# FOOD MANUFACTURING LEAN LOGISTICS PRACTICES IN SMEs

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I hereby acknowledge that this project paper has been accepted as part of fulfilment for the degree of Bachelor of Technology Management (Supply Chain Management and Logistic) With Honours

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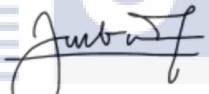
SIGNATURE : 

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This thesis is submitted in partial fulfilment of the requirements for the award of

Bachelor of Technology Management (Supply Chain Management and Logistic) with Honors

Faculty of Technology Management and Technopreneurship

Universiti Teknikal Malaysia Melaka



2022

# DECLARATION OF ORIGINAL WORK

I hereby declare that all the work of this thesis entitled “FOOD MANUFACTURING LEAN LOGISTICS PRACTICES IN SMEs” is original done by myself and no portion of the work encompassed in this research project proposal has been submitted in support of any application for any other degree or qualification of this or any other institute or university of learning.

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# DEDICATION

I would like to appreciate the dedication of my beloved family members who educated me and motive me to learn until degree level. And, I express a deep sense of gratitude to my lecturer whom also my supervisor for my final year project, Dr. Murzidah Binti Ahmad Murad and my fellow friends. They have provided me fully support and advice throughout this research. Without their blessing and encouragement, this research is impossible to complete within short period of time

## ACKNOWLEDGEMENT

I would first want to extend my sincere gratitude to my supervisor, Dr. Murzidah Binti Ahmad Murad, for her counsel in allowing me to complete this work. She has been helpful in offering critiques and recommendations to make sure I have completed the task to a high standard. She helped me professionally throughout this investigation, and I appreciate that.

Without the assistance and gratitude of the interview subjects, my study will fall short. From the bottom of my heart, I want to thank everyone who was patient with me during the interview process. I am grateful.

Finally, my family, who have the largest impact on my life. I could not have finished my thesis without your dedication, supplications, encouragement, assurance, and contributions. For inspiring me, I really thank you. Futhermore, I want to take this opportunity to thank everyone who has, directly or indirectly, influenced the concepts I have presented in this thesis.

## ABSTRACT

This study is about evaluation lean logistics practices on food and beverages manufacturing. This research will be focusing on lean logistics in food manufacturing in SMEs. In order to make an evaluation on lean logistics in SMEs, several question will be introduced to the owners and workers. The respondents of this study are the owners or workers of the SMEs. The objectives of this research are to investigate the lean logistics practices in food manufacturing, to identify the challenges faced by food manufacturing to applying lean logistics in its industries and to suggest a framework to encourage lean logistics practices in food manufacturing industry. Research of this thesis will be undertaken by the interview method. Other than investigate the lean logistics, this paper would also contain some recommendations methods for future research. Data from the recorded audio of the interview then will be interpreted into words and will be used for the findings. The interview will be conducted on several SMEs that were in Ayer Keroh, Melaka area and the people of the SMEs. The results will be useful in achieving the research objective.

Keyword: SMEs, lean logistics

## ABSTRAK

Kajian ini adalah mengenai penilaian “Lean Logistics” pada pembuatan makanan dan minuman. Penyelidikan ini akan memfokuskan pada “lean logistic” dalam pembuatan makanan di IKS. Untuk membuat penilaian mengenai “lean logistics” di IKS, beberapa pertanyaan akan diperkenalkan kepada pemilik dan pekerja. Responden kajian ini adalah pemilik atau pekerja IKS. Objektif penyelidikan ini adalah untuk menyiasat amalan logistik yang betul dalam pembuatan makanan, untuk mengenal pasti cabaran yang dihadapi oleh pembuatan makanan untuk menerapkan “lean logistics” di industri dan memberi cadangan kerangka untuk mendorong amalan “lean logistics” dalam industri pembuatan makanan. Penyelidikan tesis ini akan dilakukan dengan kaedah temu bual. Selain menyiasat penggunaan logistic yang betul dalam pembuatan, ini juga akan mengandungi beberapa kaedah cadangan untuk penyelidikan masa depan. Data dari rakaman audio wawancara kemudian akan ditafsirkan menjadi kata-kata dan akan digunakan untuk penemuan tersebut. Temu ramah tersebut akan dijalankan ke atas beberapa IKS yang berada di kawasan Ayer Keroh, Melaka dan warga IKS. Hasilnya akan berguna dalam mencapai objektif kajian.



Kata kunci: SMEs, “lean logistics”

# TABLE OF CONTENT

# LIST OF ABBREVIATIONS

| ABBREVIATION | MEANING |
|---|---|
| CRM | CUSTOMER RELATIONSHIP MANAGEMENT |
| ERP | ENTERPRISE RESOURCE PLANNING |
| IoT | INTERNET OF THINGS |
| JIT | JUST IN TIME |
| SKU | STOCK KEEPING UNITS |
| SME | SMALL AND MEDIUM-SIZED ENTERPRISES |

# LIST OF APPENDICES

# CHAPTER 1

# INTRODUCTION

## 1.1 INTRODUCTION

Lean logistics are commonly used in many different industries today. They are based on the original concept of lean manufacturing, which got its beginning in the Japanese manufacturing industry. In 1988, John Krafcik coined the term as a part of his master's thesis at MIT.

While there are times when Lean and Lean logistics are terms used interchangeably, that is not always the case. Logistics is a detailed implementation and/or organization of an operation that is complex in nature. So, rather than being a generic lean strategy, which can be almost anything that is done to eliminate waste, lean logistics are going to refer to more complex tasks.

This could be a manufacturing process, warehousing, shipping, or any number of other things. The concepts behind lean logistics are used in many ways across many different industries. When done properly, they will help to eliminate waste, improve safety, and increase the bottom line of the company that is following lean principals.

## 1.2 BACKGROUND OF STUDY

Lean logistic management was created to eliminate waste in supply chains such as excess inventory, time, and cost. Lean Logistics are designed to pull inventory through the supply chain rather than push it. This is also the goal of lean logistics: removing waste and variation from supply chains (Marlow & Casaca, 2003). According to Abushaikha (2018), lean thinking is now being used to support warehouse and logistics company operations.

Lean logistics presents numerous challenges, according to Lambrechts, Son-Turan, Reis, and Semeijn (2019). The additional time required for shipments to move door-to-door over long distances is a particular challenge for Global Lean Logistics. Furthermore, each shipment involves numerous parties. According to some reports, a single shipment can involve up to seventeen parties, including suppliers, truckers, freight forwarders, terminals, customs brokers, railroads, ocean/air carriers, and others. It is difficult to implement lean across such a large, multi-transactional supply chain. With each purchase order/shipping transaction, the parties are frequently working together and at odds.

All types of logistics infrastructure play an important role in logistics processes that occur in logistics systems, whose primary task is to ensure the availability of products on the market. According to Piotr Blaik (2001), logistics infrastructure is defined primarily as material resources, methods of use, and application systems that enable the physical flow of goods as well as the flow of information. The relevant literature gives the reader a comprehensive view of logistic infrastructure in terms of its tasks. This is due primarily to the fact that the coordination of materials management processes, which occurred in the presented logistics infrastructure, was the cornerstone of the development of logistics as a science.

## 1.3 PROBLEM STATEMENT

Malaysians love small and medium-sized businesses (SMEs). As a result, the number of SME businesses in the current market has increased. However, determining the precise measure is difficult because not all SME traders register their businesses with the Companies Commission of Malaysia (SSM) (Development Finance and Enterprise Department of Bank Negara Malaysia, 2013). SMEs are businesses that can be easily expanded with a small amount of capital. Despite being only small and medium-sized businesses, SME traders face fewer critical crises in order to boost their business growth.

The fundamental goal of this study is to see how operations and environmental management may be linked on a tactical level, including the waste management supply chain. Waste is defined as something that is eliminated or dumped once a process is completed because it is no longer useful or required. Waste occurs in every industry, particularly the food industry. In this category, waste was characterised as inefficiencies in the manufacturing process, including defect, extra processing, overproduction, waiting, inventory, underused talent, transportation, and motion. Nawras Skhmot has agreed with this assertion (2017). These unvalued wastes that the industry incorporates into its goods have an impact on the overall cost of the process. It will conclude with an unexpected loss. These errors will continue to occur, resulting in significant losses over time.



Furthermore, this study incorporates an innovation to assist SMEs in minimising waste. It is the introduction of new products and services to a business that provide value. Any type of business that relies on client loyalty to repeat orders on production needs to be innovative. However, SMEs are confined in their creativity to the development of new items, and this is a hindrance to their growth. SME Info agrees with this assertion, stating that SMEs typically disregard innovation and technology in favour of ensuring that their day-to-day business operations function smoothly. The declaration, on the other hand, welcomes technological developments. Because of the industry's financial difficulties, SMEs have insufficient technology. It is because, in order to use the technology, they'll require a lot of money to keep up with the latest updates, and their income won't allow them to do so. Furthermore, SMEs face challenges in obtaining bank loans. In a report on financial stability and payment systems

2018, Bank Negara Malaysia stated that a survey of 1529 SMEs registered with the Suruhanjaya Syarikat Malaysia (SSM) found that insufficient documents, insufficient cash flow to cover repayments, and business plans that are not viable were among the reasons for SME financing applications being denied.

## 1.4 RESEARCH QUESTIONS

The following research questions have been developed for the purposes of this study:

i. How lean logistics practices use in the SMEs?
ii. What are the challenges that are faced by the SMEs in implementing lean logistics?
iii. What are the significant of applying lean logistics practices in SMEs?

## 1.5 RESEARCH OBJECTIVES

The following are the study's objectives:

i. To investigate lean logistics practices in the SMEs.

ii. To identify the challenges that SMEs encounter in implementing lean logistics methods in their businesses.

iii. To learn the significant of applying lean logistics practices in SMEs.

## 1.6 SCOPE OF RESEARCH

The research will be focused on the obstruction of applying lean logistics among Food Industry in SMEs. The area was located at Ayer Keroh, Melaka. The first enterprise is Mamasab Bakery which has cookies and brownies as their main items. The second enterprise is BubbleBee. The third enterprise is Woodfire which is a small medium business. The fourth enterprise is Cendol Jelatang which have cendol as their main items. The fifth enterprise is Halal Planet Coffee which have coffee as their main items. Lastly, the sixth enterprise is Richiamo Coffee which also have coffee as their main items

### 1.6.1 Time Constraint

The researcher is required to complete the research within 14 weeks which the researcher has 15 credits hour in other subjects. There will be a barrier to the researcher to totally focus on the research. However, with the effects of post COVID-19 virus in Malaysia, the researcher has difficulty in dealing with the company for an interview session because of the new regulation in the country.



### 1.6.2 Budget Constraint

The researcher needs to ensure that the budget is sufficient with the income every month. During this study, there are several expenses that need to be spent on various aspects. Researcher budget is limit due to the incomes every month.

### 1.6.3 Transport Constraint

The researcher did not have its own transport. This has been the barrier for the researcher to get information from the industry. Due to the reason, the researcher needs to seek transport or public transport to visit the industry for interview and observation.

## 1.7 RESEARCH SIGNIFICANCE

Lean logistics is a method of continuous improvement that sectors may use and benefit from. After implementing lean logistics in the food production industry, several important benefits can be realised.

To begin with, the food production business will see a rise in revenues. Because waste is eliminated in the waiting phase for items to arrive as desired, lean logistics can naturally boost customer satisfaction.

Second, the food processing business can lower its overall costs. Lean logistics, as is well known, eliminates waste and lowers costs. These waste elimination processes include unvalued added processes. It indicates that inefficient processes will be abolished. reduce the overall cost of borrowing by reducing the liability's cost.

Finally, the food production industry's manufacturing procedures will improve. This is due to the elimination of numerous wastes, which gives the impression that efficiency can be improved. Existing waste is an impediment to enhancing industrial efficiency in this scenario.

## 1.8 CONCLUSION

As a conclusion, this study focuses on the adoption of Lean Logistics in the food manufacturing industry and SMEs. This study will also identify the most appropriate suggestions for improving the system's Lean Logistics processes in the chosen industry. Meanwhile, the primary goal of this study is to look into lean logistics practises in food manufacturing and identify the problems that food manufacturers experience while implementing these practises. Finally, a recommendation framework will encourage food manufacturing companies to use lean logistics methods.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 INTRODUCTION

This chapter is about the literature review or review of the past research by another researcher. In this chapter, the writer will discover and review articles. However, not the entire item will be discussed, along with the references, the writer will only determine and review relevant keywords and contents.

## 2.2 OVERVIEW OF SMEs IN MALAYSIA

Malaysia's small and medium-sized enterprises (SMEs) are critical to the country's economic success. In the year 2000, SMEs accounted for 89.3 percent of all manufacturing establishments, according to SMIDEC (2004). In 2003, they accounted for 29.1% of total manufacturing output, 26.1 % of value-added, 27.5 % of employment, and 32.5 % of total employment. Furthermore, by 2020, SMEs' value-added production is expected to be worth RM120 billion, or 50% of total manufacturing production. Malaysia, on the other hand, has a lower proportion of SMEs in total exports than several other countries, including the Philippines, Hong Kong, Taiwan, and even the US (SMIDEC, 2002). Malaysia has the highest concentration of SMEs in textiles and clothing, food and beverages, metals and metal goods, and wood and wood products. Malaysia's manufacturing enterprises are primarily concentrated in and around the country's major industrial regions. 2006 (Saleh & Ndubisi).



## 2.3 DEFINITION OF LEAN LOGISTICS

The idea of Lean Logistics is turning out to be increasingly more typical in world writing. It is characterized in different manners, predominantly relying upon the extension, and setting of the investigation. Most by and large, it is a calculated component of creation, in accordance with the Lean Management idea (Baudin, 2004). Inside and outer strategic cycles are intended to help the constant progression of creation materials and finishing the conveyance to end clients, simultaneously keeping up the suitable time, spot, quality, and cost. Also, all strategic cycles

occurring in the association must be continually improved, particularly concerning the end of pointless waste and exercises not creating included worth (Baudin, 2004). By and by, there can be nine strategic zone called attention to in which the ordinary misfortunes for Lean can happen. These are: coordination administration and client assistance, gauging request and arranging, acquisition and buying, stock administration, conveyances, and correspondence, bundling of materials, transportation, stockpiling, and converse coordination Sopadang et al. (2014). Applying Lean standards according to the recorded zones, aside from ID and end of misfortunes, prompts numerous substantial advantages. The most significant of them include adjusting creation lines and diminishing lead time factor (estimated from the request time to the conveyance time), decrease of stock levels, disposal of vacation, delays, and undesirable inconstancy, just as a more prominent accessibility of items along with adaptability all through the gracefully chain. Applying the rules of Lean Logistics consistently, assists with forestalling any cycle deficiencies, mostly basing on a precise investigation of cycles, creation control viable with the draw framework, and supporting continuous activities through various devices run of the mill for the Lean idea, for example, VSM, Kanban, TPM or 5S. The variation of Lean standards to the administration of coordination measures are to add to the improvement of streams happening in them.

## 2.4 LEAN LOGISTICS PURPOSES

One of the objectives of lean logistics is to lower costs by lowering process unpredictability, which lowers defects. Six sigma is a technique for boosting process power and capability (Nave, 2002). Six sigma is also thought of as a technique to lessen waste, boost client delight, and enhance financial outcomes (Revere et al., 2003). Organizations can utilise statistical techniques to comprehend process variations, which will help them identify the problem's underlying causes. Long-term advantages for Lean, six sigma, and lean sigma 271 companies should result from process improvement that focuses on removing the root cause of problems and process control that prevents those flaws from reoccurring (Pojasek, 2003). (Bisgaard and Freiesleben, 2004). The six sigma evolves with time (Arnheiter and Maleyeff, 2005). Designing, enhancing, and observing business processes are all part of six sigma (Revere et al., 2003). It has taken many different shapes and encompasses anything from straightforward process improvements to large-scale projects like project management, change management, leadership, cultural transformation, rewards and pay, disability definition, teams, and problem resolution (Goodman and Theuerkauf, 2005).