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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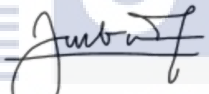
SIGNATURE : 

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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

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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”

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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).

2.5 LEAN LOGISTICS PRACTICES IN SMEs

2.5.1 Specify Value

According to Colin McArdle, (2017), the specify value is focuses on the customer's eye perception of value. This mean that the organizations need to identify the value or quality that need by the customers on their products. This would affect the result based on customer feedback either to repeat purchased the product or else. The specify value was import because it will affect the next step and the results, especially the customer feedback.

2.5.2 Map the Value Stream

The value stream consists of all required processes to provide consumers with the products. According to Colin McArdle, (2017), the value added need to interrupt in the process. This because "Value Adding" is an activity which changes the size of material or items, type, shape, or feature in orders to meet customer requirements. Think about something as that which the client can pay. Any other activity is 'waste.' However, researchers have found that the net benefit of 95% of wastes is just about 5% in business operations. If organization could eliminate this waste, the procedures will be even more efficient, allowing organization with the same period to make more goods (Colin McArdle, 2017). Organization should restrict processes to only those which provide added value to allow organizations to focus more time on achieving consumer requirements.

2.5.3 Create a Production Flow

This stage requires evaluating the process, reducing waste and seeking flow-creating solutions. Based on Colin McArdle, (2017), this means moving elements in a seamless line, from the supply chain through the production to the finished product, the ultimate goal being to produce a one-piece flow that removes stock, stops or defects. Organization Maximize efficiency and deliver consumer goods on schedule, with and without defects. By reducing the waste, the productivity of the organization can be increase and the finished goods can be settled in a short time.

2.5.4 Establish Pull

Establishing 'pull' involves organizing procedures to synchronize your operations from the moment the consumer places the order into the supply chain and manufacturing phase (Colin McArdle, 2017). The goal of the organization is to deliver consumer pull items, as in the manufacture "just in time." It is because, Organizations may not have to store the supplies to produce bulk goods in these areas, creating a very expensive inventory to handle that can end up wasting because the consumer will come to them for the items as they need it. This statement shows, that in this area, organizations may need to produce the goods based on customer demand only with the best to achieve their requirement. This would help the organizations to reduce waste, especially waiting waste that will result customer dissatisfaction due of the late products deliver.

2.5.5 Seek Perfection

In this area, al the process would be repeat until perfection on the process being found. The organizational culture will become part of lean thinking, quality development and emphasis on consumer requirements (Colin McArle.2017). The effectiveness of a quality management program relies on the employees of the company and in the search of excellence they will be the number one weapon.

2.6 CHALLENGES THAT SMEs ENCOUNTER IN IMPLEMENTING LEAN LOGISTICS PRACTICES IN THEIR BUSINESSES

2.6.1 Lack of Knowledge

Talib et al. (2013) claim that SMEs are business entities that have spending issues and flourish owing to ignorance, and ultimately, true knowledge. One factor is that the majority of SMEs, especially micro and small businesses, are family-run organisations, and technical competence is frequently "downgraded," which may cause it to lag behind current technology and not be as inventive as it could be for the benefit of the business (The Business Times, 2014). Such "training" is inconsistent and lacks continuity (The Business Times, 2014). Another factor is that SMEs rely largely on outside information to expand their businesses because they cannot afford the cost of research (Braun and Hadwiger, 2011). The majority of large businesses have their own research and development divisions and laboratories where they can conduct tests and research in an effort to further knowledge and creativity (Braun and Hadwiger, 2011). However, because of the business's practises about confidentiality and market rivalry, it is getting harder to obtain their findings. For information and training, SMEs therefore look to public institutions like governmental organisations, research centres, and universities. Since many SMEs, particularly in the food processing industry, continue to struggle to run their operations properly, the success of information transfer between these organisations and the industry is still in question (Alam, 2010; Zain et al., 2012).

2.6.2 Manufacturing Issues Due to Poor Design

The aforementioned difficulties limit SMEs' capacity to plan and construct effective food plants. This section focuses on two manufacturing problems that develop once the plant is operational as a result of inadequate plant design. Food sustainability and sanitary standards are these problems. When aiming to save manufacturing costs, it makes logical to start here since product development accounts for 80% of product cost. In actuality, the concept or architecture stage accounts for 60% of the total cost. Product description, technology, team makeup, technology, part combinations, and off-the-shelf components are all determined by product architecture.

The production, supply chain, vendor, quality, dependability, service, variety, configuration, modifications, and derivative product strategies are also decided during this phase. Of all the ways to cut manufacturing costs, these choices have the biggest effects. A excellent place to start is to keep your attention on the most effective cost-cutting techniques. These consist of:

I. Design to reduce material and part costs, with the purchase of off-the-shelf components constituting a significant portion of this.
II. Adding quality expenditures where the return on investment is insufficient to justify them
III. By spending more time in the planning stage, we can do away with change orders.
IV. Put your attention on vendor alliances that can increase value and, ultimately, cut manufacturing costs.

2.6.3 Access to Skilled Human Capital

One of the biggest obstacles facing Malaysian SMEs has been repeatedly identified in prior research as a lack of qualified human capital resources (Zain et al., 2012; Saleh and Ndubisi, 2006; Talib et al., 2013; APEC, 1994). The literature generally suggests that there is a lack of talented and skilled workers (APEC, 1994; Talib et al., 2013; Zain et al., 2012). Given the utilisation of ICT and technology, the shortage of skills is particularly significant. One of the aspects of manufacturing that is least frequently reported on, especially within the Lean Movement, is the idea that a company's greatest asset is its human capital. The foundation of the lean manufacturing environment is human capital. Gaining a competitive edge and achieving growth is done by empowering the employees. In actuality, a company's only truly appreciating asset is its human capital.

The imminent retirement wave of the Baby Boomer generation and the growing shift in the values of the workforce make this topic important. Manufacturing workers used to be content to work just with their hands. Today's worker, on the other hand, expects to be involved with their intellect, heart, and psyche in order to feel empowered and successful — to learn, take part in, and develop as a means of achieving job satisfaction.

With notable success stories like Toyota and Pella, the Lean Process has matured recently. Many practitioners have seen their profitability double or triple by utilising the Lean Leadership methods, all without significantly increasing their investment. This coming of age demonstrates how crucial it is to value the human aspect, which is essential to the Lean Process.

2.7 THE SIGNIFICANTS OF APPLYING LEAN LOGISTICS PRACTICES IN SMEs

2.7.1 Reduce Total Cost

Lean Logistics goals are to eliminate the waste by MUDA, while increase the productivity. From the waste eliminating process, there has already cut several processes that unnecessary which that did not add-value. This statement has been supported by Haryani Ngah, in 2018 in Berita Harian. As much as RM 13.3 million cost saved successfully by 59 companies of SMEs, who are involved in Vendor Development Program and Lean Transformation Program for SME (PTL-PKS). This programs also known as Creanova Program. Based on the total saved cost, the manufacturing sector has successfully saved around RM9.7 million. Besides, the program also success reduce 56 workforces due of the waste elimination in the lean process. Lean manufacturing practises can save production costs by boosting worker productivity, speeding up production, lowering inventory, and slashing errors and scrap by as much as 50%. Lean production's basic tenet is to produce more with fewer resources, with waste reduction as the primary goal. Any activity that, in the eyes of the client, does not create value is considered waste. The Lean Enterprise Research Centre (LERC) found that 60% of production operations in a typical industrial operation are waste, meaning that they generate absolutely no value for the consumer. The good news is that practically any business can reduce manufacturing expenses by utilising lean manufacturing strategies.

2.7.2 Increase Efficeiency

The productivity in the organization has been increase since the lean logistics has been implemented. This statement has been supported by Haryani Ngah, in 2018 in Berita Harian. The articles in Berita Harian entitle “Pengurusan Lean Lonjak Produktiviti PKS”. Refer from the previous statement on the 2.3.1. Reduce total cost, which much of workflow has been eliminated by the SMEs manufacturing sector. Simultaneously, in has create the productivity level and create the efficiency on the organization. SMEs cannot growth their business before this due of the unnecessary process that does not added value on the workflow that delay the next process and disturb the final process to complete the final product. This shows that, the un-added value of workflow was factoring that SMEs cannot achieve the efficiency and enlarge their business.

2.7.3 Increase Customer Satisfaction

In lean logistics implementation in organization, customer satisfaction can be accomplished by practices the 5 principles of lean manufacturing. This has been proof whenever the 5 principles of the lean manufacturing mostly focused on the customer needs and expectation. Unless they work in manufacturing, manufacturers may only have a passing familiarity with "lean" concepts. Lean may be applied to any business or production process, in any industry, and has long been thought of as a technique to significantly increase manufacturing efficiency.

For instance, lean is currently widely employed in the food business to increase productivity and lower costs. The concepts can even be applied on a smaller scale, such as when organising your workplace, work space, or laboratory.

Toyota developed lean first to get rid of waste and inefficiency in its manufacturing processes. The method grew so popular that manufacturing industries all around the world have adopted it. Being lean is essential for an American business to compete with nations with cheaper costs. Lean manufacturing aims to eliminate waste, or any process' non-value-added components. A process retains some waste unless it has been “lean” numerous times. When implemented properly, lean can result in significant increases in productivity, cycle time, efficiency, material prices, and scrap, which lowers costs and boosts competitiveness. “Lean” is not just for the industrial industry. It can enhance a team's ability to collaborate, manage inventories, and even communicate with customers.

2.8 THE WASTE IN LEAN LOGISTICS PRACTICES

2.8.1 Defect

Defect waste in manufacturing process not only happen in lean manufacturing, but it has also happened in lean logistics. This usually happen due to human error. This is because, the often happen in lean logistics on defect issue are broken tools and does not meet customer needs McLaughlin, (2020). On the broken tools that cause defect shows that the labor does not have enough preparation before the organization starts their goods processing. This statement has been supported by Nawras Skhmot (2017); Defects exist if the product is not safe for use. This typically leads to the rework or scrapping of the product. The outcomes are also unsustainable as they add extra costs to the activities without giving the consumer any benefit.

2.8.2 Cost Reduction

Overproduction takes place before it is demanded or acquired in the production of a component or an aspect of the product. If an unused worker or machinery is available, it could be tenting to create as many products as possible. The 'Just-In-Case' way of operating led to various problems, though, instead of producing products just as required under the 'Just In-Time' approach, like seamless work flow, higher storage costs, covering defects inside work in process, causing increased capital spending to fund the production process, and overtime. Nawras Skhmot, (2017). There are many harmful consequences. It causes a caterpillar impact on the movement of output which generates a surplus of WIP. This contributes to the planning which ultimately to the effort done to push the WIP more frequently. So, if it had been found with fewer break, it might conceal defects (Christina Gay 2019). However, according to Christina Gay (2019), there were few reasons the overproduction waste repeatedly happens in manufacturing process:

- Unreliable process
- Unstable production schedules
- Inaccurate forecast
- Demand information Customer needs are not clear.
- Long or delayed set-up times

2.8.3 Waiting

Waiting is the worse wastes that effect the customers time for them waiting their goods receive on their hand especially to the customers. The surplus consists: (1) workers waiting for supplies or products and (2) unused machinery. Warning period in manufacturing stations is also induced by unevenness which may generate excess stocks which surplus goods. Besides, waiting can often create excessive waste in the form of errors should the waiting induce a rush of action in attempt to "recovery" that may not obey normal work or take shortcuts. According to Christina Gay on 2019, few factors that occur the waiting waste happen were:

- Unplanned downtime or Idle equipment
- Long or delayed set-up times
- Poor process communication
- Lack of process control
- Producing to a forecast
- Idle equipment

2.8.4 Not Ultilising Talent

Human capital loss is often referred to as the excess of wasted human potential and creativeness. This loss happens as businesses split the management position from workers. According to Christina Gay, (2019), it can contribute to incorrect activities or tasks that workers have not been properly trained for and stem from poor communication management. Management obligation is the preparation, coordination, regulation, and advancement in industrial systems of certain organizations. The job of the employee is to obey instructions and to do the work as planned. It is impossible to develop procedures by not using the experience and skills of the frontline staff. That is because the individuals performing the work are the ones who will best recognize and create approaches to issues.

2.8.5 Excess Processing

Over-processing entails putting in more effort, introducing more parts, or taking more action than the consumer desires in a product or service. Throughout this process, it may be appropriate to use a higher-precision machine, components with capacities greater than what is required, conduct more research than is necessary, over-engineer a solution, change a part, and provide more functions in a device than is necessary. (Nawwras Skhmot, 2017). According to Christina Gay, 2017, the causes of excess manufacturing are described as below:

- Poor communication
- Not acknowledging the desires of the customers

2.8.6 Inventory

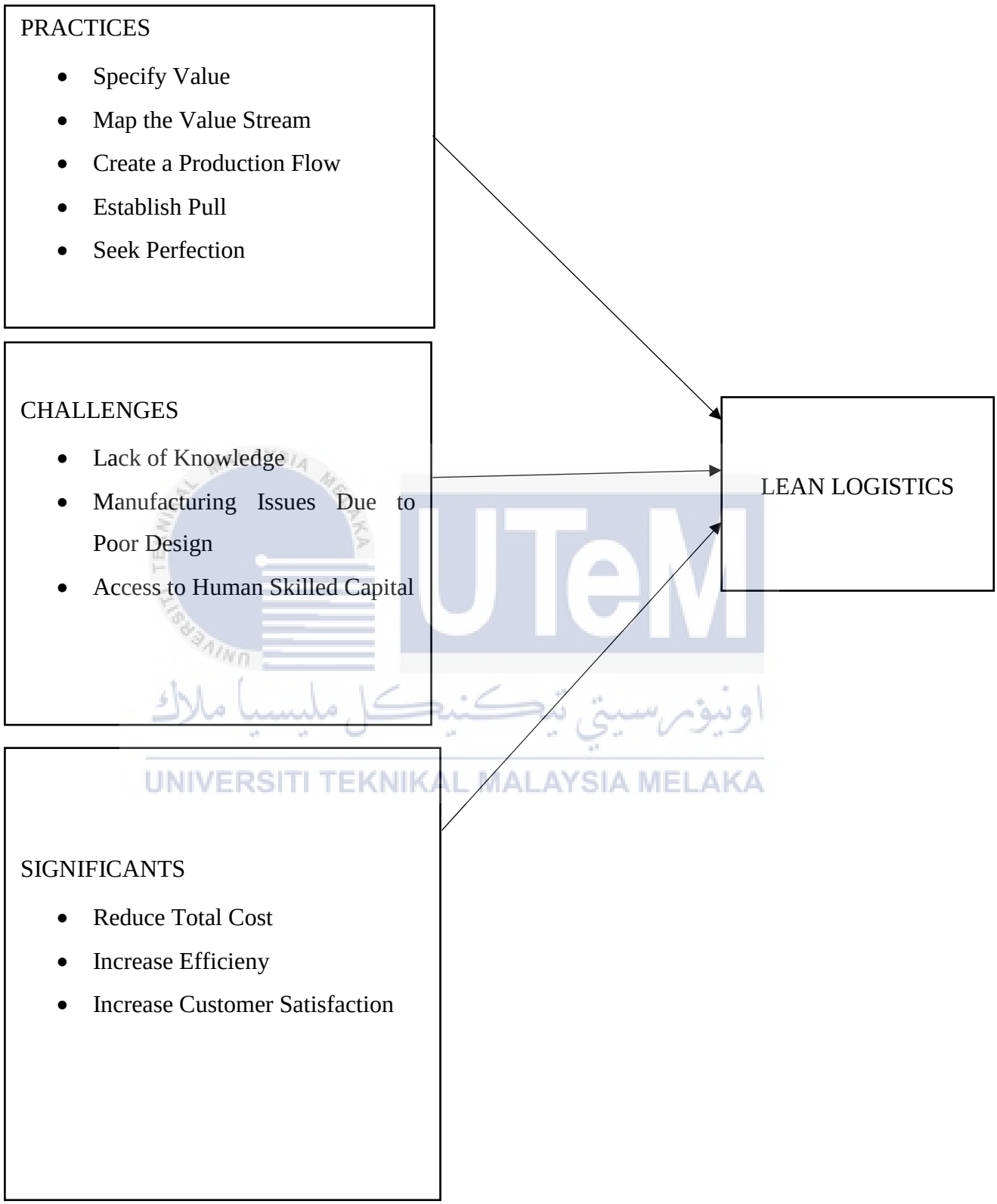
Inventory is considered waste due to the costs of keeping it. It refers to materials, work in progress, and finished goods. Product waste can occur when ordering or preparing. It could also indicate that the process relationships between development and purchasing / planning are disrupted or poorly planned. Excess production as surplus is also difficult to imagine. Product loss can occur as a result of poor purchasing or inadequate preparation.

It also implies that the mechanism between output and purchases / scheduling is disrupted or poorly planned (Chrystina Gay, 2019). Holding more inventories than necessary to ensure a smooth operation, on the other hand, will contribute to issues such as flaws in goods or hazardous products, a longer lead time in the manufacturing cycle, excessive resource management, and issues hidden in the warehouse.

2.9 SUMMARY

The purpose of the literature review is to obtain some answers regarding previous investigations that are nearly identical to the examination to be led by the scientist. This section has looked broadly at the general hypothesis on lean logistics practices in food production among SMEs. The point will be derived from lean coordination, waste in assembly, and SME impediments. This section depicts the investigation's examination system, which was obtained from reference diaries, books, the internet, and other sources

2.10 CONCEPTUAL FRAMEWORK



CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The research methodology is scientific because it is methodical; it necessitates the consistent and correct application of terminology. While research methodology is a systematic approach to problem solving and science to study how high-quality findings would have a significant impact in this segment. This chapter's main topic is how the research was conducted. The duration of the analysis is further clarified. In comparison, the report used a qualitative research method and would explain why this method was used in this review. The qualitative analysis approach, which is an interview tool, is used as the primary type of evidence and knowledge gathering. Meetings with three different types of SMEs' services were used to conduct the interview.

3.2 QUALITATIVE APPROACH

The consistency, clarity, and effectiveness of lean logistics in food production are improved by the application of this technology. The researchers examined and analysed the findings before the interview. Chapter 3 explains the procedure. To conduct process data analysis, researchers must categorise and examine specifics and knowledge from written data. The six stages of analysis for the interview data are depicted in the image below:

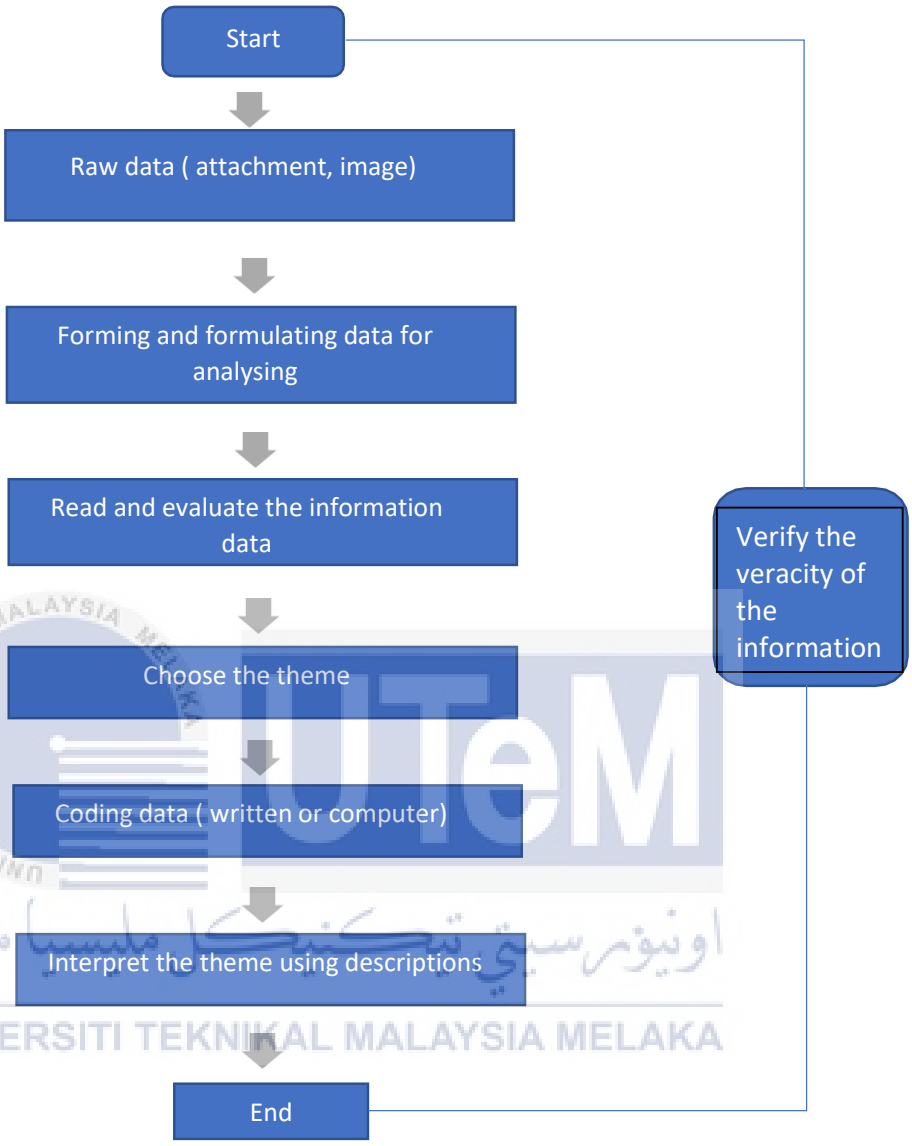


Figure 3.2: Procedure for Data Analysis in Qualitative Research

I. Begin data analysis

All transcription sheets are organized and structured in text segments until the appropriate details can be given. Sectional and graded paragraphs and phrases in the text document.

II. Forming and formulating the data analysis.

During the interview, the six businesses will be listed. The analysis was done to ensure that the comments were not misunderstood.

III. Read and evaluate the information and data

This is to maintain the general understanding of the details and to interpret the context of the conversation after the recording has been completed.

IV. Themes and description are present in a graph

The evidence from each group of categories will be grouped and compiled for each theme. Besides, in graph form is much easier to understand. The evidence graph contains the coding structure that provides the descriptive evidence that support the themes of the research.

V. Coding the data

Coding is the method by which the meaning or persons and concepts or subjects are identified for classification. The analysis processes the respondent collects all necessary material. Data is coded after all the data are transcribed in full (Conroy, M., 2010).

VI. Interpreting the meaning of themes / descriptions

From the data collection with the support evidence, an important interpretation has been done. Theme identification is one of the most rudimentary tasks in qualitative inquiry. It is one of the most important things in interview method of qualitative research.

3.3 RESEARCH OPERATIONAL FRAMEWORK

The figure of the research can be divided into seven stages from planning research till the last presentation and submitted the report. The whole procedure of the study has taken about 14 weeks to complete the report. Figure 3.3 illustrate the operational framework for the research.

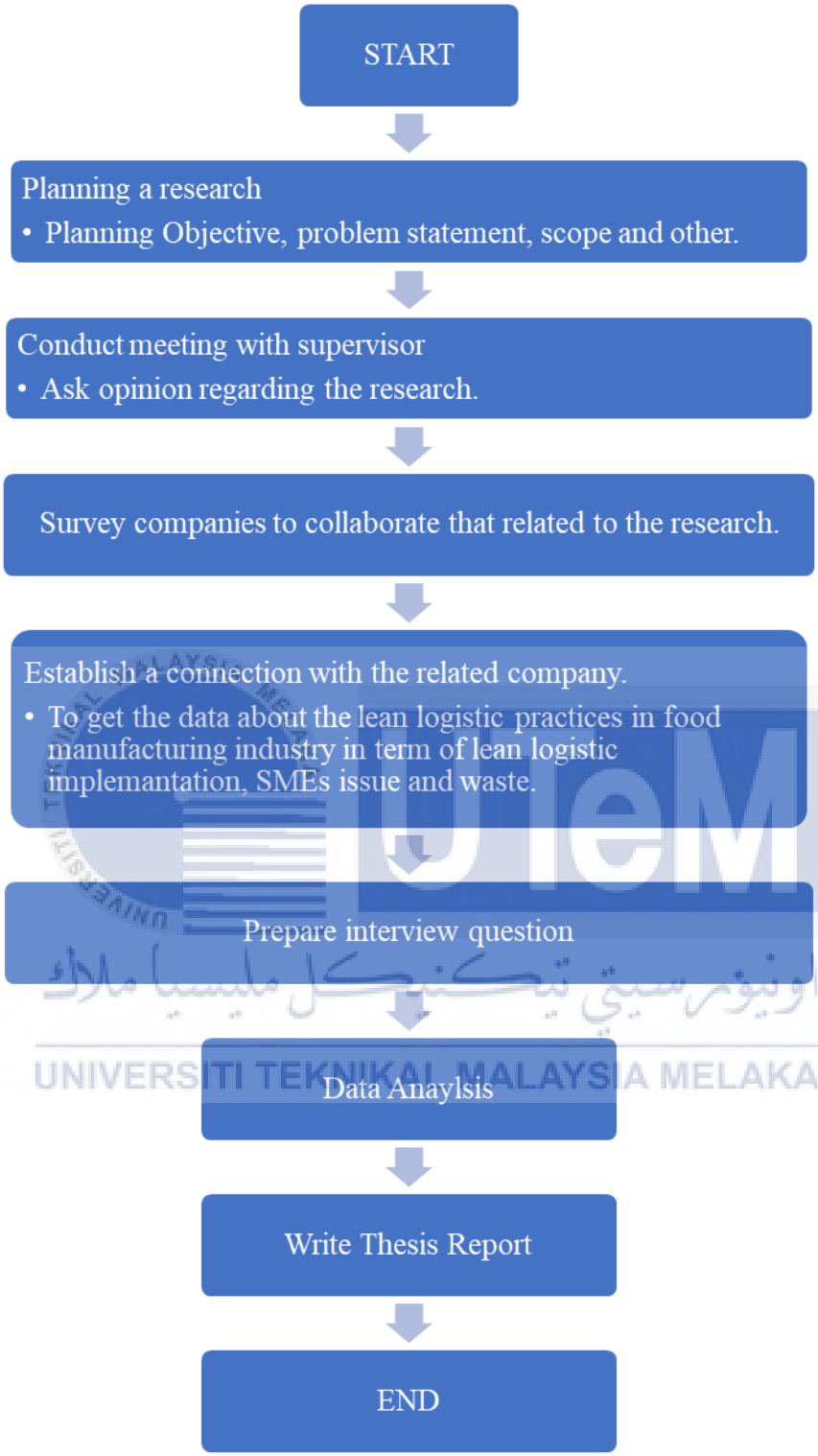


Figure 3.3 Research Operational Framework

3.4 RESEARCH METHODOLOGY

3.4.1 QUALITATIVE DATA

Qualitative research reflects the way researchers in the world view the world, which uses precise scientific concepts and terminology (qualitative data analysis, used by researchers to analyses results, based on various techniques that seem to fit a particular methodological framework and, in general, data collection quality involves interviews, observations, and documents.

Researchers choose to use qualitative research in research because qualitative methods aim to explore new thoughts and experiences. This will help the researcher to study various opinions that have the same problem based on the current situation.

3.4.2 RESEARCH INSTRUMENT

The instruments of research apply to the method the researcher uses for completing this study. The two instruments the researcher should use to collect the following data:

1. **Primary data**: Interview
2. **Secondary data**: Journal, article, and brochure

The instruments methods mention above are the main methods that can be used by the researcher to get the data based on the study. This instrument would help the research to complete the study.

3.5 DATA COLLECTION

Primary and secondary methods will be used to gather data for this research and to accomplish the objectives. Interview sessions will be held in particular locations for primary data. This study will be supported by journals, websites, and papers written by prior researchers for secondary data.

3.5.1 PRIMARY DATA

The researcher will describe the techniques used to create the data collection procedure in this section. Each step of this strategy is carefully considered to make sure that no crucial data is overlooked over the course of this research. Additionally, the researcher employed a qualitative approach, with interviews serving as the primary means of gathering data on lean logistics techniques. The researchers also gathered information about lean logistics strategies in food manufacturing that adhered to the present procedure through direct interviews or reliable means.

All of these data were collected utilising lean logistics systems and concepts to learn more about the current processes. Additionally, the researcher's primary motivation for choosing qualitative methods over other ones is that they will yield correct respondent data.

3.5.2 SECONDARY DATA

The researcher's secondary approach involves gathering data from publications such as journals and articles, pamphlets, citations, and library resources to strengthen the research overall. With the use of this methodology, the researcher can investigate more data that is relevant to and necessary for the study's goals.

I. Journal and articles

Journals and secondary data papers for this study will be sourced via the internet and libraries. Journals and papers serve to support research data.

II. Internet and brochure

Brochures were also utilised by researchers to gather secondary data. The brochure's purpose is to serve as a reference for further study. In addition, the majority of publications were used as sources for supporting data in this study.

3.6 INTERVIEW PROTOCOL

Researchers can gain rich, in-depth qualitative information from interviews to better understand participants' experiences, how they describe those experiences, and the meaning people assign to those experiences (Rubin & Rubin, 2012). There are many books and articles on conducting research interviews because interviews are essential to qualitative research. This is already their resources are typically focused on conditions that foster quality interviews, like gaining access to and choosing participants (Rubin & Rubin, 2012, Seidman, 2013), establishing trust (Rubin & Rubin, 2012), the location and duration of the interview, the order, quality, and clarity of the questions (Patton, 2015, Rubin & Rubin, 2012), and the entire interviewing process (Brinkmann & Kvale, 2015, Patton, 2015).

The resources that will be available to conduct individual research interviews offer practical, if not always consistent, advice for developing and enhancing interview protocols. For this study, I will follow the interviewing procedure and conduct interviews with the managers and employees of the six corresponding SMEs. As a result, I will conduct the interview in four stages: ensure that the questions are relevant to the research study; establish the interview protocol to encourage conversation based on questions; have the protocol evaluated by others; and last, conduct the interview.

3.7 DATA ANALYSIS METHOD

Prior to data analysis, data cleaning will perform to uncover mistakes, omissions, and untrustworthy information and guarantee the data is correct. To ensure the veracity of the data acquired, each interview question will be verified and revise. Qualitative data analyze using a deductive technique in which research questions utilize to collect data of the six SMEs in Ayer Keroh, will evaluate based on research questions.

3.8 RESEARCH FRAMEWORK

The research framework is a process and tool utilized by the study. Based on the flow below, the study begins with the objective research that has been stated in the chapter 1. The flow has structured properly to obtain successful outcomes in this research work. For the collection of the necessary information, primary data which are qualitative and secondary data were used from the journal and the website. The following statements are the basic research framework:

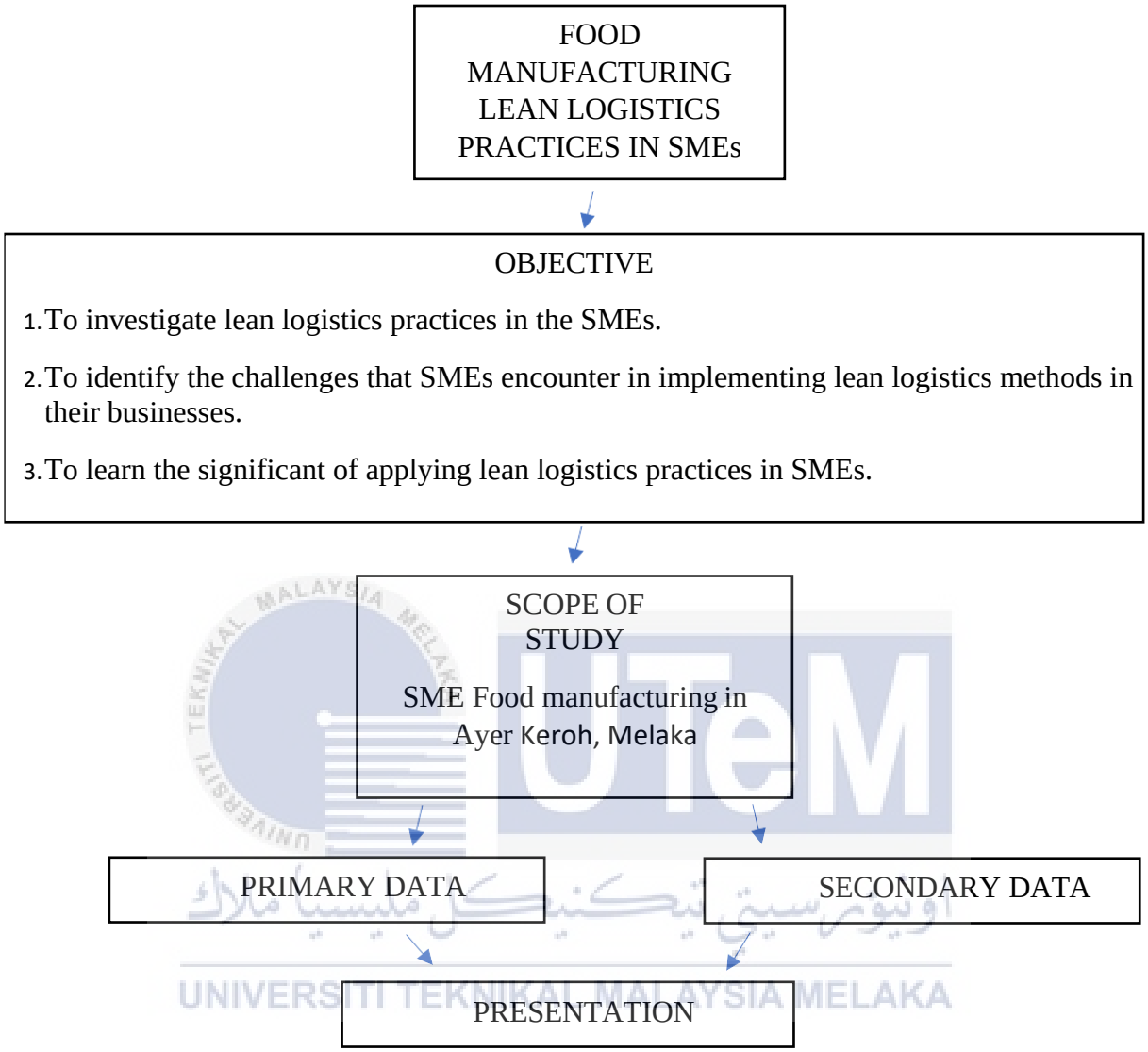


Figure 3.8: Research Framework

3.9 EXPECTED RESULT

The expected outcome of this research is that the researcher will be able to identify the current waste management process used by a company or manufacturer. It is to determine whether the company is following the correct lean logistics procedure based on the lean manufacturing principle.

Furthermore, the researcher will be aware of the obstacles that the SME faces on a regular basis as their business runs. The researcher would know how the problems were resolved and how they affected the business based on the response.

These findings will be critical in assisting the researcher in identifying the entire lean logistics process and procedure practices in the food manufacturing industry among SME. Furthermore, by conducting this research, the researcher will be able to advise industries on the best lean logistics procedure and process implementation by reducing waste and creating new process flows. Furthermore, these will assist food manufacturers in improving their operations.

CHAPTER 4

DATA ANALYSIS AND DECISIONS

4.1 INTRODUCTION

The main subject of this chapter will be the outcomes of the interviewing procedure and the data gathering. Each respondent initially creates a quick profile. The main issue is caused by SMEs' grasp of and adherence to Lean Logistics systems and principles as well as its efficacy. In the investigation into the efficiency of the Lean Logistics strategy in Ayer Keroh, Melaka, all these subjects are connected.

4.2 INTERVIEWEE PROFILE

The researcher had gotten the permission for information of each respondent such as respondent's name, age, position, company name and background, and how long they work in respective SMEs. The researcher gets this privacy information or data from interview session. Thus, Table 4.2 shown the profile of interviewee or respondent that get from interview session.

Table 4.2: Interviewee Profile

Interviewee Name	Position	Address /Place	Date /Time
Nur Hazwani (Respondent A)	Manager	Mamasab Bakery 44, Jalan TU 2, 75350 Melaka	29/12/2022 9am-10am

Safwana (Respondent B)	Cashier	Bubblebee Malacca International Trade Centre, 75450 Ayer Keroh, Malacca	29/12/2022 10am-11am
Dally (Respondent C)	Worker	WoodFire 56, Jalan TU 42, 75450 Ayer Keroh, Melaka	29/12/2022 1pm-2pm
Abdul Rahim (Respondent D)	Worker	Cendol Jelatang Jalan Kormersil, Melaka International Trade Centre, 75450 Ayer Keroh, Melaka	29/12/2022 11am-12pm

Azrizan (Respondent E)	Cashier	Halal Planet Coffee Tapak 08, Melaka International Bowling Centre, Jalan Konvesyen Hang Tuah Jaya,Kompleks, Melaka International Trade Centre, 75450 Ayer Keroh, Melaka	29/12/2022 12pm-1pm
Nabila (Respondent F)	Manager	Richiamo Coffee Jalan KF 1, Kota Fesyen MITC, Mukim Bukit Baru, 75450 Ayer Keroh, Melaka	12/1/2023 2pm-3pm

4.3 Company Background

4.3.1 Mamasab Bakery

In 2015, Mama Sabrina, the owner of Mamasab Bakery, launched a cake and bakery operation out of her Klang house. Mama Sabrina at the time picked up several cake recipes from workshops and YouTube videos. Pn Sabrina is eager to study from many businesses' professional professors in Malaysia in order to expand the Mamasab company. In just three years since opening its first location in Petaling Jaya in 2018, Mamasab has grown to include 12 locations around Malaysia.

4.3.2 BubbleBee

A Malaysian celebrity couple, Shuib Sepahtu (Shahmira Muhammad) and Siti Sarah Raisuddin, who also serve as the company's board members, launched the BubbleBee company. The company is owned and run by BubbleBee SDN. BHD., and its corporate offices are in Puchong, Selangor. The company currently operates more than 27 self-owned stores and celebrity shared-stores in six different Malaysian states. In December 2019, the company completed its establishment. It is a private partnership business, with Ismail Abdul Rahman as the CEO and the famous couple serving as active board members.

4.3.3 Woodfire

Daud Abdul Jalil developed the gourmet burger restaurant Woodfire. The business was founded in Johor Bahru and has been in operation for over six years. Their first location in Malaysia is Woodfire Taman Suria, also known as WoodFireJB. Their burgers are so enormous they are nearly sinful, but the pricing are fair. The Gourmet Burger, which is the restaurant's specialty, is constructed with hand-formed patties of your choosing and topped with spicy egg yolk sauce, streaky beef dill pickles, tomatoes, and vegetables. Along with brisket, the brisket burger also includes smoked beef slices.

4.3.4 Cendol Jelatang

Cendol is an iced sweet treat made with coconut milk, green rice flour jelly, and palm sugar syrup. It frequently resides throughout Southeast Asia, especially in Malaysia. The green jelly may also be topped with extra garnishes like durian, sweetened red azuki beans, or sliced jackfruit. Muaz founded Cendol Jelatang on August 31, 2021, at Pusat Perniagaan Jelatang in Alor Gajah, four months before the MCO, or Malaysia Government Movement Control Order, came to an end. Tau Fu Fa and Soya Milk Seller was Muaz's initial line of business before Cendol Jelatang were even established.

4.3.5 Halal Planet Coffee MIBC Melaka

On July 14, 2020, Halal Planet Coffee opened its doors for the first time at Bandar Baru Bangi. There is more to this establishment than just coffee; there are enticing Asian and Western cuisine available, many of which are vegan-friendly and healthful. The cafe is ideal for teatime visits as well because they serve a variety of delicious cakes and sweets along with a cup of their award-winning coffee.

4.3.6 Richiamo Coffee

RICHIAMO COFFEE SDN. BHD is the company that owns and runs the coffee shop. It was founded in September 2016 by the local artist "Raja Ilya," who goes by the name Raja Ramilah Begum. A chain of high-end coffee shops. The organisation is led by a committed team to continuously achieve the organisational goal to position itself as a premier coffee shop chain with a global presence and to continuously grow through innovation and dedication to excellence. The company is guided by its firm belief in ensuring a consistent supply of quality products and providing excellent service to its customers. Richiamo Coffee is dedicated to consistently providing a high-end cafe experience.

4.4 LEAN LOGISTICS PRACTICES IN THE SMEs

The primary goal of this research is to investigate the understandings of lean logistics practices in the SMEs. The ideal strategy is to always adhere to a guide. Lean Logistics' Lean Principles Process is the appropriate approach. If done properly, it will reduce expenses and increase profits. For the organisation to successfully implement lean logistics, it is crucial to understand and appreciate the appropriate lean logistics approach. Based on the responses from the respondents, the researcher may conclude that the SME is unaware of the best strategy to execute lean of waste logistics to save costs. This study has outlined the justifications for the companies of their understanding of "Lean Logistics" in Ayer Keroh. The researcher spokes with the each correspond respondents on each different session during the interview. Each of the respondent names are identified as (A, B, C, D, E, F). Table 4.4 below is the answer given by the respondent during the interview for question what are their understandings of Lean Logistics:

Table 4.4: The Lean Logistics Practices

Respondent	Position	Answer
A	Manager	Reduce Waste in Each Process
B	Cashier	Reduce Waste and Cost Operation
C	Worker	Increase Profit by Reducing Waste
D	Worker	Lowering Cost in Evert Steps
E	Cashier	Lower Operating Cost and Waste
F	Manager	Minimising Waste

Therefore, during the interview session, 6 repondents which consists of employees and managers responded to the question. The first respondent is Nur Hazwani (Respondent A), a manager at Mamasab Bakery, who stated that the lean logistics is a process to reduce waste in each process and increase productivity. As a result, Mamasab Bakery is able to reduce cost operation. Furthermore, the second respondent, Safwana (Respondent B), a cashier at BubbleBee, stated that lean logistics is a process to reduce waste and cost operation. Also, the third respondent, Dally (Respondent C), a worker from Woodfire stated that lean logistics is a process to increase profit by reducing waste. Not to mention, the fourth respondent, Abdul Rahim (Respondent D), a worker

at Cendol Jelatang stated that lean logistics is a method for lowering waste in every step while raising productivity. As a result, operating costs can be decreased. The fifth respondent, Azrizan (Respondent E), a cashier at Halal Planet Coffee, stated that lean logistics is a method to lower operating costs and waste. Lastly, the sixth respondent, Nabila (Respondent F), stated that method for increasing profit by minimising waste. But they have one thing in common, all the respondent claims that the effects of post Covid-19 pandemics lead to the usage of lean logistics. This is due to the fact that many SMEs today realising the importance of Lean Logistics in their respective company.

4.5 THE CHALLENGES THAT SMEs ENCOUNTER IN IMPLEMENTING LEAN LOGISTICS METHODS IN THEIR BUSINESSES

Finding the challenges that SMEs encounter in implementing lean logistics methods in their businesses is the study's second goal. Despite the fact that mostly SMEs apply Lean Logistics, the respondents have noticed and experienced various challenges. With this, the researcher has examined challenges. Production issues relating to the several outcomes are regularly experienced by SMEs. By implementing lean logistics through waste reduction and efficiency enhancement, some food production solutions, particularly those used by micro-enterprises, try to overcome the difficulties. The difficulties and effectiveness gains associated with lean logistics in SMEs are depicted in the table below. Thus, Table 4.5 are the result for the challenges that SMEs encounter in implementing lean logistics methods in their businesses.

Table 4.5: The challenges that SMEs encounter in implementing lean logistics methods in their businesses.

Respondent	Position	Answer
A	Manager	Lack Raw Materials or Staff
B	Cashier	Lack of Time and Knowledge
C	Worker	Need Enough Experience
D	Worker	Short Raw Supplies
E	Cashier	Lack of Time and Knowledge
F	Manager	Someone with Necessary Abilities

The first respondent is Nur Hazwani (Respondent A), a manager at Mamasab Bakery, who stated that lack of raw materials or staff, Mamasab Bakery are unable to please its clients. This has an effect anywhere consumers are dissatisfied and turn to rivals. Furthermore, the second respondent, Safwana (Respondent B), a cashier at BubbleBee, stated that due to a lack of time and knowledge, as well as some issues that cause the production process to be interrupted, it can be difficult for her to deal with the problem of waste. Also, the third respondent, Dally (Respondent C), a worker from Woodfire stated there are no problems with putting the lean logistics system in place. But, to begin, they will need enough experience or someone with skills in lean logistics to

ensure that they using the right approach to implement the actual lean logistics process. Not to mention, the fourth respondent, Abdul Rahim (Respondent D), a worker at Cendol Jelatang stated that unable to satisfy our customers when we are short on raw supplies or personnel. Anywhere that unsatisfied customers seek out competitors, this has an impact. The fifth respondent, Azrizan (Respondent E), a cashier at Halal Planet Coffee, stated that dealing with the waste issue can be challenging for him because of a lack of time and knowledge, as well as other problems that interfere with the production process. Lastly, the sixth respondent, Nabila (Respondent F), stated that lean to ensure that she employing the proper strategy to implement the actual lean logistics process, Richiamo Coffee will first need to have adequate experience or someone with the necessary abilities.

Based on the aforementioned table, the researcher may say that the majority of SME have not implemented lean logistics. This is because inadequate understandings hinder lean-logistics' ability to operate efficiently. Productivity eventually is impacted by this. According to everyone's arguments, the researchers discovered that there are three main obstacles preventing micro-small enterprises from implementing efficient lean logistics: a shortage of raw materials, employee ineptitude, and a lack of guidance from experts. Furthermore, it has previously been established that these claims hinder and make it difficult to indirectly address the waste process.

4.6 THE SIGNIFICANT OF APPLYING LEAN LOGISTICS PRACTICES IN SMEs

Finding out the the significant of applying lean logistics practices in SMEs is the third goal of this study. As a result, this study will discuss some of the the significant of applying lean logistics practices in SMEs. Table 4.6 show the the significant of applying lean logistics practices in SMEs.

Table 4.6: The significant of applying lean logistics practices in SMEs

Respondent	Position	Answer
A	Manager	Significant Amount of Money
B	Cashier	Save a Lot of Money
C	Worker	More Competitive and Efficient
D	Worker	Production Capacity Increases
E	Cashier	Increasing Revenue
F	Manager	Efficiency and Competitiveness

The first respondent is Nur Hazwani (Respondent A), a manager at Mamasab Bakery, who stated that she have been able to save a significant amount of money and generate more revenue than ever. Furthermore, job efficiency improves, and more goods can be produced than ever. Furthermore, the second respondent, Safwana (Respondent B), a cashier at BubbleBee, stated that when lean logistics is running well, BubbleBee will save a lot of money by eliminating redundant processes and making more money than before. Also, the third respondent, Dally (Respondent C), a worker from Woodfire stated that business became more competitive and efficient whenever excessive overhead processes were eliminated, as the operation became shorter, and they could produce a greater amount of goods in less time. Not to mention, the fourth respondent, Abdul Rahim (Respondent D), a worker at Cendol Jelatang stated that they have been able to save a sizable sum of money and produce more revenue than ever before thanks to our comprehensive approach to enhancing and managing waste. Furthermore, production capacity increases and job efficiency improve. The fifth respondent, Azrizan (Respondent E), a cashier at Halal Planet Coffee, stated that by removing unnecessary operations and increasing revenue, lean logistics will enable me to make significant savings. Lastly, the sixth respondent, Nabila (Respondent F), stated that

eliminating unnecessary overhead procedures improves the company's efficiency and competitiveness since shorter operations allow her to create more things in a given amount of time.

Efficiency is the result since each industry's productivity, especially that of SMEs, demonstrates advancement in the manufacturing process. The researchers will find that the majority of SMEs believe the method is effective since they have previously been successful in lowering a little amount of waste in their sector. It is possible to monitor and respond to the process in terms of the efficiency table outcome. The researcher refers back to his existing procedure, the lean theory, and the difficulties they confront, but argues that their approach is currently inefficient given the different types of waste he cannot remove. Additionally, as stated previously in the Lean principle, the primary cause of their issue, waste, is not eliminated, which affects how well they function in operations that are efficient and sustainable. The feasibility problem, the lean concept, and the respondents' responses all support this assertion. This claim was verified.

4.7 Conclusion

Chapter 4 provides clarification on the findings of the qualitative analysis method the researcher employed to collect data for this study. The findings and conclusions from the interviews are included in this chapter. On average, each interview lasts between 35 minutes to an hour. This interview's goal is to talk about how SMEs are interpreting and using lean logistics strategies. The data is gathered and analysed for each inquiry, with regard to the operation observation. The interview's findings are all summaries of a subject that corresponds to the investigation's objective.

CHAPTER 5

CONCLUSION

5.0 INTRODUCTION

The three-research objective on framework development will be addressed in depth in this chapter. Suggestions for change will also be addressed in future studies.

5.1 OVERVIEW OF THE STUDY

The purpose of this research is to study the lean logistics practices among the Food and beverages in SME based on the objective several objectives, such as:

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.

The Food Industry on SME in Ayer Keroh district is the focus of this report. In this study, all information on lean logistics practices among SMEs is gathered. Based on the journals and papers relevant to this report, the researcher presented an overview of SME issues and lean logistics in chapter 2. To achieve the research goals and collect data, the researcher devised a list of questions. This study relied on qualitative analysis results. The focus indepth interview method was used to collect data for this report. In chapter 4, the researcher analyzed and interpreted all the data gathered through the systematic study.

5.2. Discussion on research findings

The researcher had a transcript in the results from the previous chapter, quoting the respondents' answers to the research questions. The researcher will provide an extensive discussion of compiled data that has been analyzed to determine if the response provided has met the study objectives. The response should include the SME's implementation of lean logistics practices on food manufacturing in Ayer Keroh. To begin, the discussion should determine the SME's understanding of lean logistics. Second, it should describe the industry's existing method and lean logistics theory practices. The third point is to assess the efficiency of lean logistics in the food and beverage industry in the small- and medium-sized companies. Finally, the results should be able to define the best suggestions or tools to promote the appropriate approach and process for implementing Lean Logistics Practices in the industry.

5.2.1. Discussion on the understanding of lean logistics practices in SMEs

To make sure that no errors occur in the future, understanding is essential. In this scenario, the investigator may conclude, based upon the results of the understanding in chapter 4, that most SMEs understand only the lean logistics principle for waste and cost reduction. In addition, the researchers found that lean logistics have many advantages and significance in business and industry, which support their efficiency and prevent excessive costs. But even though they know about lean logistics meaning and principles they do not know the lean logistics and the correct process. That is because the majority of them admit it was the first time, they heard the word "lean logistics."

5.2.2. Discussion on the challenges that SMEs encounter in implementing lean logistics methods in their businesses.

In the manufacturing sector, it is important to evaluate and understand the production process and ensure that they have achieved efficiency, which means more profit and production for the least amount of working time. According to the results. The researcher discovered that most SMEs are implementing lean logistics, but they are not doing so effectively due to a lack of information about how to do so correctly. The investigator has also studied the operation of their supplier's manufacturing form before the delivery process to evaluate the respondents' declaration that they practiced lean logistics. The researcher discovered that their lean logistics processes are unsuccessful based on their observations, explanations, and statements. This is due to a lack of awareness and comprehension of the lean principles, which serve as a framework for practicing lean logistics.

Based on the current situation, the researcher found that they do not innovate and manufacture in the comfort zone in which they operated. Because the local people in their region recognized their heritage product.

Second, most SMEs adopt the past heritage style and just an additional machine for the map value stream operation, their process for creating customer values. But their manufacture of machines is not technology modified that takes place slowly in their production. In addition, even though it tried to minimize the waste, it was not practiced, and the other type of waste automatically occurred due to defective production and false details. This makes their waste 6 out of 8 kinds of waste introduced by Taiichi Ohno that is defect, waiting and motion, extra processing, unused talent, and constant repeated transportation.

Thirdly, the researchers determined that the process flow was not guaranteed smoothly by the majority of SMEs. That the waste still occurs and is not disposed of at the map value of the stream. This constantly delays and interrupts their flow. The delay and failure caused by the breakdown machine, lack of raw materials and unskilled workers.

Lastly, the aim of establishing is to ensure that the production or goods are delivered to customers on time (JIT). According to the findings, the research discovered that they often refuse to fulfil their customers' requests when there is a manufacturing defect or an inadequate supply of raw materials. This occurs during the holiday seasons.

5.2.3. Discussion on the significant of applying lean logistics practices in SMEs.

Each manufacturing sector aims and expects to achieve success in production through an efficient manufacturing process. It really depends on the current method to achieve the successful process. The researcher sees based on his results that most SMEs have not achieved the efficiency they anticipated in the manufacturing process. The investigator found out based on the finding that their method had failed since they had no production innovation to make their production specific to their competitors. In addition, the critical waste that automatically affects the other waste that occurs at the same time has not been removed. By applying the lean logistics practices in SMEs they will step out of the comfort zone and old-school style manufacturing can be depleted due to lean logistics practices and production can flow smoothly.

5.3 RESEARCH IMPLICATION

All the actions taken will either be good or bad. It will have its own implications. Then the results of this analysis will be the same. Furthermore, this research is aimed at analyzing the information from the study on lean logistic food manufacturing practices among small and medium-sized enterprises. It thus provides implication for lean logistics activities, based on the existing lean logistics framework and the results that are highlighted.

5.3.1 Training

According to the findings of finding, the researcher has mentioned that the majority of SMEs do not understand the proper lean logistics method to be practiced. In addition, the respondents also claim that unqualified workers have issues. Based on the results, the investigator believes that it is necessary to effectively enforce the training offered to its staff and SME traders. The reason is that preparation would enhance the understanding of the correct approach to lean logistics. In this situation, the SMEs will be trained by government entities associated with SME, such as MARA. SME CORP, Insken, Tekun, MPC, and Amanah Ikhtiar Rakyat are some of the government entities involved with SME (AIM). For the second time, MPC, in collaboration with SME CORP, initiated the Development Program and Lean Transformation Program for SME (PTLPKS), also known as the Creanova Program, in 2018. This is the program, MPC and SME CORP exchange of best practices in lean management projects by small and medium-sized businesses with a direct effect on their own organizations. This initiative has also succeeded in saving RM9.7 million successfully and eliminating 108 events from 59 SMEs involved in the programme.

In addition, preparation should also be given to employees. Based on the results, the respondents said their employees are unqualified and reckless in production and cause defects. According to Insider Exploring 2019, improved competitiveness and performance management, increased innovation and staff recruitment in new goods and strategies. This is in line with every manufacturing sector's dream of achieving effectiveness in its production process, especially among SMEs. If their workers are qualified and trained with high skills, a waste product defect is easily avoided, and the rate of loss indirectly reduced.

5.3.2 Innovation technology

Second, the researcher advises SME to upgrade their technology to modern innovation technology. On the basis of the findings the researcher realizes that most small and medium businesses use technology, but their systems are not modified, and certain processes are manually performed. These are the reasons why their output is a little in one day and it takes several times to complete. Because of these issues, the researchers propose that SMEs use artificial intelligence and automation to reduce their work resources in their production processes. In 2019, Malaysia Kini stated that smart manufacturing or artificial intelligence would minimize stock stocks and overhead costs of their factories by at least 20% and can go up to 70% to 80%. In addition, the inventory holding period was successfully reduced from 150 days to 70 days, helping to minimize operational costs by one of the customers implemented with intelligent manufacture technology. According to C.H. Goh in The Star papers on 2020, most SMEs are more likely to use conventional methods rather than implement new technology such as artificial intelligence (AI) and big data due to the higher cost. This demonstrates that a lack of financial capital limits their ability to use modern technologies. However, there is no doubt that they are not aware of new technologies that can assist them.

5.3.3 Government support

Governments are accountable and approved to support small and medium-sized enterprises in different areas. Government aid to SMEs can play a significant role in shaping small and medium-sized enterprises growth from time to time. The researchers propose that governments fund small and medium-sized enterprises to help them develop their industry in the future and match big and multinational companies.

The researchers first propose that the government incorporate SMEs Go Global and SCIP into small and medium-sized enterprises in a more thorough way. Since not all small and medium-sized enterprises are sensitive to government services for their needs. Here, the researcher advises that the government conduct surveys of both micro-small to medium sized enterprises and review their processes and facilities. This survey would allow the government to recognize small businesses and make the small and medium-size companies more receptive to their SME policy.

According to Alzahrin Alias in Berita Harian Online on 2020, Noor Azmi Mat Said, SME Corp's Executive Chief Executive Officer said, SME Go Global is an initiative to promote and assist the export market-enhancing SMEs. SCIP, on the other hand, is a cooperative funding effort of the government and the private sector. They want to aim 40 projects for SME Go Global through these initiatives. It provides advice on how to export their goods to small and medium-sized enterprises. In the SME Global program, SME Corp has earmarked RM20 million, and SCIP is included in the original SME Corp RM15 million fund and is being funded. This aims to increase the access of small and medium-sized enterprises to early funding. This is a start-up investment which facilitates investment through other channels for small and medium-sized enterprises.

In addition, SME Corp has concluded the Collaboration Memorandum (MOC), a technical assistance and consulting services service for Huawei Technologies Malaysia Sdn Bhd. To provide experience and technological assistance that integrates creative digital technologies in business based on artificial intelligentsia (AI) technology, Huawei will create programs for easy accommodation and deployment of SME advancement in digital initiatives.

Then, the researcher then proposes that the Government gave SMEs advice on the appropriate lean logistics approach used in their sector, based on the findings of the study. This is the perfect solution for a small business that uses lean logistics to minimize overhead in their operations. The SMEs would be trained by the government sector such as MPC, MARA, INSKEN, Tekun and AIM. According to Haryani Ngah in 2018, MPC was a good help to many of the small and medium-sized enterprises in the manufacturing and service sectors. Their achievement was in terms of the implication of teaching. This will allow the Lean Logistics Activities to be understood and SMEs to continue in the right way, as Taiichi Ohno explained.

Finally, by shifting the mindset of SMEs who rely only on their market on the domestic market, the government would help the SME. Most SMEs are only focused on Malaysia because they are not sure that their goods will enter the global market. With government funding, their thinking is more transparent, ambitious, and inspired to grow the company worldwide, supported by the government. This is also in line with two of the government's latest plans, which mention government funding in the first proposal.

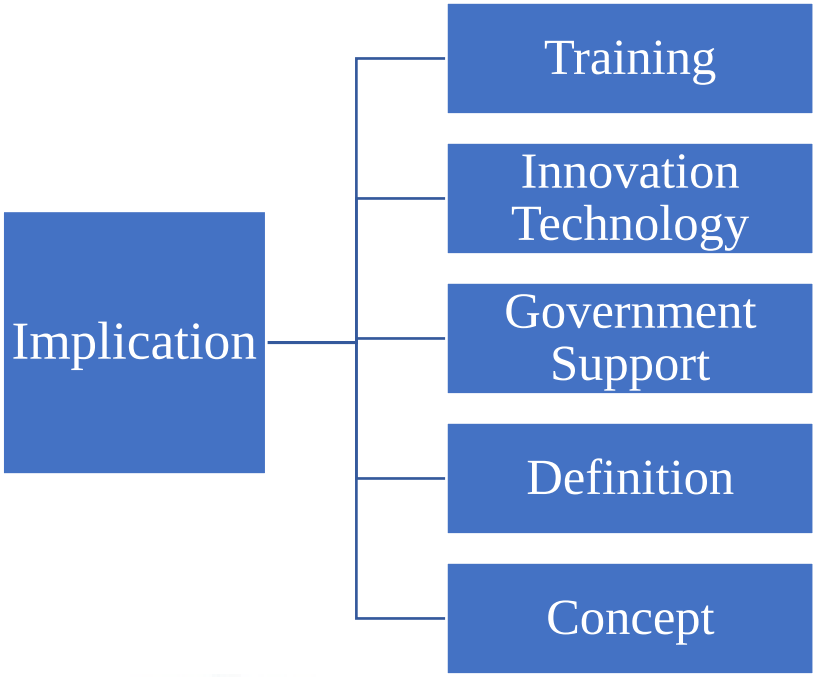


Figure 5.3.3: Framework of implication lean logistics for SME

5.4 LIMITATION OF STUDY

I. Time constraint

The thesis will need to be completed by the researcher in 13 weeks, just like it is in other 15 credit-hour topics. To focus entirely on the study would be difficult for the researchers. Due to the many businesses that closed after the Movement Control Order, interviews are difficult as well (MCO). Due to the length of the study, the researcher has difficulty persuading the company to agree to an interview because of the time commitment of the study. Many businesses do not have spare time for the researcher-related interviews.

II. Budget constraint

The researcher must make sure that the monthly income is sufficient. Throughout this investigation, a lot of money will need to be spent on various expenses. In this investigation. The researcher's budget is constrained by their monthly salary.

III. Change company and location

The researcher must choose industrial regions close to where he lives due to Post Covid-19 in Malaysia. The researcher had to locate a new sector that was close to his residence as a result. It also makes it difficult for researchers because the majority of the selected firms do not draw many outside visitors. Additionally, some SMEs are unable to sustain themselves and must close. Therefore, the researcher changes his study location to a region near his institution that has an industrial site and SMEs that accept interviews.

5.5 RECOMMENDATION FOR FUTURE RESEARCH

It is anticipated that several ideas will be made to improve and use the findings of this study. As a result, it will be used by the researcher and other academics to improve future study. Additionally, the effectiveness of lean logistics initiatives among small and medium-sized food manufacturers is a goal of the research. As a result, several suggestions have been offered to achieve this goal. The researchers advise using this analysis style. Quantitative analysis should be used in the research design by the future scientist. The goal of the study is to categorise complete small- to medium-sized businesses that experience lean logistics issues. The next researcher will also outline a variety of existing, effective, and lean logistics-related operations that do not just depend on food production using the same purpose. In addition, this report will find many small and medium-sized businesses that are the best way of implementing lean logistics practices in their market and their endeavors. The strategies offered by the respondents will serve as an inspiration and be replicated by other small and medium-sized companies. Many small and medium-sized enterprises will also be found in this analysis to be the best at implementing lean logistics practises in their own markets and undertakings. Other small- and medium-sized businesses will be inspired by and adopt the strategies put out by the respondents.

5.6 CONCLUSION

In conclusion, all of the study's objectives were successfully satisfied by the analysis approaches, which included a literature review, observation, interviews, record review, and empirical evidence. Additionally, the investigator successfully finished the analysis in the allotted time. Additionally, the researcher will discuss the study's flaw in this chapter. The conundrum encourages researchers to ascertain whether or not the objective was accomplished.

The researcher concluded by suggesting and advising that future studies should advance the research for it to reach a new level. As a result, this analysis is crucial since it outlines the main justification for why this study was done and why the material needed to be investigated for the researcher to continue their work even further in the future.

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APPENDICES

APPENDIX A: INTERVIEW PROTOCOL

SEMI-STRUCTURED INTERVIEW PROTOCOL

Project Title:

FOOD MANUFACTURING LEAN LOGISTICS PRACTICES IN SMEs

Investigators:

NAME OF STUDENT: MUHAMAD NORA'ZIZI BIN AZURIN

EMAIL ADDRESS:

PHONE NUMBER:

NAME OF SUPERVISOR: DR. MURZIDAH BINTI AHMAD MURAD

EMAIL ADDRESS:

Date:_____ Interviewer: Muhamad Nora'zizi Bin Azurin

Respondent:_____ Respondent position: _____

Semi-structured Interview Guide

- Room setup – locate in a quiet place to improve the recorded sound quality. The interview may be conducted at the interviewee's office or premise (to suit the interviewee's convenience).

- Request permission from interviewee to record the conversation.

- Explain to the interviewee his / her right to refuse to answer any question and to terminate the interviewat any time without having to provide an explanation.
- Explain to the interviewee that the survey confidential, neither the organization identity nor theiridentity will be revealed.
- Provide an overview of the project and why the researcher is speaking with the interviewee.
- Start conversation by having the interviewee describes their role in the organization's technology decision making, ask about new industrial manufacturing technology they recently adopted and implemented in their organization, and ask their knowledge about the national policies of technology diffusion.

- **Introduction**

This research aims to find out Food Manufacturing Lean Logistics Practices in SMEs. This research is being conducted by the Universiti Teknikal Malaysia Melaka.

Before agreeing to take part in this research it is important that you understand why the research is being done and what it involves. Please read the following information carefully.

Your participation in this research is voluntary. You can withdraw from the study at any time and can refrain from answering any question. The information provided by you remains anonymous. This means that you will not be identified in the results. All information you provide will be treated as confidential. This means that it will not be passed on to anyone else in any way that could identify you.

The information you provide will be analysed by us and what you say might be presented as a direct quotation in a report or academic paper but not in a way that could identify you. The data collected for this project will be stored by us on a computer network accessible only with the use of a password or in a locked and secure cabinet. Where personal information is collected it will be treated in strict confidence and your personal information will not use in the results. Only aggregate analysis will be used for publication. If you would like more information about the project you can write, telephone, or email the principal researcher

- **Interview questions**

1. Based on your understanding, what is lean logistics?
    i. Does eliminating waste in logistics and focusing on creating value same as lean logistics?

2. Did you know the lean logistics importance to the organization?
    i. Does lean logistics increase product flow and speed?
3. What are the functions of lean logistics that you implement?
    i. Does the Lean concept really help?
4. Did you facing any problem throughout the lean logistics being implement?
    i. Does it affect the organization?
5. How the effectiveness impacts your business?
    i. How it can help to optimize supply chains?
6. Ask if the interviewee have any additional thoughts or comments.
7. Thank the interviewee for taking the time to speak with you, ask the interviewee to contact you if they have any more thoughts on the topic. Ask permission to contact them if you have any questions,get a card.

CONSENT FORM

PLAIN LANGUAGE STATEMENT

UNIVERSITY **UNIVERSITI TEKNIKAL MALAYSIA MELAKA**
FACULTY **FPTT**

Name of Participant: _____
Project title: Food Manufacturing Lean Logistics Practices in SMEs

Interviewer name: Muhamad Nora'zizi Bin Azurin Phone no.: __

Interviewee name: _____ Phone no.: _____

1. I have received a statement explaining the interview involved in this project.
2. I consent to participate in the above project, the particulars of which - including details of the interviews have been explained to me.
3. I authorise the investigator or his or her assistant to interview me.
4. I give my permission to be audio taped: Yes ___ No ___
5. I give my permission for my name or identity to be used: Yes ___No ___
6. I acknowledge that:
    a. Having read the Plain Language Statement, I agree to the general purpose, methods and demands of the study.
    b. I have been informed that I am free to withdraw from the project at any time and to withdraw anyunprocessed data previously supplied.
    c. The project is for the purpose of research and/or teaching. It may not be of direct benefit to me.
    d. The privacy of the information I provide will be safeguarded. However, should information of aprivate nature need to be disclosed for moral, clinical or legal reasons, I will be given an opportunity to negotiate the terms of this disclosure.
    e. The security of the research data is assured during and after completion of the study. The datacollected during the study may be published, and a report of the project outcomes will be provided to_____(researcher to specify). Any information which may be used to identify me will not be used unless I have given my permission (see point 5).

Participant's Consent

Name: _____ Date: _____

(Participant)

Name: _____ Date: _____

(Witness to signature)

Where participant is under 18 years of age:

I consent to the participation of_____in the above project.

Signature: _____Date: _____

(Signatures of parents or guardians)

Gantt Chart of Final Year Project (FYP) 1

WEEK/ ACTIVITIES	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
FYP talk									MID SEMESTER BREAK							
Search for FYP topic																
Meeting with supervisor																
Topic discussion																
Title confirmation																
RO & RQ Construction																
Submission Chapter 1																
Submission Chapter 2																
Submission Chapter 3																
First draft of FYP 1																
Submission of FYP 1																
Presentation 1																
Revised of FYP 1																

Gantt Chart of Final Year Project (FYP) 2

WEEK/ ACTIVITIES	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Create Questionnaire									M I D S E M E S T E R B R E A K							
Distribute Questionnaire																
Collect Questionnaire																
Analysis Data																
Submission Chapter 4																
Submission Chapter 5																
Proposal Correction																
Slide Preparation																
Submission of FYP 2																
Presentation 2																