

LEAN IMPLEMENTATION IN MALAYSIA'S ORGANIZATIONS: A NARRATIVE
STUDY

BALQIS BINTI MOHAMAD

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DECLARATION

“I hereby declare that the content in this project is the result of my own work expect references and citations which I have clearly stated the source of origin”

Signature :

Name : BALQIS BINTI MOHAMAD

Matric No. : B061410122

Date :

DEDICATION

This research is dedicated to my parents, Mr. Mohamad bin Atan and Madam Noraini binti Abdul Karim, who have been my constants source of inspiration and given their support with my studies. Thank you for giving me a chance to prove and improve myself even though I have a lot of weaknesses. To all my family thanks you because give me your motivation and spending your time to hear my problem.

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ABSTACT

The issue about environmental concern become more and more significant. After the Industrial revolution, the world become more polluted every passing day. Although awareness and demand to protect the environment was not a radical movement in the past, it has becomes a crucial activity nowadays. Many organizations have implement Lean strategy in their organizations in order to overcome this problems or issues. The framework of success factors of Lean Implementation in organizations is being used in this research. Then, interview questions was developed to collect data from two companies in Malaysia which implement Lean Strategy in their organizations. This study used qualitative methods to describe variables, examine relationship among variable and interpret the variables and data collection. The sample for this study is non-probability sample. The respondent is being selected randomly who fulfill the requirements of this study. The respondent must at least have experiences and knowledge about implementing Lean strategy in organizations. The purpose of this study consist of three objectives which are to identify the current status of lean implementation in the firm, to investigate the challenges of lean implementation in organization, and to determine the factors that influences the successful of lean implementation in the firm.

ABSTRAK

Isu mengenai kebimbangan alam sekitar menjadi semakin penting. Selepas revolusi Perindustrian, dunia menjadi semakin tercemar setiap hari berlalu. Walaupun kesedaran dan permintaan untuk melindungi alam sekitar bukanlah satu gerakan radikal pada masa lalu, ia telah menjadi satu aktiviti penting pada masa kini. Banyak organisasi telah melaksanakan strategi Lean dalam organisasi mereka untuk mengatasi masalah atau masalah ini. Rangka kerja faktor kejayaan Pelaksanaan Lean dalam organisasi sedang digunakan dalam kajian ini. Kemudian, soalan wawancara telah dibangunkan untuk mengumpulkan data dari dua syarikat di Malaysia yang melaksanakan Strategi Lean dalam organisasi mereka. Kajian ini menggunakan kaedah kualitatif untuk menggambarkan pemboleh ubah, mengkaji hubungan antara pemboleh ubah dan mentafsirkan pemboleh ubah dan pengumpulan data. Sampel kajian ini adalah sampel bukan kebarangkalian. Responden dipilih secara rawak yang memenuhi keperluan kajian ini. Responden sekurang-kurangnya mempunyai pengalaman dan pengetahuan mengenai pelaksanaan strategi Lean dalam organisasi. Tujuan kajian ini terdiri daripada tiga objektif iaitu mengenalpasti status semasa pelaksanaan projek Lean di firma, untuk menyiasat cabaran pelaksanaan yang lemah dalam organisasi, dan untuk menentukan faktor-faktor yang mempengaruhi kejayaan projek Lean pelaksanaan di dalam firma.

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ABBREVIATION

No.	Abbreviation	Meaning
1	LSS	Lean Six Sigma
2	PE	Production Engineering
3	DMAIC	Define, Measure, Analysis, Improvement & Control
4	MORT	Management Oversight Risk Tree
5	RCA	Root Cause Analysis
6	OJT	Japan for On Job Training
7	OE	Operational Excellent
8	HR	Human Resources
9	CSF	Critical Success Factor
10	KPI	Key Performance Indicator
11	GDP	Growth Domestic Product

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CHAPTER 1

INTRODUCTION

1.0 Introduction

This chapter describes about background of study and then follows by problem statement, research objective, research question, research scope, limitation and significant of study.

1.1 Background of Study

Today, issue about environmental concern become more significant. After the Industrial revolution, the world become more polluted every passing day. According to Dermici (2014), human beings not only contribute to pollute the present-day resources, but also effect the future generations' access to crucial resources. Although awareness and demand to protect the environment was not a radical movement in the past, it has becomes a crucial activity nowadays.

Not only that, the growth of Malaysian industry in manufacturing sector becomes the second largest contributor to the GDP and remain as the main sector of economic growth (Ismail, Razak, & Lazim, 2015). The competitive market drive the manufacturing firm to keep in pace with technological changes and new process in order to yield high productivity with maximum quality of product produced. Equally important is for a company to be able to manufacture a varied range of product to meet the high demand. However, producing a product with optimum quality at a competitive price is becoming the most challenging issue among the manufacturer. The firm has to incur a high manufacturing cost such as direct materials, direct labor and factory overhead to keep up-to-date with the growing technology (Edwards, 2009).

Other than that, economy downturn nowadays has forces firms to look for better ways to increase the overall effectiveness, including cut the costs and also reducing lead time in work-in-process to achieve customer satisfaction. The New Straits Times (2017) reported that according to BMI Research, Malaysia's Ringgit becoming the one of Asia's worst-performing currencies over the past year, has further to fall. Depsite of the further weakness in the global bond market, it has put Ringgit under pressure. As a result, the Ringgit is likely to drop back some losses over the long term, supported by increasing prices of commodities such as oil as well as improving terms of trade.

As Ringgit value keeps dropping in tough economic factor, the firm start to focus on how to enhance the manufacturing capabilities and efficiency in order to gain higher competitive advantages. It is very significant for a company to look at every area that can save money as time is considered as money thereby wasted time in considered waste money. The implementation of Lean Strategy is believed to have capabilities in improving the standard of method and materials, interchangeability of parts, specialization of labor and dedicated machinery (Carroll, 2008).

In addition, Lean strategy is a business model that focuses on systematic identification and elimination of waste from process and involves improving and changing processes at the same time delivering quality product to the manufacturer and customer at lowest cost (Shams, Tritos, & Amrik, 2010). There are many firms that have implemented lean in their operation as well as the organization and familiar with the lean principles, tools and practices. Decision of firm to go for lean actually requires everyone's participant in adjustment of thinking, attitudes and behaviour and it is not all about implementing a set of tools and practices itself. Carroll (2008) in his book *Lean Performance ERP Project Management* stated that lean performance is a management strategy that recognizes and leverages the fundamental strength of business people and process.

1.2 Problem Statement

Globalization and advance technological changes make firm aims to achieve industry 4.0 in which all the operation starts to develop autonomous machine in order to maximize the production rate and quality at a lowest possible cost yet still the firm could not avoid from producing non added value lead to added costs. Even the principle of eliminating all forms of wasted value has been tested in large organization resulted the

increasing of 40% productivity, 20% reduction of defect material and able to reduce 50% of lead time (Panizzolo, Garengo, Sharma, & Gore, 2012) yet despite of these efforts, the majority of companies that test lean techniques have not achieved the gains they expected whether it's in quality, cost, or productivity (Harbour, 2012). Thereby, the lean transformation within industries is still at the bottom of success (Yamamoto and Bellgran, 2010; Bhasin, 2012; Chay, Xu, Tiwari, & Chay, 2015).

It comes to several firms that have a doubt minded to implement lean strategies as thinking they are unable to manage the risk if fail in implementation. Even though lean is used to improve productivity, yet the situation is not that simple, hence it is not an easy journey with a guaranteed successful end. The firm has come into perspective if lean capable to improve overall effectiveness, then why not all companies implement lean production in the operation and why do some fail during implementation. Clearly, no proof of research has been able to compromise that firm can reach excellent performance of lean. Therefore, many businesses have found themselves in a disappointing cycle of start-stop-start-again, bring in a lean initiative only to see it flunk, and then struggling repetitively to make it work. The worst is the price the company should repay in time and money spent in lean transformation. The secret lies not in which lean principles and practices an organization adopts but in how it executes them (Harbour, 2012).

In conclusion, the purpose of this research is examining the factors influencing the firm to implement lean and how this factor influence lean implementation towards performance improvement.

1.3 Research Questions

This research explores the keys finding derived from the research problem in order to focus on the research objectives. The research aim is directly addressing the issue of difficulty in lean implementation as there are several firms which unable to achieve superior performance in lean strategy. The purpose of the finding is to identify the critical success factors in lean implementation within the manufacturing industry so that the difficulties and challenges issue in lean hopefully could bring the definite solution in performance improvement.

Therefore, the research comes out with several key questions to address the issue as following:

1. What is the status of lean implementation in the firm?
2. What are the challenges of lean implementation in organization?
3. What are the factors influences the successful of lean implementation in the firm?

1.4 Research Objectives

Research objectives provide a clear path and focus for researcher. By having research objectives, it will allow the researcher conduct the study on the right path and avoid unrelated information. The purpose of this study consist of three objectives which are:

1. To identify the current status of lean implementation in the firm.
2. To investigate the challenges of lean implementation in organization.

3. To determine the factors that influences the successful of lean implementation in the firm.

1.5 Research Scope

The scope of this research is covered on many measures factors that influence the adoption of lean in production and accessing the current level of lean achievement thus lead to the finding of the success factors of lean implementation. This research will be conducted under two company in Malaysia which are oil and Gas Company and manufacturing company. The respondents will be targeted among middle management employees that involve in the implementation of Lean strategy in the company.

1.6 Research Limitation

The limitation of this study is in Lean manufacturing implementation and performance improvement in implementing lean strategy. Then the researcher also face constraints in term of data obtained from the respondents. This is because the employee of the company have very limited time to spend on the interview session. In addition, the cooperation of respondents will benefit in the research study.

1.7 Significant of study

The significant of study would be the solution to the problem statement in which the finding of the study will benefit to researcher and firm organization in terms of providing the practical and knowledge view. As the researcher explores the challenges and critical successful factors in lean manufacturing implementation towards performance improvement, and will go through the previous research covered in international studies, it will give benefit to the researcher to understand the relationship between challenges and success factors of lean implementation towards performance improvement and try to relate by giving suggestion to improve industry in Malaysia regarding the success of lean implementation so that the industry able to learn about the appropriate lean strategy to improve performance in term of generating high productivity without affecting the quality and cost at the same time can provide innovative solution for better decision making within the organization.

1.8 Summary

The first chapter mentioned about the basic understanding of the way to conduct this research paper. This chapter serves as a body of research. Chapter 1 also briefly provides guidelines for further explanation while chapter 2 provided discussion in this stud

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter reviews the existing literature on the definitions of terms and conceptual of lean manufacturing, overview of Lean manufacturing as waste reduction, lean manufacturing implementation towards performance improvement, critical successful factors in lean manufacturing implementation towards performance improvement and review of relevant theoretical model.

2.1. Definitions of terms and conceptual

In this area discuss about the particular kinds of words used to describe the several term and principles and tools use that related with the study. The purpose is to address a specific, focused and relevant research question.

2.1.1 Lean Manufacturing

According to Schonberger (2007), Lean manufacturing is a management philosophy focusing on reduction of seven wastes which are defect, transportation, motion, inventory, processing, over-production, and waiting. Lean is an approach to operations management considering there is no resource to be waste and eliminate anything that does not add value to the customer. Not only that, Lean drives the firm to apply lean transformation tools and methods and it became key driving force for managers and workers in improvement. The lean tools and methods designed for specific types of problems to identify and eliminate sources of waste through redesign systems (Kadarova & Demecko, 2015).

Then other author, Keller (2011) clarify lean as a set of principles and methodologies which is known by Japanese name of Muda focused on enhancing cycle time and quality through elimination of waste by narrowing the focus to three areas which are velocity, visibility and value. Lean as visibility waste elimination considering it able to reflect the visual control to wider our consciousness of problems. It entails that problem identification is quickly acknowledge to all higher management in organization so that

immediate action may be taken to help relieve the bottleneck issues resulted from problem identification. Then, velocity measure the flow that refer to the speed of process delivery. It provides flexibility and improved responsiveness to customer demands. Minimizing waste by reducing process lead time lead able to enhance the quick respond and reduce waiting time when there are new orders or changes preferred by customer. Elimination of waste can create value. It can be defined as something for which the customer is willing to pay. If the process step does not produce value, it is source of waste and should be eliminated.

The first to coin lean manufacturing in previous 1991 is James P. Womack, Daniel T. Jones and Daniel Roos in their book of *The Machine That Changed the World* (Dekier, 2012). They discover Toyota Production System (TPS) as a first system working in line with the guidelines of lean manufacturing and it is recognized as successor of TPS.

Lean manufacturing is widely utilized in many sectors. If previously lean implementation is recognized in automotive industry yet currently the lean is being widely applied across a multitude of industries, ranging from hospitals and pharmaceuticals to aerospace and electronics that are being tested in service sector worldwide (Harbour, 2012). Other than that, Kadarova & Demecko (2015) claim that lean implementation in automation industry has been achieved the better progress in term of production operation and cost reduction followed by slowly penetrate in service lean implementation and in advance lean is being used to manage healthcare, IT services as well as public administration.

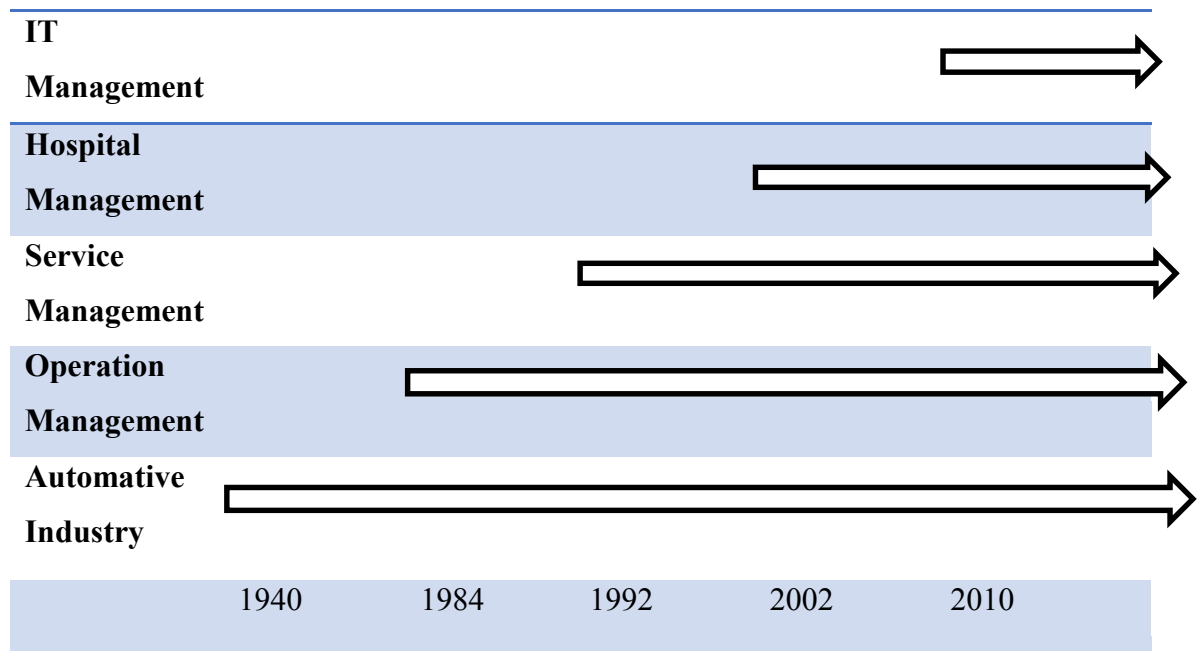


Figure 1: Timeline of Lean Management usage in various industries

(Sources: Stohr 2013; cited by Kadarova & Demecko, 2016)

Not only that, other author also stated that lean tools and techniques have been adopted across diverse industrial sectors, be it aerospace, automobile, machine tools, consumer goods and services, etc. Academicians and researchers have promulgated various theories, models, tools, techniques and performance evaluation parameters for Lean implementation. Several benefits have been associated with Lean manufacturing implementation. Sanchez & Perez (2001) indicate that the primary goal to introduce any Lean production program in a shop, factory or company is to increase productivity, reduce lead time, cost and improve quality.