

## The relationship between 5S lean tool and WP of FMCG Warehouse in Peninsular Malaysia

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### Abstract

FMCG warehouse are warehouse that keep fast moving consumer goods and comprising many section such as frozen or fresh product area, fast and slower moving items section, various handling situation and conditions, making it vital for operatives to manage FMCG warehouse well in order to avoid waste. The concept of 5S Lean tool refers to five processes for achievement of standardization, effective organization, and continuous improvement of FMCG warehouse. WP is measure that help to detect the inefficient of warehouse management. The methodology of this research is compiled the literature and background of study to answer the research questions and to develop a conceptual framework. This research studies the relationship between the implementation of 5S lean tool and WP of FMCG warehouse in Peninsular Malaysia. Furthermore, this study also adding source of literature in terms of 5S lean tool and for the purpose of improving Warehouse performance (WP). This includes an overview of 5S Lean Tool and WP literature. Lastly, the relationship between 5S Lean Tool, and WP for FMCG warehouse in peninsular Malaysia is discussed to show the development of the hypothesis proposed in this study

**Keywords:** 5S Lean Tool, Warehouse Performance, Malaysia FMCG Warehouse

### Introduction

The present business world has brought significant changes to the market, the increase of green innovation (Conding et al., 2012), managerial innovation (Zamri et al., 2013), sustainability (Habidin et al., 2015a), corporate social responsibility (Fuzi et al., 2015), uncertainty, competition, and customer demand has become even more crucial. This situation stated the importance of a good-functioning supply chain to meet customer demand (Habidin et al., 2015b; Zaini et al., 2014; Sah et al., 2014a; Sah et al., 2014b; Jaya et al., 2012a; Jaya et al., 2012b). According to Gergova (2010) explain supply chain as the chain of activities that involves plan, manage, coordinate and control the flow of goods from the supplier to the customer and warehouse is one of the integral element that exist along the Fast Moving Consumer Goods (FMCG) supply chain.

It is believe that warehouse play a significant part in the success and failure of modern supply chains. This is because warehouse has a significant effect on organization service levels, response times and operational costs (Gergova, 2010; Bozer, 2012). Function as a transformer, warehouse involves in receiving, storing, cross-docking, and distributing goods to retailers and consumer (Constantino, Dotoli, Falagario, Fanti, & Mangini, 2012). Due to high competition in industry, the success of product in market depends on supply chain design and warehouse as one of its element that able to provide high speed in reaching retailer and consumer with minimal operational cost. In this study, researcher focus on FMCG warehouse in peninsular Malaysia.

FMCG warehouse are warehouse that keep fast moving consumer goods and comprising many section such as frozen or fresh product area, fast and slower moving items section, various handling situation and conditions, making it vital for operatives to manage FMCG warehouse well in order to avoid waste. As stated by Lakmal and Wickramarachchi (2011), lack of warehouse management techniques can incurred huge warehouse related cost as it is difficult to specific any area for special attention in avoiding waste. Other than that, operating warehouse might involve too many decision makers which make warehouses are rather complex to deal with (Manzini, 2012). Therefore, the prevailing situation requested for advanced ways to help reduce waste and improve warehouse performance (WP).

In this study, 5S Lean tool is proposed in order to improve the visibility, material flow, work organization and standardization of processes. The concept of 5S Lean tool refers to five processes for achievement of standardization, effective organization, and continuous improvement of FMCG warehouse. It is short-stands from the Japanese words of seiri, seiton, seiso, seiketsu, and shitsuke for sort, strangthen, shine, standardize, and sustain (Young, 2014). Based on study by Mustafa (2015), 5S lean tool are able to eliminate many of the forms of waste, creates and enhances visual management, and can reduce potential for errors in warehousing management. Thus, Lean 5S being chosen as an adequate tool for improvement of the FMCG warehouse processes by measured it with WP.

## **2. Literature Review**

### **2.1 5S lean tool**

5S abbreviated for sort (seiri), straighten (seiton), shine (seiso), standardize (seiketsu) and sustain (shitsuke) with slight differences in the names depending on the author explanation and the translation (Young, 2014). According to Gergova (2010), 5S Lean tool is one of the business tools to help business strategies that focus on waste reduction. In the context of warehousing improvement, 5S lean tool is tool that can help warehouse managing waste, cost and bring benefit to warehouse performance. The 5S lean concept are originated from Japan and the original purpose is to make as kaizen in workplace (Hashim et al., 2012a; Hashim et al., 2012b; Hashim et al., 2013) to improve safe, efficiency, and reduce product defect rate. During the mid of 1950, Toyota production system were forced to developed method that help to solve resources limitation and 5S Lean are proposed as one of the method which make every scrap in the company were used while wasting nothing (Chi, 2011). This is supported by Stadnicka and Antosz (2013) as the research finding show that 5S lean tool are the most popular and first tool that implement by organization. Hence, it might as well suitable for FMCG warehouse management in Peninsular Malaysia. Furthermore, research by Mustafa (2015) mentioned that 5S lean tool is theoretically applied for waste control in warehouse

operations. It is believed that the 5S approach will propose outcomes of improved visibility, smoother material flows, workplace organization and standardization for FMCG warehouse.

## **2.2 Warehouse Performance (WP)**

According to Gergova (2010), Warehouse performance (WP) is measure that help to detect the inefficient of warehouse management. In relation to that, the definition of WP in this study is the measurable results of the 5S lean tool that related to an organization's control of its operational, waste, and value stream. WP is related to the FMCG warehouse management of the company. It is the control of the FMCG warehouse based on the objectives, policies, and goals. In short, WP is the measurement of performance that might enable warehouse changes by reporting and validating the impact and benefits of the changing processes (Gergova, 2010). WP will be conducted through follow-up of performance indicators, which would reflect the relationship between 5S Lean tool towards improvement of warehouse. WP will provide reporting to make decisions on the FMCG warehouse operational process that involves waste disposal and value added process.

## **2.3 The Relationship between 5S Lean Tool and WP**

Previous studies claim that there is relationship between 5S lean tool and WP (Gergova, 2010; Walker, 2011; Srinivasan, Ikuma, Shakouri, Nahmens, & Harvey, 2016). Gergova (2010) case study in United States has proven than 5S Lean tool are able to discarding the unnecessary inventory and setting in warehouse management. This ensures easier access, reduces wasteful activities in warehouse and can help to improve WP. Study by Srinivasan et al. (2016) showed that 5S Lean tool is rather instant and tangible in management. It is not only help warehouse to organizing work environment and standardizes workflow, but it also assigns clear ownership of specific task or process to each employee. From inception, 5S lean tool is practices that collectively work to reduce waste and costs. Specifically, simultaneous implementation of 5S Lean tool carries greater performance benefits, in terms of WP. The implementation of 5S Lean tool carries greater performance benefits, in terms of WP. A hypothesis regarding the relationship between 5S Lean tool and WP is formulated as follow:

H1: There is relationship between 5S lean tool and WP in FMCG warehouse in Peninsular Malaysia.

## **3. Purpose of the study**

The objective of this research is to determine the relationship between the implementation of 5S lean tool towards WP of FMCG warehouse in Peninsular Malaysia. The research question and the objective of the research as following:

### **3.1 Research Questions**

1. Is there relationship between 5S lean tool and WP of FMCG warehouse in Peninsular Malaysia?

### **3.2 Research Objective**

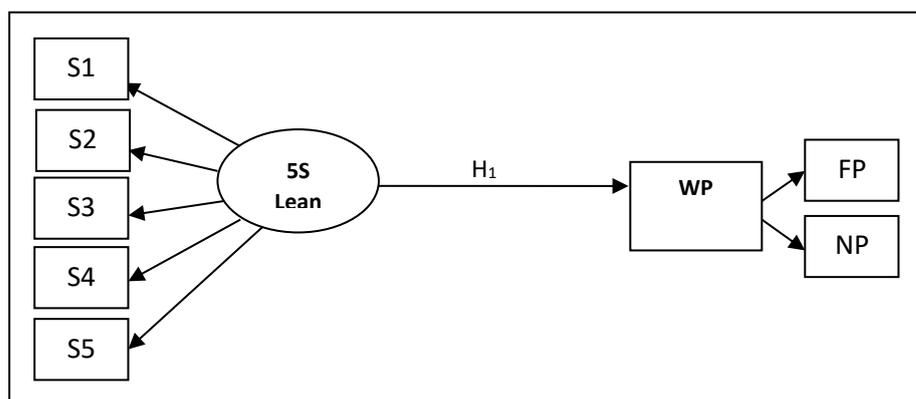
1. To determine the relationship between 5S lean tool and WP of FMCG Warehouse in Peninsular Malaysia.

#### 4. Methodology

The research activities that were designed are to achieve objectives of this study. The first phase of research activity is compile the literature and background of study to answer the research questions and to develop a conceptual framework. For this phase, researcher review the literature to acquiring knowledge, propose dimensions and propose conceptual framework for 5S Lean tool Lean tool and WP. For future research, the full survey to the FMCG warehouse in Peninsular Malaysia will be conducted. The Statistical Package for Social Sciences (SPSS) software will be employed to analyze the reliability test, descriptive analysis (mean and variance) and EFA analysis. The Structural Equation Modeling (SEM) technique will also be employed in future study using AMOS software to investigate the relationship between the developed conceptual frameworks through the path analysis by the SEM approach.

#### 5. Conceptual Framework

The research model aims to analyze the relationship 5S Lean Tool, and WP of FMCG warehouse in Peninsular Malaysia. The proposed conceptual framework as presented in Figure 1.



\*Notes: S1= sort (*seiri*), S2= straighten (*seiton*), S3= shine (*seiso*), S4= standardize (*seiketsu*), S5= sustain (*shitsuke*), H<sub>1</sub>= Hypothesis1

Figure 1. The proposed conceptual framework

#### 6. Conclusion

This research studies the relationship between the implementation of 5S lean tool and WP of FMCG warehouse in Peninsular Malaysia. Furthermore, this study also adding source of literature in terms of 5S lean tool and challenges for the purpose of improving WP. This includes an overview of 5S Lean Tool, VSM, and WP literature. Lastly, the relationship between 5S Lean Tool, VSM, and WP for FMCG warehouse in peninsular Malaysia is discussed to show the development of the hypothesis proposed in this study.

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