doi.org/10.2307/1556340>

Bank Negara Malaysia 2005, *Bank Negara Malaysia*, viewed 10 April 2005, <http://www.bnm.gov.my> .

Barney, J. B., Ketchen, D. J., & Wright, M. (2011). The future of resource-based theory revitalization or decline?. *Journal of management*, 37(5), 1299-1315.

Barney, J., 1991, *Firm Resources and Sustained Competitive Advantage*, *Journal of Management*, Vol 17, no. 1

Bates, R. and Khasawneh, S. 2005. "Organizational learning culture, learning transfer climate and perceived innovation in Jordanian organizations, *International Journal of Training and Development*, Vol. 9, pp. 96–109.

Bursamalaysia,. (2014). *A Practical Guide to Listing on Bursa Malaysia*. Retrieved 14 October 2015, from http://www.bursamalaysia.com/website/bm/about_us/.

Bill Goodwin. (2014). Firm Lack of Technology workforce of the future. *Computerweekly.com* Retrieved 17 October 2015 <http://www.computerweekly.com/news/2240233165/Firms-lack-technology-for-workforce-of-the-future>.

Bowen, F. E., Rostami, M., & Steel, P. (2010). Timing is everything: A meta-analysis of the relationships between organizational performance and innovation. *Journal of Business Research*, 63(11), 1179-1185.

Brynjolfsson, E., & Hitt, L. (1996). Paradox lost? Firm-level evidence on the returns to information systems spending. *Management science*, 42(4), 541-558.

Brynjolfsson, E. and Yang, S. (1999), "The intangible costs and benefits of computer investments: evidence from the financial markets", working paper, MIT Sloan School of Management, Cambridge, MA.

Brynjolfsson, Erick, 1993, *The Productivity Paradox of Information Technology: Review and Assessment*, Communication of ACM, and Japan Management Research

Brynjolfsson, E. & Hitt, L. (1995). Information Technology as a Factor of Production: the Role of Differences among Firms, *Economics of Innovation and New Technology*, Vol. 3: 183-199. doi:10.1080/104385995000000002, <http://dx.doi.org/10.1080/104385995000000002>

Bharadwaj, G., Bharadwaj, S. and Konsynski, B. (1999), "Information technology effects on firm performance as measured by Tobin's q", *Management Science*, Vol. 45 No. 6, pp. 1008-24.

Brewer, G. A., & Selden, S. C. (2000). Why elephants gallop: Assessing and predicting organizational performance in federal agencies. *Journal of Public Administration Research and Theory*, 10, 685–712. <http://doi.org/Article>

Bursa Malaysia (19 October 2015). Retrieved from http://www.klse.com.my/website/bm/about_us/the_organisation/history.html

Campbell, J. J., Dunnette, M. D., Lawler, E. E., & Weick, K. E. (1970). Managerial behavior, performance, and effectiveness.

Chirani, E., & Tirgar, S. M. (2013). Information technology's role in organizations' performance. *Kuwait Chapter of the Arabian Journal of Business and Management Review*, 3(1), 16.

Chui Yan, Y. (2010). Perwaja Steel: Case and Instructor's Manual.

Cohen J. 1988. Statistical Power Analysis for the Behavioral Sciences. Hillsdale, NJ: Erlbaum. 2nd ed.

Daft, R. L. (2000). Organization Theory and Design. (7th ed.) South-Western College Publishing, Thomson Learning. U.S.A.

Daft, R., & Becker, S. (1978). *Innovation in Organizations: Innovation Adoption in School Organizations*. New York: Elsevier.

Damanpour, F. (1992). Organizational Size and Innovation. *Organization Studies*.
<http://doi.org/10.1177/017084069201300304>

Damanpour, F. (1988). Innovation type, radicalness and the adoption process. *Communication Research*, 15(5), 545-567.

Davis, M. J. (1971). On polar substorms as the source of large-scale traveling ionospheric disturbances. *Journal of Geophysical Research*, 76(19), 4525-4533.

Dans, Enrique, 2001, IT Investment in Small and Medium Enterprises: Paradoxically Productive?, *Electronic Journal of IS Evaluation*, Vol. 4, n. 1, Mar. 2001

Devaraj, S., & Kohli, R. (2001). *The IT payoff: measuring the business value of information technology investments*. Financial Times/Prentice Hall.

De Jong, J.P.J & Den Hartog, D. N. (2008). Innovative Work Behavior : Measurement and Validation. *Scientific Analysis of Entrepreneurship and SMEs*, 1–27.

Dobre, O. I. (2013). Employee motivation and organizational performance. *Tabel of Contents*.

Dos Santos, Bryan L., Pfeffer, Ken., Mauer, David C., 1993, *The Impact of Information Technology Investment Announcements on the Market Value of the Firm*, Information Systems Research 4 : 1, |O47-7O47/93/O4OI/0O0I/\$O1.25, The Institute of Management Sciences

Fernandes, C., & Awamleh, R. (2006). Impact of organisational justice in an expatriate work environment. *Management research news*, 29(11), 701-712.

Gavrea, C., Ilies, L., & Stegorean, R. (2011). Determinants of organizational performance: the case of Romania. *Management & Marketing*, 6(2), 285.

Georgopoulos, B. S., & Tannenbaum, A. S. (1957). A study of organizational effectiveness. *American Sociological Review*, 534-540.

Gopal, S., & Kumar, D. (2011). Strategic Interventions in Tackling Poor Performance of Service Departments: Study on Muhibbah Engineering (M) Bhd, Malaysia.

Garcia-Morales, V. J., Matias-Reche, F., & Hurtado-Torres, N. (2008). Influence of transformational leadership on organizational innovation and performance depending on the level of organizational learning in the pharmaceutical sector. *Journal of Organizational Change Management*, 21(2), 188-212.

Greve, H. R. (2003). A behavioral theory Of Rand D Expenditures and innovations: evidence from shipbuilding. *Academy of Management Journal*, 46(6), 685.

<http://dx.doi.org/10.2307/30040661>

Gulati, R. (1998). Alliances and networks. *Strategic management journal*, 19(4), 293-317.

Glor, E. D. (2014). Studying the Impact of Innovation on Organizations, Organizational Populations and Organizational Communities: A Framework for Research. *The Innovation Journal*, 19(3), 1.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (Vol. 6). Upper Saddle River, NJ: Pearson Prentice Hall.

Hage, J. (1999). Organizational innovation and organizational change. *Annual Review of Sociology*, 25, 597-622.

Heffernan, M., M., & Flood, P. C. (2000). An Exploration of the Relationship between Managerial Competencies Organizational, Characteristic and Performance in an Irish organization. *Journal of European Industrial Training*. University Press, p128-136.

Hsu, C. C., & Pereira, A. (2008). Internationalization and performance: The moderating effects of organizational learning. [Review]. *Omega- International Journal of Management Science*, 36(2), 188-205. doi: 10.1016/j.omega.2006.06.004

Ho, Shirley J., Mallick, Sushanta K., 2006, *The Impact of Information Technology on the Banking Industry: Theory and Empirics*, National Chengchi University, Taiwan

Jen Huang, C., & Ju Liu, C. (2005). Exploration for the relationship between innovation, IT and performance. *Journal of Intellectual Capital*, 6(2), 237-252.

Kemp, R. G., de Jong, J. P. J., Folkeringa, M., & Wubben, E. F. M. (2003). Innovation and firm performance: Differences between small and medium-sized firms. In *Annual International SMS-conference on Intersections: Strategy across Conventional Boundaries*, November 10-12, 2003.

Kohli, R., & Devaraj, S. (2003). Measuring information technology payoff: A meta-analysis of structural variables in firm-level empirical research. *Information systems research*, 14(2), 127-145.

Kostopoulos, K. C., Spanos, Y. E., & Prastacos, G. P. (2002, May). The resource-based view of the firm and innovation: identification of critical linkages. In *European Academy of Management Conference*, Stockholm, Sweden.

Kim, S. (2005). Individual-level factors and organizational performance in government organizations. *Journal of public administration research and theory*, 15(2), 245-261.

Kraemer, Kenneth L., Dedrick, Jason., 2001, *Payoffs From Investment in Information Technology: Lesson From The Asia-Pacific Region*, Center for Research on Information Technology and Organizations University of California, Irvine

Lafley, A. G., & Charan, R. (2008). P&G's innovation culture. *Strategy+ Business Magazine*, 1-10

Ling, Y. H., & Hong, L. (2010). How intellectual capital management affects organizational performance: Using intellectual capital as the mediating variable. *Human Resource Management Student Newspaper*, 10(1), 1-17.

Lusthaus, C., & Adrien, M. H. (1998). Organizational assessment: A review of experience. *Universal Occasional Paper*, 31.

Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Review: Information technology and organizational performance: An integrative model of IT business value. *MIS quarterly*, 28(2), 283-322.

Mousavi, S. S., & BadrAbady, M. H. (2008). The Role of Information Technology in Organizational Procedures' Improvement with Knowledge Based Approach-A Study of the Iranian Taxation Affairs Organization. *World Applied Sciences Journal*, 3(2), 55-66.

- Moustaghfir, K., & Schiuma, G. (2013). Knowledge, learning, and innovation: Research and perspectives. *Journal of Knowledge Management*, 17, 495–510. Retrieved from <http://www.scopus.com/inward/record.url?eid=2-s2.0-84880161222&partnerID=40&md5=cdbb77e6fd9c8e1a557b86283d51144c>
- Mukhopadhyay, T., Kekre, S., & Kalathur, S. (1995). Business value of information technology: a study of electronic data interchange. *MIS quarterly*, 137-156.
- Mushure, G. O. N. (2014). Financial Analysis Report: Malaysia Airlines 2007-2011.
- Nakata, Cheryl; Zhu, Zhen; Kraimer, Maria L., (2008). The complex contribution of information technology capability to business performance, *Journal of Managerial Issues*.
- Novak, S., & Stern, S. (2008). How does outsourcing affect performance dynamics? Evidence from the automobile industry. *Management Science*, 54(12), 1963-1979.
- Oerlemans, L. A. G., Meeus, M. T. H., & Boekema, F. W. M. (1998). Do Networks Matter for Innovation? The usefulness of the economic network approach in analysing innovation. *Tijdschrift voor economische en sociale geografie*, 89(3), 298-309.
- Pallant, J. (2013). *SPSS survival manual*. McGraw-Hill Education (UK).

Penrose, E. T. (1959). *The Theory of the Growth of the Firm*: Oxford University Press.

Piaw, C.Y. (2012). *Mastering research method*. Selangor, Malaysia: Mc Graw Hill.

Rasula, Jelena, Vuksic, Vesna Bosilj & Stemberger, M. I. (2012). The Impact of Knowledge Management on Organizational Performance. *Economic and Business Review*, 14, 147–168. Retrieved from www.ebrjournal.net/ojs/index.php/ebr/article/download/85/pdf?

Raed, Awamleh and Fernandes, Cedwyn. (2006). Impact of Organizational Justice in an Expatriate Work Environment. *Management research news*, 29, (11), 701-712.

Ray, G., Barney, J. B., & Muhanna, W. A. (2004). Capabilities, business processes, and competitive advantage: choosing the dependent variable in empirical tests of the resource-based view. *Strategic management journal*, 25(1), 23-37.

Ringim, K. J., Razalli, M. R., & Hasnan, N. (2012). The Relationship between Information Technology Capability and Organizational Performance of Nigerian Banks. *International Journal of Technology and Management (IJTM)*, 1(1).

Ricardo, R., & Wade, D. (2001). *Corporate Performance Management: How to Build a Better Organization Through Measurement Driven Strategies Alignment*. Butterworth Heinemann.

- Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of management*
- Robey, D., Boudreau, M. C., & Rose, G. M. (2000). Information technology and organizational learning: a review and assessment of research. *Accounting, Management and Information Technologies*, 10(2), 125-155.
- Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011). Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs. *Journal of business Venturing*, 26(4), 441-457.
- Saunila, M., Pekkola, S. & Ukko, J. (2014), "The relationship between innovation capability and performance", *International Journal of Productivity and Performance Management*, Vol.63 Iss 2 pp. 234 -249
- Sambamurthy, V., Bharadwaj, A., & Grover, V. (2003). Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms. *MIS quarterly*, 237-263.
- Schiuma, K., (2013), "Knowledge, learning, and innovation: research and perspectives", *Journal of Knowledge Management*, Vol. 17 Iss 4 pp. 495 – 510

Scholl, H.J. (2002), “Information and public administration: eGovernment (ETEGV)”,
in Sprague, R. (Ed.), Proceedings of the 35th Annual Hawaii Conference on
System Sciences, IEEE Computer Society, Los Alamos, CA.

Sekaran, U., & Bougie. R. (2010). *Research methods for business*. West Sussex, UK: John
Wiley.

Sekaran, U. (2006). *Research method of business: A skill-building approach*. Writing.
[http://doi.org/http://www.slideshare.net/basheerahmad/research-methods-for-
business-entire-ebook-by-uma-sekaran](http://doi.org/http://www.slideshare.net/basheerahmad/research-methods-for-business-entire-ebook-by-uma-sekaran).

Sekaran, U. (2003). *Research Methods for Business: A Skill Building Approach* (4th ed).
New York: John Wiley & Sons Inc.

Smith, J. (2008). *Information Technology's Influence on Productivity*. ProQuest.

Silva, M. J., Leitão, J., & Raposo, M. L. B. (2007). Barriers to Innovation faced by
Manufacturing Firms in Portugal: How to overcome it?. *Available at SSRN*
1023825.

Strassman, P. A. *The Business Value of Computers*, The Information Economics Press,
New Haven, CT, 1990.

Strassman, P. A. *The Squandered Computer*, The Information Economics Press, New Haven, CT, 1997.

Solow, R, 1987, “We’d better Watch Out”, *New York Times Book Review*, July 12, p.36

Tajuddin, M. Z. M., Iberahim, H., & Ismail, N. (2015). Relationship between Innovation and Organizational Performance in Construction Industry in Malaysia. *Universal Journal of Industrial and Business Management*, 3(4), 87-99.

Tabachnick, B.G. and Fidell, L.S. (1996). *Using Multivariate Statistics*. NY: HarperCollins.

Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative science quarterly*, 35-67.

Venkatesh, V., & Davis F.D. (2000), “A *theoretical extension of the Technology Acceptance Model*,” *Journal of Management Sciences* Vol. 2, pp. 186-204.

Wernerfelt B. 1984. A resource-based view of the firm. *Strategic Management Journal* 5(2): 171–180.

Westrum, R. (2004). A typology of organisational cultures. *Quality & Safety in Health Care*, 13 Suppl 2, ii22–i27. <http://doi.org/10.1136/qshc.2003.009522>

Wright, R. E., Palmer, J. C., & Perkins, D. (2004). Types of product innovations and small business performance in hostile and benign environments. *Journal of Small Business Strategy*, 15(2), 33.

Yuchtman, E. & Seashore, S. (1967), "Factorial Analysis of Organizational Performance", *Administrative Science Quarterly* 12(3), pp. 377-95

Zaltman, G., Duncan, R., & Holbek, J. (1973). *Innovations and Organizations*. New York: John Wiley.

Zhang, Michael J., (2007) Assessing the performance impacts of information systems from the resource-based perspective: An empirical test of the indirect effect of IS, *Journal of Business Strategies, Center for Business and Economic Research*.