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A STUDY ON ENTERPRISE RESOURCE PLANNING (ERP) SYSTEM  
ADOPTION TOWARDS INCREASING PRODUCTIVITY: CASE STUDIES OF  
THREE MANUFACTURING INDUSTRIES

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This report is submitted in fulfilment of the requirement for the Bachelor of  
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## DECLARATION

‘I declare that this report is my own work except the summary and excerpts of everything I have to explain the source’

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## DEDICATION

I would like to express my gratitude to the success of this report from Chapter 1 to Chapter 5 especially for both of my parents, Khalit Bin Hashim and Aminah Binti Yusuff. The sacrifices that they had contributed for me to further my studies would not be enough to pay back as they had sacrifices a lot in term of time and money. I am also proud enough and honoured to have them as my parents. Secondly, I would like to dedicate my gratitude to my siblings that provide a lot in term of spirit support. Lastly, I would like to thanks to my supervisor for this Final Year Project Report, Dr Yusri Bin Arshad, my panel Mr. Hasoloan Haery Ian Pieter and all of my friends.

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## ABSTRACT

Enterprise Resource Planning or simply be known as ERP had been implemented in many organizations and had been grown rapidly worldwide in recent year. Even though ERP System already been established way back in 90-an, however it still become the ultimate choice by organization in Malaysia due to its own special characteristics and capabilities in improving business performance. Even though the cost and process of implementing ERP system are bit lengthy and expensive but if it was successful it capable in providing the organization a biggest impact in term of performance and everything. In this study, it seeks to examine the effectiveness of ERP System in increasing productivity of manufacturing industries at Pulau Pinang. The researcher had come out with a conceptual framework in which independent variables such as top management support, user support, system use, system quality, information quality, and the dependent variables increasing productivity of manufacturing industries. The pilot test will be done by distributing questionnaire to small groups of respondents that are engaged with ERP system with their daily works. The objectives of this pilot test is to ensure the question in the questionnaire able to understand the respondents before been distributed broadly. Then, data will be analysed by using SPSS software to calculate the Cronbach's Alpha to know its reliability, Pearson Correlation Coefficient to measure linear correlations that are exists between two variables and linear regression to calculate the significant value. Further discussions will be done from the analysis data and next recommendation and conclusion will be discussing by the researcher.

## ABSTRAK

*Enterprise Resource Planning atau hanya dikenali sebagai ERP telah dilaksanakan di banyak organisasi dan ERP telah ditubuhkan pada 90-an, namun ia masih menjadi pilihan utama oleh organisasi di Malaysia disebabkan oleh ciri-ciri dan keupayaannya sendiri dalam meningkatkan prestasi perniagaan. Walaupun kos dan proses pelaksanaan sistem ERP agak mahal dan mengambil masa yang panjang tetapi jika berjaya dilaksanakan ia mampu memberikan organisasi itu kesan terbesar dalam jangka masa pendek, meningkatkan prestasi dan segala-galanya. Dalam kajian ini, ia bertujuan untuk mengkaji keberkesanan Sistem ERP dalam industri perkilangan di Pulau Pinang. Penyelidik telah membuat rangka kerja konsep di mana pembolehubah bebas seperti pengurusan atasan sokongan, sokongan pengguna, penggunaan sistem, kualiti sistem, kualiti maklumat, dan pemboleh ubah bergantung adalah pemboleh ubah yang meningkatkan produktiviti industri perkilangan. Ujian perintis akan dilakukan dengan membagikan soal selidik kepada kumpulan kecil responden yang terlibat dengan sistem ERP dengan kerja harian mereka. Objektif ujian perintis ini adalah untuk memastikan persoalan dalam soal selidik dapat memahami responden sebelum diedarkan secara meluas. Kemudian, data akan dianalisis dengan menggunakan perisian SPSS untuk mengira Alpha Cronbach untuk mengetahui kebolehpercayaannya, Koefisien korelasi Pearson untuk mengukur korelasi linear yang wujud antara dua pembolehubah dan regresi linear untuk mengira nilai signifikansi. Perbincangan selanjutnya akan dilakukan dari data analisis dan cadangan seterusnya dan kesimpulan akan dibincangkan oleh penyelidik.*

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## LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
H <sub>0</sub>	Null hypothesis
TAM	Technology Acceptance Model
CSFs	Critical Success Factor
ERP	Enterprise Resource Planning System
BI	Behavioural Intention
PEOU	Perceived Ease of Use
PU	Perceived Usefulness

## CHAPTER 1

### INTRODUCTION

#### 1.0 Introduction

Nowadays, a business environment is getting more competitive and complicated as there are high expectations from customers. Business development in Malaysia is almost huge but it is not large enough to compete with other international market growth. As we seeking international growth by going global as an importer or exporter, specific system or application are needed in order to successfully growing the business globally. Hence, management support is essential for the business to grow both locally and internationally.

Enterprise Resource Planning are designed to support management in making process become more effective and efficient. It will integrate management of core business process, in real time by software and technology as era nowadays are more on information technology. According to Saleh and Zulkifli (2012), ERP could be useful and valuable tools for companies to build a strong information systems infrastructure and to enable the management to undertake better decision making based on the accurate and on-time information.



## **1.1 Background of Study**

This study is all about the effectiveness of Enterprise Resource Planning (ERP) in increasing productivity of manufacturing industries at Pulau Pinang. ERP System is a packaged of a software system that enables the companies to manage its resources effectively and efficiently by providing a fully integrated solution to meet an organization's information processing needs (Nah et al., 2009). According to Ramayah and Chiun (2007), ERP able to address the need of the companies across all range of industries as the ERP System software are the one that capable in tackle core business process such as order from customers, shipping, invoicing, material processing, order processing and others common activities in the companies. In this context, the research will be focusing on several factors that stimulate the functionality of the production and operation of the company. All of these elements will be put under consideration on defining the contribution of the successful implementation of ERP system in manufacturing industries.

## **1.2 Problem Statement**

ERP System had to catch the attention of many organizations in order to gain a strategic and competitive advantage as the current business nowadays become more challenging. Many companies nowadays used ERP systems as their cloud computing or as the base platforms that they rely on every day. But, ERP Systems are extremely complicated and complex information systems. There are several ERP System implementations that are failures because they did not achieve predetermined organization goals and objectives (Hossam & Mohamed, 2014). According to analyst firm Gartner, approximately 75 percent of implementation of ERP system unsuccessful.

By implementing ERP System, it will affect the organizations as will improve production or operation efficiently and make the organization work smoothly (Almgren & Bach, 2014). Based on the recent research, there are several factors that

encourage organizations to choose an ERP System as their base platforms but, whenever they implemented it could affect the organization and provide a negative output. In this study, the purpose of the research is on how to deal with this issue and propose a factor that capable to prevent those problems from occurred and make the ERP System as one of the factors that increases the productivity of an organization.

### **1.3 Research Question**

The research question is the first active step for this research project and this research will cover the following question:

1. What is the relationship between the effectiveness of ERP System towards increasing productivity in manufacturing industries at Pulau Pinang?
2. What is the impact of ERP system towards increasing productivity in manufacturing industries at Pulau Pinang?
3. What is the most factor that influences productivity increment of manufacturing industries by using ERP System?

#### **1.4 Research Objectives**

The objectives of the study had been stated as below:

1. To investigate the relationship between the effectiveness of ERP System towards increasing productivity in manufacturing industries at Pulau Pinang.
2. To analyse the impact of ERP system towards increasing productivity in manufacturing industries at Pulau Pinang.
3. To evaluate the most factor that influences productivity increment of manufacturing industries by using ERP System

#### **1.5 Scope of the Study**

Pulau Pinang has been choosing as my research location in which it is popular with the availability of the manufacturing establishments since back days. According to OECD Review of Higher Education in Regional and City Development (2014) mentioned that Pulau Pinang is the leader of the manufacturing industries at the northern of Malaysia. This research will focus on Penang Island where the capital city of George Town and Seberang Perai formerly as Province Wellesley. According to Departmental Statistic of Malaysia in 2015 there is 4,191 establishment of manufacturing industries in Pulau Pinang. With the high availability of manufacturing industries, we are aiming to distribute questionnaires to three manufacturing companies that implementing ERP and the respondents should be the person who always uses ERP in the organizations.

## **1.6 Limitations of Study**

In this research, there are several limitations in which cannot be controlled and out of control from expected and unexpected results. First of all, this study will be facing a limitation in term of subject segmentation which is only focusing on the small division of users. Therefore, small subjects will lead to a small or incompetence outcome. Other than that, the subject/ focus group of this research are mostly working-class individuals, local and/or international companies which might put a restriction into providing their company's information and data. Hence, getting cooperation from them will be an obstacle to this study and when the questionnaire been distributed, they are most probable to provide a falsely or dishonest feedback and answers and will lead to inaccuracy data.

## **1.7 Importance of the study**

This study wants to make a research about the Enterprise Resource Planning (ERP) System Adoption Towards Increasing Productivity: Case Studies Of Three Manufacturing Industries and the reason for this research is to know about the success factor of ERP system in Increasing Productivity at Manufacturing Industries. The findings of this study will provide benefits to the organizations especially manufacturing industries in Malaysia considering that many organization nowadays rely on ERP system in order to improve its performance and increase its productivity. Thus, the organizations that apply this system or derived from this approach will be able to improve their business performance in order to achieve their business goals and objectives. This study also for a future research that might want to study further about this system and want to explore more about it.

## **1.8 Summary**

As a conclusion, this section the researcher explaining what the researchers are all about and what this study involves. It is including the background of the project, problem statement, research questions, objectives and scope of the research. The research objectives, scopes, will be discussed more in the next chapter.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

In this study, the researcher discussing the literature as a core source of the research. Compared to the previous chapter, it describing a background of the study, problems statement, research objects, and the research that study attempts to report. For this chapter, it consists a lot of philosophies that support the research in order to support the arguments and contains significant statements such as from the journals, articles and internet sources as nowadays we are on era all information on the fingertips. To have a better understanding of this research, the researcher delivered several literature reviews by previous researcher and this information will become extra sources for this research to success.

#### 2.2 Enterprise Resource Planning (ERP) Systems

Nowadays, all organizations are constantly seeking for a way or a technology that can help them to have a better business performance and gain a competitive advantage through that business solution. To have an impressive business performance, organizations need an efficient and effective planning and control system that capable to coordinate all the operation within the organization (Chien and Tsaur, 2007). According to Ifinedo (2006) saying that ERP System is one of the

most favorable systems of computing that be used by an organization either for a large company or small organization and either private or government sectors (Gable, 2008).

By implementing ERP System in organizations, it capable in integrating various types of business activities which are from human resources, marketing, production, material control, finance, procurement, research, and development into one single system of a database in which it can be share and integrate by those department (Ifinedo, 2008). Many organizations choose this information system as it provides many benefits to the company such as reducing cost and quick information transactions in term of production and operations (Hallikainenetal, 2004).

### **2.3 Evolution of ERP System**

In the era 90-an, Enterprise Resource Planning had been introduced to the organization. At that time the focus point of manufacturing industries was on the Inventory control such as inventory stock, inventory status, stock in-out, and monitoring inventory usages. So, at time ERP System was one of the software that had been designed to handle the inventory and they focus on the activities of Bills of Material Processor (BOMP). After one decade, most of the organization changed their focus to MRP which is Material Requirement Planning System. For your information, production activities such as subassemblies and raw material planning MRP System was established to make use for preparation production processes and by using this system the master schedule of the end products is translated into the time-phased net requirements for the production activities in the line of production. After that, MRP system was upgraded into MRP II in which is capable of making use of software application to organize manufacturing process and distribution activity in a systematic manner. As nowadays world becoming more competitive so as well as internet technologies in which it starts to improved ERP system in the view of its functionality so that they can increase and expanded the business by adding modules and functionality in the ERP System.

## 2.4 Definition of Term

In this study, the researcher had listed several terms that are related to the effectiveness of ERP System in manufacturing industries to increase productivity such as information quality, system quality, service quality, user satisfaction, usage intentions, net benefits, top management support, user support, communication effectiveness, consultant support and conflict resolution.

## 2.5 Development of IS Model

For these sections, the researcher had chosen several numbers of the model to explain what makes ERP system successful. Davis (1989) Technology Acceptance Model (TAM) used the Theory of Reasoned Action and Theory of Planned Behaviour in order to dissolve why IS are more readily acknowledged by users compared to others model (Petter et al., 2008). According to Delone and McLean (1992), they recognized six components in which lead to success which is system quality, information quality, use, user satisfaction, individual impact, and organizational impact (Petter et al., 2008). After had been referenced and revised almost 300 articles of the original model, modifications had been making which is service quality, system quality, information quality, intention to use, user satisfaction and net benefits toward the success factor of ERP system.

Quality was measured to be a 3-dimensional construct that is information, system, service and each of them has been measured independently as it affects the intention of use, use and user satisfaction (Bernroider, 2008). Even though there are several researchers that try to critique or modify the IS Model Success but still some of them have developed and proposed framework for measuring IS effectiveness (Chien & Tsaur, 2007). Quality was measured to be a 3-dimensional construct that is information, system, service and each of them has been measured independently as it affects the intention of use, use and user satisfaction (Bernroider, 2008).