

EMPLOYEE'S ATTITUDE AND MANAGERIAL SUPPORT ON LEAN
BENEFITS

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DEDICATION

*Specially for my beloved parents, Vatumalai and Annaletchumy,
My lovely supervisor, Dr. Norhani Bakri,
Mr. Shahasif from Malaysian Automotive Institute (MAI) and Malaysian
Productivity Corporation (MPC)
&
Malaysian Automotive Components Manufacturing Companies that Participated
in this Study.*

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ABSTRACT

This research aims to determine the factors that influence lean manufacturing performance in Malaysian automotive industry. The objectives of this study are to identify the employee's perception towards the level of lean manufacturing performance, to identify the relationship between senior manager's support and lean manufacturing performance, to analyze the relationship between employee's attitude and lean manufacturing performance and to determine the most influential senior manager's support and employee's attitude factor that affect lean manufacturing performance in Malaysian automotive industry based on the shop floor employee's perception. Questionnaires were used as an instrument to collect data from 110 shop floor employees which consist of technicians and supervisors from 13 Malaysian automotive component manufacturing companies. The data was analyzed by using Statistical Package for Social Sciences (SPSS) version 16.0 in the form of frequency, percentage, mean and multiple regression models. The findings show that the shop floor employees perceived positively the lean manufacturing performance in Malaysian automotive industry. Based on the shop floor employee's perception, there is a significant relationship between senior manager's support and employee's attitude towards the lean manufacturing performance in Malaysian automotive industry. Moreover, the most influential senior manager's support factor which affects lean manufacturing performance in Malaysian automotive industry is having a clear vision. In addition, the most influential employee's attitude factor which affects lean manufacturing performance in Malaysian automotive industry is openness towards change. Based on the overall result, shop floor employees believe that senior manager's support is the most influential factor that affects lean manufacturing performance in Malaysian automotive industry.

ABSTRAK

Kajian ini bertujuan untuk mengenalpasti faktor-faktor yang mempengaruhi prestasi perkilangan lean dalam industri automotif Malaysia. Objektif kajian ini adalah untuk mengenalpasti persepsi pekerja terhadap prestasi perkilangan lean, untuk mengenalpasti hubungan antara sokongan pengurus atasan dan prestasi perkilangan lean, untuk mengkaji hubungan antara sikap pekerja dan prestasi perkilangan lean dan untuk mengenalpasti faktor sokongan pengurus atasan dan sikap pekerja yang paling mempengaruhi prestasi perkilangan lean dalam industri automotif Malaysia berdasarkan persepsi pekerja di jabatan pengeluaran. Borang soal selidik telah digunakan sebagai instrumen untuk mengumpul data daripada 110 pekerja pengeluaran yang terdiri daripada juruteknik dan penyelia 13 syarikat pembuatan komponen automotif Malaysia. Data-data telah dianalisis menggunakan perisian Pakej Statistik untuk Sains Sosial (SPSS) versi 16.0 dalam bentuk kekerapan, peratusan, min dan model regresi berganda. Dapatan kajian menunjukkan bahawa pekerja pengeluaran mempunyai persepsi yang positif terhadap prestasi perkilangan lean dalam industri automotif Malaysia. Berdasarkan pada persepsi pekerja pengeluaran, terdapat hubungan yang signifikan antara sokongan pengurus atasan dan sikap pekerja terhadap prestasi perkilangan lean dalam industri automotif Malaysia. Selain itu, faktor sokongan pengurus atasan yang paling mempengaruhi yang memberi kesan ke atas prestasi perkilangan lean dalam industri automotif Malaysia adalah mempunyai visi yang jelas. Disamping itu, faktor sikap pekerja yang paling mempengaruhi yang memberi kesan ke atas prestasi perkilangan lean dalam industri automotif Malaysia adalah sifat keterbukaan terhadap perubahan. Berdasarkan dapatan keseluruhan, pekerja pengeluaran berpendapat bahawa sokongan daripada pengurus atasan merupakan faktor utama yang mempengaruhi prestasi perkilangan lean dalam industri automotif Malaysia.

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LIST OF SYMBOLS

CQI	--	Continuous Quality Improvement
TPS	--	Toyota Production System
SMED	--	Single Minute Die Exchange
U.S	--	United State
CAOC	--	Cynicism About the Organizational change
IV	--	Independent Variable
DV	--	Dependent Variable
%	--	Percent
<i>F</i>	--	Frequency
R&D	--	Research and Development
SD	--	Strongly Disagree
D	--	Disagree
LA	--	Less agreeable
A	--	Agree
SA	--	Strongly Agree
S/D	--	Standard Deviation
R Square	--	Relationship between Variables
SPSS	--	Statistical Package for Social Science
Y	--	Lean Manufacturing Performance
β	--	Slope of the Line
χ	--	Variables
α	--	Intercept of the Line on Y-axis
MAI	--	Malaysian Automotive Institute

LIST OF APPENDICES

- Appendix A** -- Set of Questionnaire
Appendix B -- Reliability Test Result

CHAPTER I

INTRODUCTION

1.0 Introduction

The growing challenges in today's global competition have pressure many manufacturing companies to adopt new manufacturing management strategies to enhance the firm's efficiency. According to Wong *et al.* (2009), global market requires the best management practices in order to compete in the competitive environment with the penetration of Chinese and Indian goods into Malaysian market. One of the strategies is by eliminating manufacturing waste. Organizations notice that somehow they need to be 'lean' in order to survive and also to be competitive. The way the organizations look at profit has changed due to the high competition in the market. They understood that there is no other alternative other than to minimize waste to make profit and survive in the global market (Wong and Wong, 2011).

Many transitions have occurred in the last five decades to improve processes in order to be more efficient by eliminating waste. Throughout this period, continuous quality improvement (CQI) tools such as Six Sigma, Total Quality Management, and lean have been formed to deal with quality improvement

initiatives. Lean manufacturing has gained a great attention in various sectors especially automotive sector. Among the continuous quality improvement tools, lean classified as “world class” practice (Wormack and Jones, 2003). Lean practice is a tool that focuses on the elimination of waste from processes. Waste in a manufacturing company can be divided into seven such as overproduction, waiting time, defects, non value added processing activities, motion, high inventory, and transportation (Melton, 2005).

Henry Ford created the concept of “lean thinking” for Ford automobile production in 1913 by introducing his moving assembly line for the Model T car with lower cost and higher productivity which reduced the lead time from 12.5 hours to 93 minutes. In 1984, Taiichi Ohno designed Toyota Production System (TPS) for Toyota Motor Company (Ohno, 1988) using Henry Ford’s original idea. The world started to realize that lean manufacturing is a highly efficient production system when the book “The Machine that Changed the World” was published by (Womack and Jones (2004). According to Rose *et al.* (2013), lean manufacturing is an extended version of the Toyota Production System (TPS).

Lean manufacturing has penetrated to most manufacturing industries around the globe because it has been regarded as a remedy to survive and to be competitive in global market especially for the manufacturing industry (Papadopoulou and Ozbayrak, 2005). Lean is a proven quality improvement tool across the world and organizations are practicing lean to deal with business issues such as high operating cost, declining in market share, and limited capacity and they are obtaining immediate and positive impact in business after the implementation of lean. According to Bhasin and Burcher (2006), lean principles are universal and core of business management which must be the central core for other continuous quality improvement concepts. Dankbaar (1997) stated that the alternatives for lean manufacturing have not been accepted worldwide and admit that it will be the standard manufacturing tool of the 21st century.

Lean can be applied not only in manufacturing plants but also in all other organizational levels (Womack and Jones, 1990). Originally, the main focus of lean manufacturing always related with cost reduction, elimination of waste, just in time. Baines et al. (2006) argues that today lean the concern more on creating and enhancing organizational values in broader context where it being used in terms of knowledge based activities. Besides that, Chappell (2002) also mentioned that lean thinking is applicable to all aspects of a business and will positively resulted not only in production but the whole range of business such as design, sales, and product development. Therefore, every member in organization at all level needs to accept the concept of lean thinking and engaged in it to add values to the organization.

It has become a widely adoptable manufacturing practice across countries and industries. Based on Motwani (2003), the goal of lean manufacturing is to increase profit and competitiveness through increasing efficiency, decreasing cost by eliminating waste, and reducing time. Instead of pushing producing what firms can sell, lean allows firms to produce goods based on pulling or customer demand. However, many organizations are not able to transform to lean manufacturing because the transition is filled with formidable challenges such as in understanding the real concept of lean and to deal with the cultural differences problem either national or organizational.

1.1 Background of the Study

Lean manufacturing developed from a successful Toyota Production System and then became a popular tool to conduct productive activities not only in Eastern countries but also Western countries (Womack, Jones and Roos, 1992). Nicholas *et al.* (2010) who conducted research on the management practice scores in manufacturing industry across counties said that in terms of the effective management practice, countries such as America, Japanese, and German are the best

managed compare to the developing countries such as Brazil, China, and India where their management practice tend to be poorly managed (Figure 1.1). Meanwhile, America's manufacturing companies has gained higher score than other countries. According to Sousa and Voss (2008), there are several factors that influence the best practice in management such as firm size, national context and culture, strategic context, and other organizational context. Malaysia is a capable and competitive location for manufacturing where many companies have invested billions of dollars in Malaysia which backed by profitable agreements with the Malaysian government. These are the forces behind Malaysian manufacturing industries which dedicating to moving Malaysia with R&D and technological advancement.

The realization of ASEAN Free Trade Area (AFTA) has impact on the Malaysian automotive industry in terms of the sales (Figure 1.1). Malaysian Rating Corporation Bhd. (2006) has categorized automotive industry on slightly negative outlook due to the lower sales. Based on the analysis for the world vehicle market for the year 2000 and projected 2010 by The Malaysian Automotive Association report (2006). Asia is the 5th largest market in the world and Malaysia is far behind when compared to other Asian countries such as Thailand, China, India, Vietnam, etc. They beckons plants in Malaysia to implement continuous quality improvement programs in operations (Malaysia,n.d.). This is because they have found the solution on how to improve their manufacturing production. Lean manufacturing is a beneficial method that can potentially increase organizational competitiveness and profit with more efficient and effective manufacturing processes.

Malaysian automotive industry classified by a domestically developed manufacturing structure geared towards the production of passenger vehicles which encompasses the production of trucks, lorries, pick-ups, buses, and other vehicles for commercial use (Hibadullah *et al.*, 2014). In Malaysia, automotive sector is heavily subsidised and protected to produce national champions and automotive components and parts suppliers. Malaysian automotive industry has highly contributed to the economy in terms of employment, export, and revenue from taxes (Uzir Mahidin and Kanageswary, 2004). Fuzi *et al.* (2012) stated that in ASEAN region, Malaysia offers

wide opportunity for global automotive and component manufacturers to establish a manufacturing and distribution operations in the country. This has enable international investors to invest in Malaysia to improve in terms of government policies, political and economic dependability, economic essentials, well developed infrastructural facilities and also for skilful workforce. Based on Desa *et al.* (2013), the drastic development of the county economy and the highest purchasing power of the population have made Malaysia the largest passenger car market in ASEAN. The rise of national car projects such as PROTON and PERODUA has transformed Malaysia from car assembler into car manufacturer. This enhance the engineering, auxiliary and supporting industries and contributed to skilled development and upgrading of technological and engineering capabilities which made Malaysia as a base for global automotive manufacturer.

Lean manufacturing is the most accepted philosophy in Malaysian automotive industry as MAJAICO program which is a Malaysian government vendor development program that has been massively promoting lean practice in Malaysia Automotive Institute (Rasli *et al.*, 2011). In addition, Hibadullah *et al.*, 2014 argues that lean manufacturing is the best approach to improve the performance and maintenance activities. The concept of lean of was originally designed for quality improvement in automotive industry but limited research has been done in Malaysian automotive industry and also in other manufacturing industries in Malaysia (Wong *et al.*, 2009).

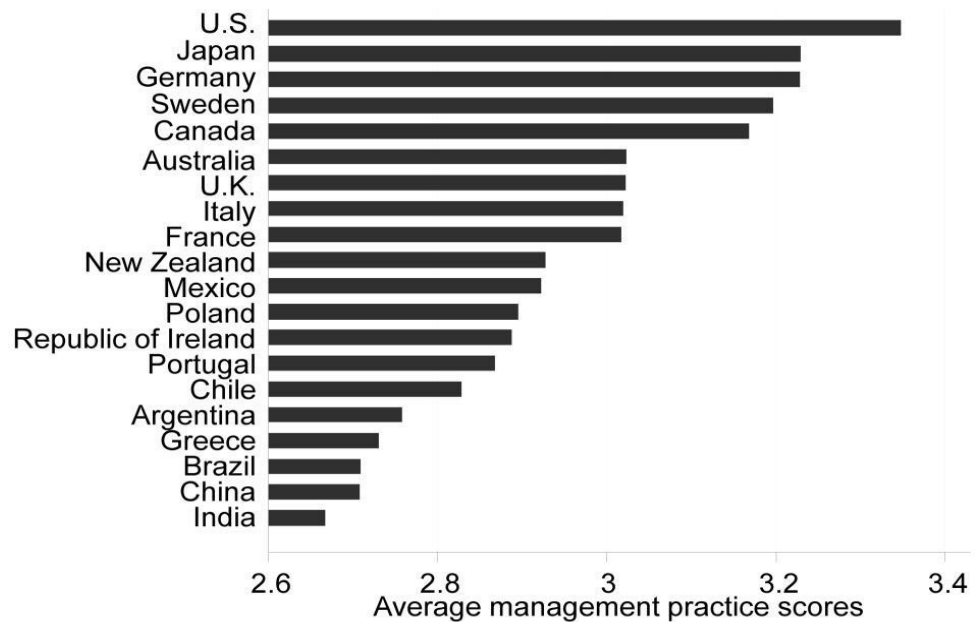


Figure 1.1 Management Practice Scores in Manufacturing (Nicholas *et al.*, 2010)

1.2 Problem Statement

Most of the developing countries attempt to force automotive industry to recover and recycle their goods due to the level of the production has become unprofitable in the face of increasingly segmented niche market (Farah Izzaida *et al.*, (2013). Automotive companies across the world are implementing lean manufacturing tool as their manufacturing management strategies to improve their quality and also to minimize the waste. According to Krizner (2001), 55% to 95% of manufacturing process can contribute to waste which need to be eliminate.

Herron and Braiden (2007) applying the full set of lean manufacturing tools will lead to a successful transformation of an organization towards lean manufacturing. Meanwhile, Johnson *et al.* (2007) found that some organizations are only applying certain components of lean practices. Norani *et al.* (2010) stated that

the ultimate goal of lean manufacturing is to create a smooth and quality organization that produces the end product focusing the customer's demand. However, most of the Malaysian automotive companies fail to transform into a lean based organization. The Malaysian automotive companies only focus on the internal areas of lean manufacturing that are operation and management and the external areas are lacking such as supplier and customer relationship.

Although, Malaysian automotive industry has implemented lean manufacturing since 2001, problems still arise in the implementation. Norani *et al.* (2010) who studied on the implementation of lean manufacturing in Malaysian automotive industry has indicated that most of the companies are still in-transition towards lean manufacturing and among the major barriers in implementing lean are lack of understanding on lean concept, inappropriate attitude by managers and employees. Lean manufacturing is vital to enhance the quality of the product with no waste and has potential to reduce the overall automotive cost in Malaysia.

Anand and Kodali (2009) stated that many lean manufacturing initiatives have failed due to the lack of its understanding by managers and employees. Convis (2001) has stressed that senior managers must involve themselves in day to day improvement in operation. Tempel *et al.* (2001) concluded that senior manager's presence and availability on the shop floor is one of the critical points during the lean implementation. According to Motwani (2003), senior managers must play their role as a leader to communicate and convince the employees.

This study has been developed based on the work by Norani *et al.* (2010). Norani *et al.* (2010) studied the lean manufacturing implementation in Malaysian automotive industry in 60 Malaysian automotive components manufacturing firms. The findings from the study indicating that only 17 Malaysian automotive companies successfully implemented lean manufacturing and a majority of 60 companies are still in-transition towards lean manufacturing. They also identified that understanding on lean concept and attitude by senior managers and employees are the main barriers

in the implementation of lean manufacturing in Malaysian automotive industry. On the other hand, study by Rose *et al.* (2013) shows that there is a difference between the senior manager's perception in Malaysian automotive industry on the importance of lean manufacturing and the actual implementation of lean manufacturing. The senior managers perceived that lean manufacturing is vital but the level of implementation of lean manufacturing in Malaysian automotive industry is low.

Research needed to analyse the lean manufacturing performance in Malaysian automotive industry based on the employee's perception on the lean manufacturing performance in Malaysian automotive industry. Besides, research also needed in order to examine the manager's and employee's factor to enhance the performance of lean manufacturing in Malaysian automotive industry. The understanding and performance on lean manufacturing can be enhanced through identifying the crucial role of senior managers and employees in Malaysian automotive industry. It will make the lean practitioner clearly understand the requirements for implementing lean manufacturing effectively.

There is no study conducted on the relationship between senior manager's support and employee's attitude towards lean manufacturing performance in automotive industry. Therefore, this study aims to identify the senior manager's support and employee's attitude towards lean manufacturing performance in the context of the shop floor employee's perception in order to solve the current issues in lean manufacturing implementation in Malaysian automotive industry. It will help the automotive manufacturers to reduce unnecessary wastage and cost with the commitment from its stakeholders, especially from the top or senior managers and shop floor employees in order to compete in the global market. Moreover, decision making and value stream on the implementation of lean must be delivered down from the top level to the bottom of organization. Rose *et al.* (2013) stated that lean manufacturing is a world class practice and therefore senior managers need to adapt lean manufacturing into their organization.

1.3 Research Questions

1. What is the perception of the employees towards the lean manufacturing performance in Malaysian automotive industry?
2. Is there any significant relationship between senior manager's support and lean manufacturing performance in Malaysian automotive industry based on the employee's perception?
3. Is there any significant relationship between employee's attitude and lean manufacturing performance in Malaysian automotive industry based on the employee's perception?
4. What is the most influential senior manager's support and employee's attitude factor that affects lean manufacturing performance in Malaysian automotive industry based on the employee's perception?

1.4 Purpose of the Study

The purpose of this study is to identify the shop floor employee's perception on the lean manufacturing performance in Malaysian automotive industry by examining the relationship between senior manager's support and employee's attitude towards lean manufacturing performance. In addition this study will determine the most influential factors that influence lean manufacturing performance in Malaysian automotive industry based on the employee's perception. Thus, the findings would be a guideline for every lean practitioner in Malaysian automotive industry on how to overcome the issues facing by the employee's in Malaysian automotive industry on lean manufacturing in order to enhance the organizational ability to improve their quality and also to reduce the overall cost.

1.5 Objectives of the Study

The objectives of this study are:-

1. To identify the employee's perception towards the lean manufacturing performance in Malaysian automotive industry.
2. To identify the relationship between senior manager's support and lean manufacturing performance in Malaysian automotive industry based on the employee's perception.
3. To analyze the relationship between employee's attitude and lean manufacturing performance in Malaysian automotive industry based on the employee's perception.
4. To determine the most influential senior manager's support and employee's attitude factor that affect the lean manufacturing performance in Malaysian automotive industry based on the employee's perception.

1.6 Significance of the Study

There are several reasons on why this research is important in today's automotive market. The relationship between the senior manager's support and employee's attitude towards lean manufacturing performance are important factors that should be examined in Malaysian automotive industry. First of all, it will be a great experience for the researcher to get an in depth information on the implementation of lean manufacturing in automotive industry by conducting this study. Besides, it will be an opportunity for every individual in automotive industry

on the importance of lean manufacturing and its benefit towards their firm's shop floor performance.

The outcome from this research will increase the number of research on lean manufacturing in this field since limited research has been done in Malaysian automotive industry. It will be an input for future researchers to conduct research in this field with more relevant and accurate frameworks. It will convince the Malaysian automotive industry to study and implement lean manufacturing efficiently and effectively in their organizational production.

Manufacturing industries such as automotive industry is an important element in any country since it's a pride of a country on how efficient and quality is their automotives and also largest revenue contributing industry. Moreover, developing countries such as Malaysia need more guideline on how to enhance the capability of automotives effectively in a lower cost. Thus, this study will examine thoroughly on how senior manager's support and employee's attitude affect the lean performance in Malaysian automotive industry based on employee's perception. This could be a guideline for the whole automotive industry in Malaysia since the main barriers in Malaysian automotive industry is lack of understanding on lean concept.

Firms will understand more clearly on lean manufacturing performance and how to support the lean initiative. Hence, the transition of lean implementation from current state to future state will occur smoothly. Finally, by implementing all the above suggestions, this will enhance the quality and cost effective in automotive industry. Hence, this will ensure that the Malaysian automotive industry competes in the global automotive market by producing quality goods with no waste which will directly reduce the manufacturing cost and enhance the Malaysian automotive performance worldwide.

1.7 Scope of the Study

The researcher's scope is to investigate on the lean manufacturing performance in Malaysian automotive industry based on the employee's perception using senior manager's support, employee's attitude, and lean manufacturing performance as its variables. There are five constructs in order to measure the lean manufacturing performance such as increase in production, reduce lead time, customer's satisfaction, new product development, and flexible production. Meanwhile, there are six constructs in senior's support that are having a clear vision, pay attention, allocate resource, establish structure, reward system, and provide feedback to the employees. Besides, the constructs under employee's attitude are employee's readiness to change, commitment to change, openness to change, and cynicism on change. As mentioned, all the constructs in those variables will be examined thoroughly.

A total of 13 automotive component manufacturing companies around Malaysia have been selected in this study. The rational on why the researcher specifically targeted on those companies is because the companies are currently using lean manufacturing in their shop floor. This is important for the researcher in order to gather accurate data on the measurement of the senior manager's support and employee's attitude that determine the lean manufacturing performance from the Malaysian automotive companies that dealing with lean manufacturing in their daily production. This study focuses on 10 respondents from each company consist of shop floor employees (technicians and supervisors) who are directly involve in production process.

1.8 Conceptual Definition

1.8.1 Lean Manufacturing Performance

Lean manufacturing is an initiative that aim to reduce the waste in inventory, human effort, time to market, and manufacturing process to become more responsive to customer's demand while producing world class quality goods in the most efficient and economical manner (Todd, 2000). Meanwhile, according to Farah Izzaida *et al.* (2013), lean manufacturing is a unified, comprehensive set of philosophies, rules, guideline, tools, and techniques for improving and optimizing processes. While in automotive industry, it was created in large volume, repetitive manufacturing by defining value from the customer's perspective, mapping the value streams, and eliminating waste to create continuous flow. Lean manufacturing is also applicable for service based industry.

1.8.2 Senior manager's Support

Senior management title is given by the large company in its management structure. Generally in organizational structure, senior managers fall in between manager and general manager. The responsibilities of senior managers are plan and direct the work to employees, monitor employees work, and take corrective action if needed. Based on Wilson (2008), support from senior managers is a vital important factor behind the success of any change initiatives.

1.8.3 Employee's Attitude

Employee's behaviour in organization can be defined as how the employees present themselves in workplace. It consists of employee's general attitude about the job followed by job behaviours. According to Harrison *et al.* (2006), employee's attitude refers to employee's views about the job which lead to job behaviours.

1.9 Operational Definition

1.9.1 Lean manufacturing Performance

In this study, lean manufacturing performance will be measured based on five constructs provided by Kuo, *et al.* (2008). Those constructs are raising production, reducing lead time, customer satisfaction, lead in new product, and flexible production. This entire constructs has been used in order to evaluate the lean manufacturing performance in Malaysian automotive industry.

1.9.2 Senior manager's Support

In the context of this study, senior manager's support can be divided into six constructs based on Susan M. Heathfield that are having a clear vision, pay attention, allocate resource, establish structure, reward system, and lastly provide feedback.

1.9.3 Employee's Attitude

The employee's attitude in this research consists of four constructs suggested by Choi (2011). Those constructs are readiness to change, commitment to change, openness to change, and cynicism to change.

1.10 Summary

This chapter exposes the introductory facts for this research. The research questions of this study were derived from the problem statement of this study. Objectives of this study were formulated based on the research questions that arose. Furthermore, the conceptual and operational definitions were explained to give a clear picture on the constructs or the variables of this study. Next chapter will be discussing on the literature review gathered for this study.

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