

LETTER OF SUPERVISOR CONFIRMATION

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

Signature :

Name of Supervisor :

Date :

**5S IMPLEMENTATION IN MALAYSIAN MANUFACTURING
INDUSTRY. WHAT'S NEW?**

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APPROVAL

“I declare this thesis entitled “5S implementation in Malaysian manufacturing Industry” is my own work except the summary and excerpts of each of which I have mentioned the source”

Signature :

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Date : 20 June 2014

DEDICATION

Dedicated to my lovely family, especially to my father and mother for being supportive, encouraging and loving all the time. Thank you for helping, loving and always being there whenever I need you and for the strength that I feel because both of you loved me so much.

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ABSTRACT

This research focuses on the effectiveness of 5S practice in Malaysian manufacturing industry. 5S is the tool technique used by the organizations come from Japanese words, seiri (sort), seiton (set in order), seiso (shine), seiketsu (standardize), and shitsuke (sustain). The purpose of this research is to organize a workplace for efficiency and decrease wasting and optimize quality and productivity. 5S improves safety, work efficiency and improves productivity. The objective of this research is to analyze the 5S practice in the company while carrying out their operation. Surveying method is used and data collection is done by distributing a questionnaire to the organizations. From this study, we will know the impact of 5S practice on the company performance. In addition, the constraint factor for the 5S practice can be identified and the possible solutions for the organization will be analyzed through observation performance. In conclusion, the result of the research will be obtained by comparing the measurement of organizational performance before and after 5S practices. The effective of 5S practice is depends on the commitment of all employee in an organization.

Keywords: 5S, Continuous Improvement,

ABSTRAK

Kajian ini tertumpu kepada keberkesanan amalan 5S di industri pembuatan di Malaysia. 5S merupakan alat atau teknik yang digunakan oleh organisasi yang berasal daripada perkataan Jepun seiri (sisih), seiton (susun), seiso (sapu), seiketsu (seragam), dan shitsuke (sentiasa amal) ini bertujuan untuk menyusun atur tempat kerja bagi meningkatkan kecekapan dan mengurangkan pembaziran serta mengoptimumkan kualiti dan produktiviti. 5S meningkatkan Keselamatan, kecekapan bekerja dan meningkatkan produktiviti. Kajian ini bertujuan untuk menganalisis amalan 5S di dalam organisasi semasa menjalankan operasi. Kaedah kaji selidik telah digunakan dan pengumpulan data dilakukan dengan mengedarkan borang soal selidik kepada organisasi. Daripada kajian ini, kesan daripada amalan 5S kepada prestasi organisasi dapat dikenalpasti. Di samping itu, faktor kekangan bagi pelaksanaan amalan 5S dapat dikenalpasti dan penyelesaian bagi organisasi akan dianalisa melalui pemerhatian prestasi. Kesimpulannya, hasil daripada kajian akan diperolehi dengan membandingkan pengukuran prestasi organisasi sebelum dan selepas amalan 5S. Keberkesanan amalan 5S adalah bergantung kepada komitmen seluruh kakitangan dalam sesebuah organisasi.

Kata kunci: 5S, Penambahbaikan bererusan

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LIST OF ABBREVIATIONS

- 5S** Seiri (Sort), Seiton (Set In Order), Seiso (Shine), Seiketsu (Standardize), And Shitsuke (Sustain)
- 7S** Seiri (Sort), Seiton (Set In Order), Seiso (Shine), Seiketsu (Standardize), Shitsuke (Sustain), Safety And Security

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter will discuss more and detail the selected topic of this study. It will start with the introduction and background of the study, problem statement, research objective, research question, scope of study, the important for the study and it will finally end with the summary.

1.2 Background of study

Nowadays, the workplace is facing with the changes of technology and globalization. Most of the companies are trying hard to satisfy their customer's needs. One of the tools taking by the company are 5S program. 5S is the Japanese concept for housekeeping. It is sort (Seiri), straighten (Seiton), shine (Seiso), Standardize (Seiketsu) and sustain (Shitsuke). 5S is the base of all the total productive manufacturing pillar.

The first method of 5S is sorting (seiri) it will keep the necessary in the work area, dispose or keep in a distant storage area less frequently used items, unneeded items are discarded. Seiri fights the habit to keep things because they may be useful someday.

Seiri helps to keep work area tidy, improves searching and fetching efficiency, and generally clears much space. Seiri is also an excellent way to gain valuable floor space and eliminate old broken tools, obsolete jigs and fixtures, scrap and excess raw material.

5S is “ a determination to organize the workplace, to keep it neat, to clean, to maintain standardized conditions, and to maintain the discipline that is needed to do a good job,” (Takashi Osada). Understanding the 5S Principles is the first step toward a long-term culture change for the company. It is a method to reduce the environmental factors that cause contamination, lost productivity and unnecessary costs.

Second is strengthen (seiton) are systematic arrangement for the most efficient and effective retrieval. A good example of Seiton is the tool panel. Effective Seiton can be achieved by painting floors to visualize the dirt, outlining work areas and locations, shadow tool boards.

Thirdly is shine (seiso). After the first through cleaning when implementing 5S, daily follow-up cleaning is necessary in order to sustain this improvement. Cleanliness is also helpful to notice damages on equipment such as leaks, breakage and misalignment. These minor damages, if left unattended, could lead to equipment failure and loss of production. Regular cleaning is a type of inspection. Seiso is an important part of basic total productive maintenance and safety matter through cleanliness is obvious.

Fourthly is standardizing (seiketsu). Once the first three S have been implemented, it should be set as a standard so to keep these good practice work areas. Without it, the situation will get worse and right back to old habits. Have an easy to follow standards and develop a structure to support it. It allows employees to join the development of such standards. The 3 first S is often executed by order. Seiketsu helps to turn it into natural, standard behavior.

Finally, to keep first 4S success, it is necessary to keep educating people maintaining standards. By setting up a formal system with display of results, follow up and be expanded beyond their initial limits, in an ongoing improvement way and the Kaizen way. The effect of continuous improvement leads to less waste, better quality and faster lead times.

In the view of researchers most of all the Japanese company will introduce this 5S practice to their manufacturer. The vendor also must participate to implement this 5S practice. Most factories in the world have already implemented 5S practice, but there are some of the manufacturers don't satisfy for this 5S practice. They added 2S to it. Hence we can ensure there are 7S in some factory. Another 2S is safety and security. Safety is for the staff. It is good to implement this to protect the staffs. Security is to protect the company data.

Since 5S tools are very important, but not well applied, the right method need to identify first. By identifying the best method of implementing the 5S tools, the company will be able to know their weakness and will try to develop a better practice in the future. First and foremost, everybody needs to play their roles and take part in the improvement process. Everyone needs to understand the factor why the 5S practice is important and with that they will realize it is important for them to handle the problems together.

The most frequent problems occurred in the company are decrease of effectiveness and efficiency in the processes, low maintenance and improvement of the machine efficiency. However, the low quality product produce will give a bad perception to the customer. That is the reason why the they need to apply the 5S Practice in their company.

1.3 Problem statement

This study appears from the awareness to identify the 5S practice in Malaysian manufacturing. The 5S methodology is to analyze the process running on the workplace. The 5S is the methodology to create and maintaining well organized, clean, high effective and quality workplace. The lack of 5S practice will affect the efficiency of the whole company. The evaluation of 5S practice can be done through the implementation of 5S audit at each division in the company.

However, there is a lack of knowledge in some improving methods and tools like 5S and the challenge is much greater. It has been realized that the 5S practices are a good starting point for all improvement efforts aiming to drive out waste from the manufacturing process, and ultimately improve a company's bottom line by improving products and services, and lowering costs (Hirata, 2001).

Reviews of several previous studies on the ability and beneficial of 5S in delivering benefits towards the organizational performance discovered that most of the research works are conducted by using both qualitative and quantitative methods. To analysis the implementation of 5S in manufacturing industry.

Furthermore, it has been determined that most previous studies only look into the significant effect of 5S practices, specifically towards the manufacturing industry. Thus, will show that 5S is a good organization practice to create a continuous improvement plan and a great work environment for employees where the companies are dealing with poor performance problems.

1.4 Research questions

This, study is arranged based on the following questions:

- i. What are the factor that influences the Malaysia manufacturing to implement 5S?
- ii. What are the employee acceptance toward the application of 7S practice?
- iii. How to cope the challenges in order to apply the 7S practice in Malaysia manufacturing?

1.5 Research objectives

This, study is conducted to achieve the following objectives:

- i. To analyze the factor that influences the Malaysia manufacturing to implement 5S?
- ii. To identify the employee acceptance toward the application of 7S practice.
- iii. To examine the challenges in order to apply the 7S practice in Malaysia manufacturing.

1.6 Scope, Limitation and Key Assumptions of the study

The scope of the study includes the determination of 5S practice in Malaysia manufacturing. This study is only focused on Malaysia manufacturing. The researcher assumes that there will have few problems in gathering the data collection because this research is conducted using a quantitative approach. Another limitation or problems that cannot be avoided by the researcher throughout the research are a time constraint factor. Time constraint includes the time for the researcher to collect the research data from the respondents.

1.7 Significance of study

This study is important to review and understand the effectiveness of 5S practices towards the Malaysia manufacturing. Through the issue studied in this paper, it allows the researcher to contribute towards the implementation of 5S practice in the industry. This is because this study will help us to identify that how serious the industry exercising 5S practices as part of their organization policy. Moreover, the researcher needs to understand whether it is relevant to apply the 7S practice in the manufacturing industry.

1.8 Summary

This chapter consists of explanation of the background of the study of the 5S practice and the application of 7S concept. The researcher needs a better understanding about the concept of 7S practice and how it can be applied by the manufacturer in the workplace. Furthermore, in this chapter the researcher will explain about the problem statement, research question and research objective in order to conduct the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter consists of the explanation about the 5S quality concept and its implementation in manufacturing industry. Furthermore, this chapter also will discuss the importance of 5S practice in a workplace.

2.2 What is 5S?

The concept of good housekeeping practice has been with the Japanese for a very long time. At home and in school, children are disciplined to adhere to good housekeeping practices. However, it was only in the early 1980s that good housekeeping became a pertinent issue in Japanese industries as companies realized its powerful contribution to productivity and quality improvement. The basis for good housekeeping in Japanese companies is a concept popularly known as 5S. This stands for the five good housekeeping concepts in Japanese

5S is a systematic technique used by organizations it comes from five Japanese words. According to Debashis Sarkar (2006), he said that the 5S concept was popularized by Taiichi Ohno, who designed the Toyota Production System, and Shigeo Shingo, the Japanese practitioner who put forward the concept of poka-yoke.

5S practice will help to organize a workplace more efficient and decrease wasting and increase the productivity. Moreover, O'hEocha (2000) has stated that 5S is an effective technique that can improve housekeeping, environmental performance, as well as safety standards in a systematic way.

Many employees think that the housekeeping should be done by a cleaner at the workplace, but it is more important if they take part in keeping the workplace is clean. This 5S practice is not only doing housekeeping, but it can move into broader areas.

Step	5S Overview Course Components		Action	Motto	
1S	Sort	Organization	Seiri	Remove unnecessary items from the workplace.	"When in doubt, throw it out."
2S	Set	Orderliness	Seiton	Locate everything at the point of use.	"A place for everything, and everything in its place."
3S	Shine	Cleanliness	Seiso	Clean and eliminate the sources of contamination.	"The best cleaning is to not need cleaning."
4S	Standardize	Standardized Cleanup	Seiketsu	Make what looks good routine and standard.	"See and recognize what needs to be done."
5S	Sustain	Discipline	Shitsuke	Sustain by making 5S second nature.	"The less self-discipline you need, the better."

Figure 2.2: 5S overview

2.2.1 Seiri (sort)

Seiri refers to the practice of sorting through separate the necessary items from unnecessary one in the workplace. Furthermore, it helps to maintain the workplace clean and improve the efficiency of searching and receiving things, shorten the time of running the operation (Michalska and Szewieczek, 2007).

It also can be described as working in small teams, distinguish between needed and unneeded items and eliminate the unneeded ones. This practice will empower team-based activity responsible for respective work areas. It will leave only the bare essentials for the job.

Figure 2.2.1: Seiri (sort)

1S	MEANING	MAIN ACTIVITIES	GOALS
SORT	Working in small teams, distinguish between needed and unneeded items, and eliminate the unneeded ones.	Remove all unneeded items, update area maps, and formulate policies to maintain lean conditions.	<ul style="list-style-type: none"> • Create a course of action, make decisions, and eliminate unneeded items. • Implement a strategy control plan.

2.2.2 Seiton (set)

Seiton refer to arrange the things where they best meet their functional purposes. According to Suganthi and Samuel, (2004) seiton means organizing the things in such a way so that these can be identified easily and avoid confusion which may lead to stress.

The suitable activities for this is creating a functional layout with a supporting storage or staging system. This will increase job efficiency by eliminating non-value added motion.

Figure 2.2.2: Seiton (set)

2S	MEANING	MAIN ACTIVITIES	GOALS
SET	Put things where they best meet their functional purposes.	Create a functional layout with a supporting storage/staging system.	<ul style="list-style-type: none"> • Create a well-organized workplace. • Create a functional storage/staging system and layout (in terms of quality, efficiency, and safety). • Increase job efficiency by eliminating non-value added steps/motion.

2.2.3 Seiso (shine)

Seiso means inspect, clean and repair item in the workplace. All sources of waste and contamination need to be identified and fixed it. Shine is a key element in a self-sustaining continuous improvement program. Furthermore, the employee need to have a better understanding of theirs tool and process and how they are supposed to conduct it. This step will ensure that the workstation is ready for the next user and that order is sustained.

Figure 2.2.3: Seiso (shine)

3S	MEANING	MAIN ACTIVITIES	GOALS
SHINE	Inspect for and eliminate the sources of waste, contamination and inefficiency in work processes.	<ul style="list-style-type: none"> • Inspection and cleaning of the work area. • Optimization of processes to eliminate wasted resources. 	<ul style="list-style-type: none"> • Employees have a better understanding of their tools and processes and how they are supposed to run. • Utilize cleaning and inspections to find opportunities for improvement. • Utilize the shine process to drive continuous improvement.