



CHALLENGES IN SUPPLY CHAIN STRATEGY AND LOGISTICS PERFORMANCE IN  
ONE OF THE SUGAR FACTORIES IN NORTHERN MALAYSIA

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## DECLARATION OF ORIGINAL WORK

I hereby declare that all the work of this thesis entitled “**CHALLENGES IN SUPPLY CHAIN STRATEGY AND LOGISTICS PERFORMANCE IN ONE OF THE SUGAR FACTORIES IN NORTHERN MALAYSIA**” was 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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## ABSTRACT

Today's business progress is one of the factors that contribute to the economic progress of a country up to the level of globalization. In the study of supply chain strategy challenges and logistics performance in one of the sugar factories in northern Malaysia, a research was conducted to understand the issues they face in supply chain and logistics and to achieve the objectives of the study. Several issues have been analysed for the common good, among these issues are internal challenges in managing inventory, external challenges in terms of product supply, and the impact of competition in logistics services. There are several internal challenges in terms of inventory management namely stock, maintenance, and information. External challenges in terms of product supply are damaged and contaminated product packages, and ineffective controls in action to prevent these issues from occurring. The impact of competition on logistics services in sugar mills affects the lack of transportation, production slows down and penalty payments are imposed. The methodology used for this study is in the form of qualitative data methods which are interviews and discussions to facilitate the researcher to conduct the study directly with the relevant parties in the factory. The results of the study can examine the issues that are the topic of discussion and get answers that meet scientific expectations.

Keywords: Supply chain strategy, logistics performance, challenges in supply chain strategy and logistics performance, sugar factory.

## ABSTRAK

Kemajuan perniagaan masa kini merupakan salah satu faktor yang menyumbang kepada kemajuan ekonomi sesebuah negara sehingga ke tahap globalisasi. Dalam kajian cabaran strategi rantai bekalan dan prestasi logistik di salah sebuah kilang gula di utara Malaysia, satu penyelidikan telah dijalankan untuk memahami isu yang mereka hadapi dalam rantai bekalan dan logistik serta untuk mencapai objektif kajian. Beberapa isu telah dianalisis untuk kebaikan bersama, antara isu ini ialah cabaran dalaman dalam menguruskan inventori, cabaran luaran dari segi penawaran produk, dan kesan persaingan dalam perkhidmatan logistik. Terdapat beberapa cabaran dalaman dari segi pengurusan inventori iaitu stok, penyelenggaraan, dan maklumat. Cabaran luaran dari segi pembekalan produk ialah pakej produk yang rosak dan tercemar, dan kawalan yang tidak berkesan dalam tindakan untuk mengelakkan isu ini daripada berlaku. Kesan persaingan terhadap perkhidmatan logistik di kilang gula menjejaskan kekurangan pengangkutan, pengeluaran menjadi perlahan dan bayaran penalti dikenakan. Metodologi yang digunakan untuk kajian ini adalah berbentuk kaedah data kualitatif iaitu temu bual dan perbincangan bagi memudahkan pengkaji menjalankan kajian secara terus dengan pihak berkaitan di kilang. Hasil kajian dapat meneliti isu-isu yang menjadi topik perbincangan dan mendapatkan jawapan yang menepati jangkaan saintifik.

Kata kunci: Strategi rantai bekalan, prestasi logistik, cabaran dalam strategi rantai bekalan dan prestasi logistik, kilang gula.

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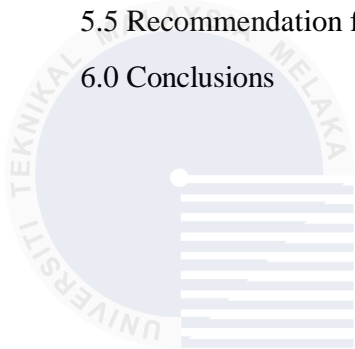
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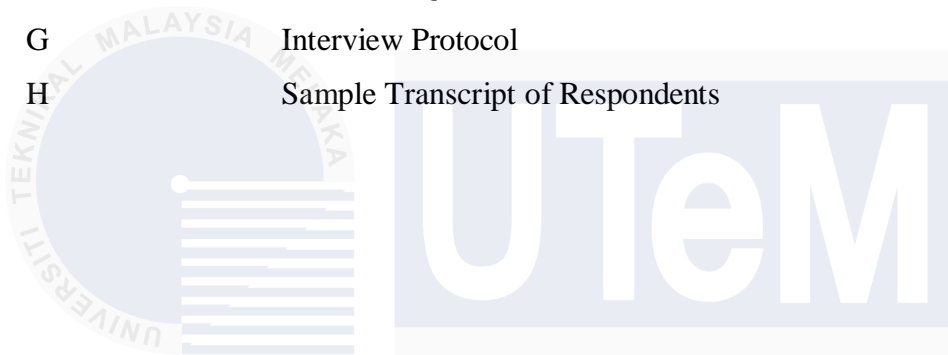
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# CHAPTER 1

## INTRODUCTION

### 1.0 Introduction

A study was conducted to examine the challenges of supply chain strategy and logistics performance in one of the sugar factories in northern Malaysia. In this introduction, there is the background of the study, problem statement, research objectives, research questions, expected outcomes, and the significance of the study.

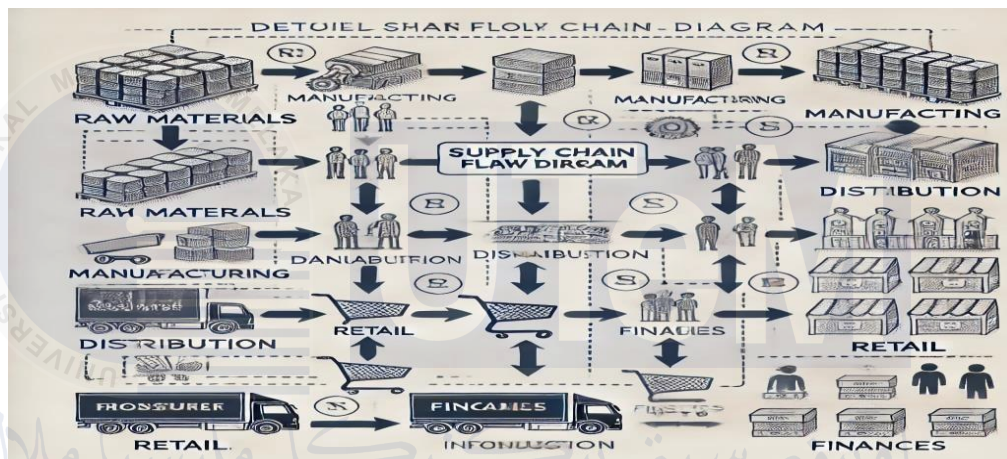


Figure 1: Flow of Supply Chain Management

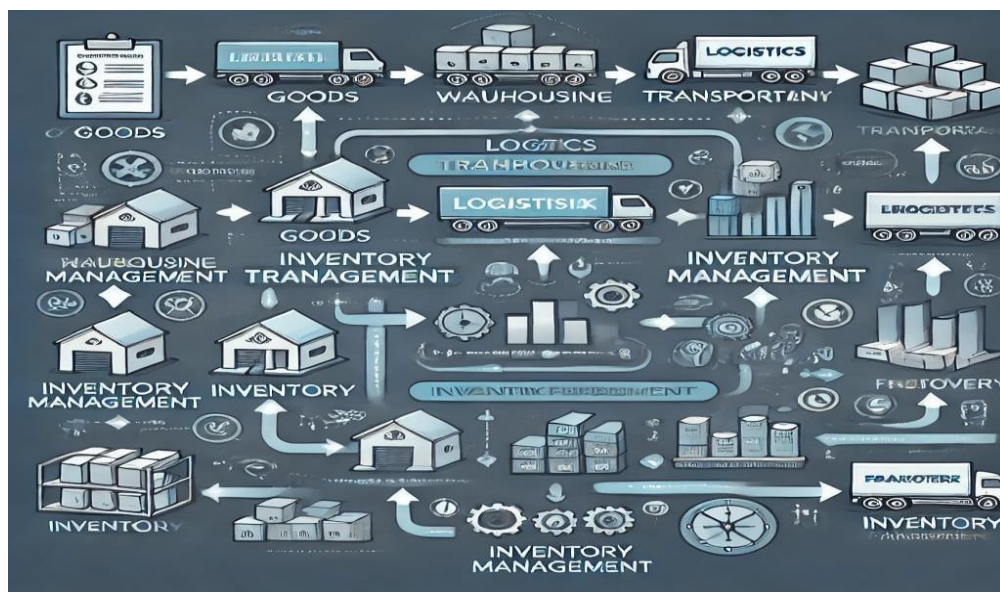


Figure 2: Flow of Logistics Management

## **1.1 Background of the study**

The rapid development of the business sector is one of the factors that contribute to progress, especially in terms of the world economy today. Successful businesses have strategies and constraints that they face. This study aims to analyse the challenges of supply chain strategy and logistics performance in one of the developing factories in North Malaysia. This factory is a white sugar and brown sugar processing factory where brown sugar is processed using foreign raw material sources and then processed into finished products, while white sugar is managed by this factory itself from raw materials to pre- finished products and finished products and continues to be sold to customers. This study investigated the challenges of supply chain strategy and their performance logistics so that researchers can understand them more deeply. The problem studied is very suitable for researchers who are students in the field of supply chain and logistics to explore and learn more.

Since the 1990s, supply chain management (SCM) has been the focus of research and practical application in enterprise management worldwide. SCM is a set of actions related to the planning, coordination, and control of materials, parts, and finished goods from suppliers to customers. The supply chain also serves as a network tool that allows enterprises that produce raw materials to produce semi-finished or final products and deliver them to customers. According to the definition of the American Supply Chain Council, SCM "encompasses every effort involved in producing and delivering the final product, from the supplier's supplier to the customer's customer." Managing the flow of materials and products from source to consumer is known as the art of SCM. SCM is also a management model that connects suppliers, manufacturers, distributors, retailers, and end users through the flow of feed-forward information, feedback materials, and information. Different from supplier management, SCM is a new management approach that combines various enterprises to improve overall supply chain efficiency. (Hui Fang, Fei Fang, Qiang Hu, & Yuehua Wan, 2022)

The network of services that support the physical movement of goods is known as logistics. Cross-border trade becomes easier with it through various functions such as transportation, warehousing, brokerage, express delivery, terminal operations, and information management. Traders' access to effective logistics networks is therefore essential to a country's ability to trade with other countries. In every economy, logistics depends on public sector services, interventions, and policies. Regulatory services, the

provision of transport infrastructure, the implementation of controls, especially for international products, and the level of public-private partnerships are among these characteristics. (Sule Onsel Ekici, Ozgur Kabak & Fusun Ulengin, 2019)

However, logistics is part of the supply chain and focuses on certain elements, such as storage and transportation. Logistics is a term that refers to the management of the flow of goods and services that starts at the point of origin and ends at the final destination. It improves the transfer and storage of goods and the distribution of products. Logistics focuses on things like transportation, storage, stock management, warehouse management, and delivery coordination.

The sugar factory chosen as my place of study is a factory that has been standing for more than five decades. This factory has established itself as a manufacturer of quality sugar products in Malaysia in the preparation of the final product, which is the best-refined sugar as a special sweetener. Sweeteners for customers such as wholesalers, retailers, food services such as restaurants and culinary professionals as well as many other types of users of these sweeteners are among those provided by this factory. Brown sugar processing, which uses imported and refined raw materials is dedicated to raising awareness of the need for Malaysians to consume sugar responsibly and to reveal to us that brown sugar is healthier than white sugar while upholding health-conscious precautions. Through the products offered, the business hopes to provide customers with better and healthier solutions to support a healthy lifestyle. To maintain a balanced and healthy diet.

Researchers are interested in doing research here, starting from the raw materials taken from the port to the entire cycle chain involved in developing the product. The researcher also found some internal problems in terms of supply chain and logistics that the business was going through, these issues interfered with the supply chain strategy and logistics performance of this factory. Among the issues are internal challenges in managing inventory, external challenges in terms of product supply, and the impact of competition from logistics services. There are several internal challenges in terms of inventory management namely stock, maintenance and information. External challenges in terms of product supply are damaged and contaminated product packaging and less effective controls in action to prevent these issues from occurring. The effect of the logistics service competition that takes place in this factory has an influence on the lack of trucks, production is slowed down and penalty fees are imposed.



## 1.2 Problem statement

The factory is a thriving factory with many branches, but it is also struggling with internal problems of its own. There are several problems that the researcher wants to study in this study, and this problem is a problem that they themselves face. Among those issues are internal challenges in managing inventory, external challenges in terms of product supply, and the effects of competition from logistic services. There are several internal challenges in terms of inventory management, namely stock, maintenance and information. External challenges in terms of product supply are damaged and contaminated product packages and less effective controls in actions to prevent these issues from occurring. The effect of the logistics service competition that occurred at this factory has an influence on the lack of trucks, production becomes slow and penalty fees are charged.

Managing inventory procurement and sourcing can be a difficult challenge for some companies. Effective stock management, storage and preparation are among these challenges. This sugar factory often faces difficult problems related to inventory, especially in terms of stock that is uncertain. The stock is at a high level so there is not enough storage space in the warehouse, the stock is also sometimes reduced and the stock runs out as a result of several factors. Furthermore, there are some equipment, machines such as boilers for example that need to be repaired in the warehouse, factors such as maintenance costs that exceed the budget and insufficient time make the maintenance process stagnate. Receiving information only from HQ causes a lack of communication. These are all internal problems in terms of inventory faced by this factory.

The second problem is about product quality, this is an external challenge that exists and is faced by this factory. Among the problems related to the supply of this product include damaged and contaminated product packaging. However, the factory has carried out several proactive initiatives as an effort to overcome this problem, but this control has not been effective so far. The problem of the quality of this product is a serious problem and needs to be studied to guarantee the quality before being sold to customers so that the factory's performance is always at its best.

The problem in terms of the effect of logistics service competition on this factory is related to the lorries that run the logistics service at the port that are hired to bring raw sugar out of the ship and take it to the factory. However, these lorries emphasize a worthwhile offer to carry out the work, therefore this ship carrying raw sugar faces a problem when it cannot offer a higher price offer compared to other ships for example such as corn ships

that offer a better price. This has a profound effect that affects the entire production, among the effects that occur are lack of transportation, slow production and penalty payment.

### **1.3 Research Objectives**

The objective of the study is to give an overview of the direction of the study which is the goal of the study. This objective needs to be achieved because it is the main pillar of the study:

- 1) To identify internal process challenges in inventory management by one of the sugar factories in northern Malaysia.
- 2) To identify external challenges in terms of product supply in one of the sugar factories in northern Malaysia.
- 3) Reveal the effect of competition on one of the sugar factories in northern Malaysia.

### **1.4 Research Questions**

This study attempts to answer the following research questions:

- 4) What are the internal process challenges in inventory management in one of the sugar factories in northern Malaysia?
- 5) What are the external challenges in terms of product supply in one of the sugar factories in northern Malaysia?
- 6) What is the effect of competition on one of the sugar factories in northern Malaysia?

### **1.5 Expected outcomes**

The researcher hopes that the research conducted achieves the objective of this study, which is the study of internal issues in terms of inventory, external issues in terms of product supply, and the effect of competition in logistics services faced by this sugar factory. The researcher hopes that the research carried out will yield results that can benefit various parties by understanding the exploration and analysis of the issues revealed and can be taken as new knowledge. Finally, the researcher also hopes that this study can be a useful scientific material for reference in this field in the future.

### **1.6 Significance of the study**

In the context of globalization and increasing economic growth, it is important to study the supply chain and logistics in business so that we can better understand the progress of the business along with the constraints it faces. In addition, every business necessarily has a supply chain and logistics, supply chain and logistics are two important processes that are important to every business. A smooth supply and logistics chain in business allows business to run smoothly and progress so that it becomes one of the factors that contribute to the progress of the country's economy. This study can also have an impact on the academic community and be used as a reference by various parties. So, it can have great implications for research, the academic community and other communities interested in knowing it.

Furthermore, with the dynamic changes in the market that are uncertain and changing according to current developments, this organization itself or other references need to identify the problem and the impact on the problem. Preparation for the diversity of logistics and supply chain approaches is recommended after knowing this problem in order to be able to meet the needs of customers and to be able to launch the production of products because it is important for the economy especially. The focus of the study is on issues that interfere with strategy and performance in the supply chain and logistics of these factories even though they have done their best. This practice includes presenting issues for analysis for guidance and mutual learning.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

In the economic world, the challenge of supply chain strategy and logistics performance is an action that needs to be studied because it is an important issue in the business world, ignoring the challenges faced without a study can invite harm to the business. This chapter reviews the existing literature from a variety of articles on the challenges of supply chain strategy and performance logistics. By examining various related studies, each section of this chapter provides a comprehensive overview of how the challenges of supply chain strategy and logistics performance affect the business cycle.

#### **2.1 Supply chain management strategy**

Supply chain management is a holistic enterprise-centered foundation. It starts with the procurement of raw materials, the manufacture of the final product, and then through the enterprise's sales system onward to the transportation network to deliver the finished product to each customer at the right time. Material suppliers, manufacturers, distributors, wholesalers, and retailers are all parties involved in supply chain management. SCM is holistic and focuses on strategic collaborative management, in contrast to conventional management models. In addition, SCM can optimize and integrate resource benefits among member enterprises in the supply chain. Therefore, SCM often makes the most of each company's internal and external resources and improves overall competitiveness. All actions involved in the sourcing, production and delivery of products are combined and coordinated in a supply chain management (SCM) strategy. The goal is to increase efficiency, reduce costs, and provide customers with a higher level of satisfaction. Supplier relationship management, inventory control, logistics and demand forecasting are some of the common parts that make up an effective SCM strategy. (Hui Fang, Fei Fang, Qiang Hu & Yuehua Wan, 2022)

In addition, the goal of SCM is not only to ensure that various market developments are realized and provided, but also to provide end customers with high-quality services and make them satisfied. Overall, contrary to vertical integration, SCM combines global strategy management with high flexibility and quick market response in a complex and dynamic competitive environment. SCM is complex and constantly

changing because many organizations are managed and integrated. SCM limitations apply mainly during the application process. For example, SCM management becomes more difficult because of both conflicting interests with suppliers and clear competition among enterprises. (Hui Fang, Fei Fang, Qiang Hu & Yuehua Wan, 2022)

Companies must create strategic capabilities to manage their supply chains. The overall capabilities of the corporation should determine its strategic capabilities, and each supply chain process should have specific operational capabilities. Operational capability and competitive capability of related companies. SCM decisions should be aligned with the company's capabilities and strategy. There is no consistency in previous studies on the part related to the relationship between the supply chain's operational capabilities and the company's competitive capabilities. The failure to empirically examine the role, existence, and expected benefits of SC operational capabilities and corporate competitive capabilities to increase the likelihood of successful firms is the cause of the inconsistency of the relationship between SC operational capabilities and the company's competitive capabilities. (Jopinus Saragih, Adrian Tarigan, Elba Frida Silalahi, Jumadiyah Wardati & Ikbar Pratama, 2020)

To remain competitive in the market, companies must use a long-distance business strategy. Business strategy is the plan a company makes to achieve its long-term goals, how it plans to achieve them, and how it plans to differentiate itself from competitors. Business strategy should leverage core competencies, or business strengths, and think carefully about the market. Supply chain strategy consists of ongoing plans and management for the design and management of each supply chain decision that supports the business strategy. It is important to take into account that the design of the supply chain should vary according to how the business wants to compete in the market. Companies must adapt their supply chain to meet their business strategy, meet customer needs, leverage company strengths, and remain competitive. Supply chain strategy and business strategy are interconnected in the direction of achieving business goals. (Nada R. Sanders, 2020)

## 2.2 Logistics performance

The goal of logistics is to ensure that the production process runs efficiently and effectively from the beginning to the end user by prioritising the quality required by the user and ensuring reliable information and flexibility to meet customer needs. In a longer perspective, the systemic approach to measuring logistics performance categorises measurements into three basic categories, namely utilisation, productivity, and effectiveness. Logistics operators deal with competitive production criteria such as cost, quality, speed, and flexibility. Measures of utilisation and productivity indicate the rate of input use, and measures of effectiveness indicate the quality of the product. The logisticians present speed as a delivery performance, which is usually measured based on the reliability of the promised deadline and the duration of the deadline. The process is in terms of mix and volume production for flexibility. Also prioritising quality and cost as important factors in competition. (Lucas de Oliveira Santos, Denilson Ricardo de Lucena Nunes, Andre Cristiano Silva Melo, Mariana Pereira Carneiro & Vitor William Batista Martins, 2020)

Logistics is not just transportation, it includes warehouse management, inventory management, and material control. By combining and managing the flow of inputs to produce goods and services, logistics provides an important component of supply chain management and helps speed up production and export processes. Therefore, logistics can be an important component in building relationships for business growth. Therefore, it is important to include logistics aspects in the analysis of business growth relationships up to the export level because better logistics performance is likely to increase output and productivity in the supply chain of raw materials and finished goods. The logistics system is increasingly recognised as one of the main contributors to recent economic growth. The national economy is connected to the global economy through logistics services, which link sectors. By creating employment opportunities, increasing income, and facilitating foreign investment, the logistics industry plays an important role in the country's economic growth. In addition, it is important to increase the competitiveness of the sector and the company because, today, all industries depend on logistics. (Chor Foon Tang & Salah Abosedra, 2019)

Empirical studies must rely on proxy measures for logistics activities because logistics includes various activities, such as intermodal transportation, storage, customs

clearance, and information and communication technology, among others. Therefore, it is difficult to measure the performance of logistics activities. (Unal Tongur, Kemal Turkcan, & Seda Ekmen-Ozcelik, 2020)

Since its release in 2007 and publication every two years thereafter, the World Bank's Logistics Performance Index (LPI) has raised awareness of the importance of a country's logistics performance. The LPI comes from a survey of ground operators worldwide, including express carriers and global freight forwarders. This index evaluates the country's logistics performance based on six basic indicators. These are the efficiency of customs and border management, the quality of transport infrastructure and trade, the ease of arranging international shipments at competitive prices, the efficiency and quality of logistics services, the ability to track and trace consignments, and the frequency with which shipments reach consignees in transit. The components have been selected based on theoretical and practical studies, as well as the experience of logistics professionals in the international delivery of goods. (Sule Onsel Ekici, Ozgur Kabak & Fusun Ulengin, 2019)

### **2.3 The actual supply chain strategy and logistic performance faced by one of the sugar factories in northern Malaysia were studied by the researcher.**

#### **2.3.1 Supply chain management strategy**

This sugar refinery factory uses a multifaceted supply chain strategy to improve its sustainability and logistics performance. First of all, Innovation and Technology, the factory produces sugars such as "Better Brown" and "Commercial Brown" in collaboration with technology partner Nutrition Innovation. These innovations not only meet the needs of health-conscious consumers but also help them achieve their sustainability goals. The partnership allows the factory to take advantage of innovative sugar refining technology, which improves product quality and operational efficiency.

Through its VIVE program, it then emphasizes sustainable practices by increasing the social and environmental impact of its supply chain. This includes using raw materials responsibly and optimizing production processes to reduce energy consumption and waste.



Finally, market growth has allowed them to increase their local manufacturing capacity to meet increased demand in both local and international markets, such as Singapore and the Middle East. A stronger and more responsive supply chain that can handle more volume and diverse needs is created by this addition.

### **2.3.2 Logistics performance**

This local factory is capable of producing up to 8,000 tons of sugar per month, based on capacity and production. This large capacity ensures consistent supply to meet market demand and helps the sugar refinery's strategy to enter new markets. This local factory, with its local facilities, is capable of producing up to 8,000 tons of sugar per month based on capacity and production. This large capacity ensures consistent supply to meet market demand and helps sugar refining strategies enter new markets.

Next, the logistics performance of these sugar refineries includes strategic cooperation with suppliers and exporters, as shown by their trading activities. This includes import and export efficiency. For example, imports from countries such as Vietnam and India are well managed to ensure timely and cost-effective procurement of raw materials. Advanced data analytics is the next component in logistics performance, which uses data analytics to monitor and optimize its supply chain activities. Monitoring trade value, delivery flows, and supplier performance are among these, which enable intelligent decision-making and improve overall logistics efficiency.

The sugar refinery has developed a robust supply chain strategy by incorporating innovative technologies, increasing production capacity, and focusing on sustainable practices. This strategy improves logistics performance, ensures high-quality products, and increases market competitiveness.

## **2.4 Common challenges in supply chain strategy and logistics performance in sugar sector**

Understanding each problem that arises in the sugar supply chain can help in the solution and efforts to improve the performance of the sugar industry. Some of the issues that the sector often faces include legal issues such as the monthly release



mechanism, season declaration, value-added tax (VAT), minimum support price (MSP), political pressure, and procurement price. Next, infrastructure and technical challenges come from globalisation, high production costs, accumulated losses, a low return on capital, crushing capacity, labour, and many other stakeholders or participants. Next, natural issues include regional inequality, the production of raw materials such as damaged sugarcane, and prolonged rains. (Regasa Bedada, 2022)

The agroindustry is vulnerable to climate change and variability, which impacts transportation, processing, production, harvesting, and marketing. Downstream risks, such as an oversupply in global sugar production that could lower sugar prices and increase the country's volume imports, must be taken into account by sugarcane supply chain stakeholders. Therefore, risk management must be used to reduce upstream and downstream risks in the supply chain. (Muhammad Asrol, Marimin, Machfud, Mohamad Yani & Eizo Taira, 2021)

Recent issues The Indonesian sugar industry cannot meet the basic needs of society. This is due to reduced production capacity, decreasing acreage of sugarcane plantations, and inefficient sugar mills. Although there are both state-owned and private companies managing the country's sugar industry, state-owned companies are far more efficient and produce lower-quality sugar with smaller capacity, older equipment, and are overstaffed. Operations for 150 days a year. (Prasis Nursyam Suhardini & Sudjatno Djumilah Hadiwidjojo, 2021)

The sugar industry, managed by the private sector, is now growing by prioritising green technology and environmentally friendly ideas to increase the country's sugar production. From planting, cutting, transportation, and processing, private sugar mills have a comprehensive management system. However, since state-owned sugar mills do not own land, the supply of sugar cane depends on sugar cane farmers. These sugar factories require many different activities, such as planting, cutting, transporting, and grinding, because the management on the ground is different from the management of the mill. As a result, any problem that arises at one point will affect other parts of the supply chain. Efficiency, diversification, and optimisation (EDO) are the three main factors that shape the competitiveness of the country's sugar industry. Lean and green supply chain management are now better options. The purpose of the systems approach is to increase value for all members of the supply chain by improving the quality of products and services while at the same time reducing waste that can pollute the environment. (Prasis Nursyam Suhardini & Sudjatno Djumilah Hadiwidjojo, 2021)

Much of the global sugar industry has cooperated. However, sugar stakeholders recognise that it is challenging to maintain effective supply chain collaboration. Certain factors still need to be researched and represented in a robust model. This includes the parties involved in both types of collaboration, what they collaborate on, what to consider, and how they work together to achieve a high level of collaboration. Without examining each of these aspects, the quality of collaboration is challenging to quantify. (Wike Agustin Prima Dania, Ke Xing & Yousef Amer, 2019).

A study found that the Kenyan economy is helped the most by the sugar industry. The sector has faced several problems in recent years, such as low capacity utilization, factory inefficiency and high production costs compared to other countries in the world. Given this issue, businesses have come up with new ways to improve their operations, such as investing in information technology integration across the sugar supply chain. The three main businesses in the sugar industry are production, processing and distribution, which make up the industry's value chain. To rapidly increase the competitiveness of sugar manufacturing firms, all parties involved in the sugar sector's supply chain need a holistic approach. (Omondi Joshua A, 2019)

## **2.5 The real challenge faced by one of the sugar factories in northern Malaysia that the researcher studied**

The researcher has learned about the real challenges faced by this sugar refinery while conducting a study under the title "challenges in supply chain strategy and logistics performance in one of the sugar factories in northern Malaysia." The real challenge encountered by the researcher while doing research in the factory is that the researcher was told that there is a problem. Among those issues are internal challenges in managing inventory, external challenges in terms of product supply, and the effects of competition from logistic services. There are several internal challenges in terms of inventory management, namely stock, maintenance and information. External challenges in terms of product supply are damaged and contaminated product packages and less effective controls in actions to prevent these issues from occurring. The effect of the logistics service competition that occurred at this factory has an influence on the lack of trucks, production becomes slow and penalty fees are charged.

Managing inventory procurement and sourcing can be a difficult challenge for some companies. Effective stock management, storage and preparation are among these

challenges. This sugar factory often faces difficult problems related to inventory, especially in terms of stock that is uncertain. The stock is at a high level so there is not enough storage space in the warehouse, the stock is also sometimes reduced and the stock runs out as a result of several factors. Furthermore, there are some equipment, machines such as boilers for example that need to be repaired in the warehouse, factors such as maintenance costs that exceed the budget and insufficient time make the maintenance process stagnate. Receiving information only from HQ causes a lack of communication. These are all internal problems in terms of inventory faced by this factory.

The second problem is about product quality, this is an external challenge that exists and is faced by this factory. Among the problems related to the supply of this product include damaged and contaminated product packaging. However, the factory has carried out several proactive initiatives as an effort to overcome this problem, but this control has not been effective so far. The problem of the quality of this product is a serious problem and needs to be studied to guarantee the quality before being sold to customers so that the factory's performance is always at its best.

The problem in terms of the effect of logistics service competition on this factory is related to the lorries that run the logistics service at the port that are hired to bring raw sugar out of the ship and take it to the factory. However, these lorries emphasize a worthwhile offer to carry out the work, therefore this ship carrying raw sugar faces a problem when it cannot offer a higher price offer compared to other ships for example such as corn ships that offer a better price. This has a profound effect that affects the entire production, among the effects that occur are lack of transportation, slow production and penalty payment.

## 2.6 Conceptual Framework

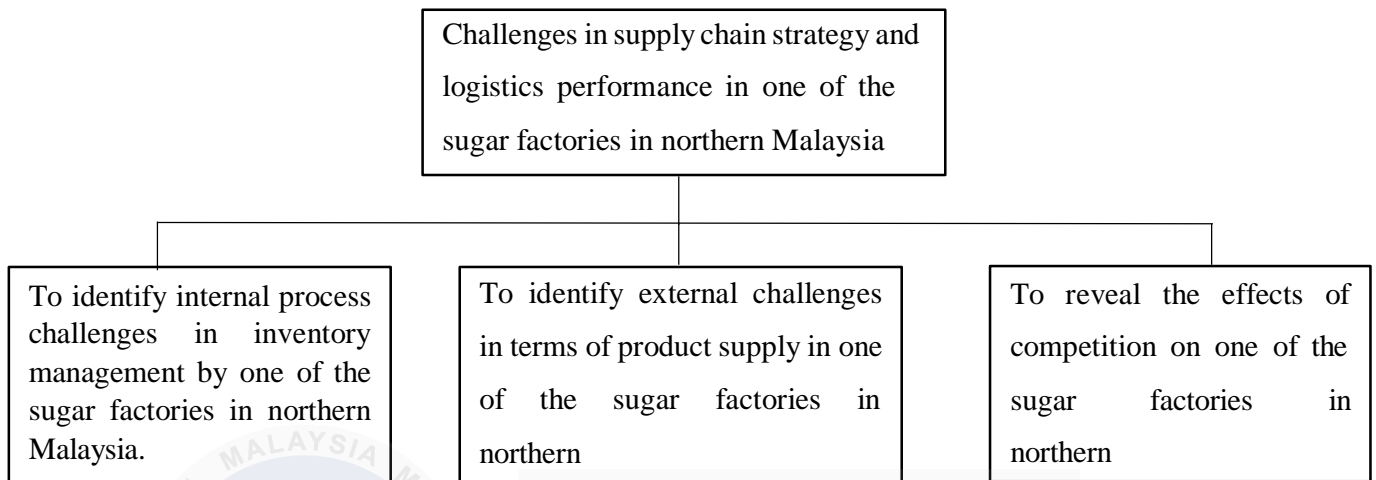


Figure 2.6: Conceptual Framework

## 2.7 Conclusions

Based on the literature review that has been done, it can be concluded that the challenge of supply chain strategy and logistics performance is a key aspect that is important in the business cycle and has a great influence on an organization. Therefore, this study can give a clear picture of its relevance.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This section explains the research design is a qualitative study, the data collection method is a semi-structured interview and discussion and data analysis using thematic analysis. All these methods were used to study the challenges and effects of supply chain strategy and logistics performance in a sugar factory in northern Malaysia.

#### 3.2 Research Design

This study uses a qualitative research design, the researcher was able to gather very detailed information about the internal and external challenges and impacts faced by these sugar mills by using this methodological approach. This study is exploratory and aims to uncover patterns, underlying issues, and motivations. The research design is flexible and adaptable, as this study is an exploration of the highlighted topic. Qualitative research explores and provides a deeper perspective on issues that exist in the real world. Participants' experiences, perceptions and behaviours are collected in qualitative research. It's not about how many respondents gave answers in support of the given question, but how and why a highlighted topic happened. It can be structured as a stand-alone study, relying entirely on qualitative data, or as part of mixed methods research, where quantitative and qualitative data are combined. Readers are introduced to the basic concepts, definitions, terms and applications of qualitative research in this study. (Tenny, S., Brannan, J. M., & Brannan, G. D, 2022)

In general, qualitative research is usually used to help researchers gain a deep and comprehensive understanding of a phenomenon. This research includes many things, such as generating information that can be used in practice, providing detailed descriptions of specific practice issues, providing perspectives on professional practice in specific contexts, and addressing issues related to the subjective nature of qualitative research. The potential for conducting qualitative research is great, but it depends on the researcher's ability to perform a basic, thorough analysis. (P. Delgado Hito & M. Romero Garcia, 2021)

A systematic and subjective approach to describing and understanding lived experience is called qualitative research. These types of techniques are used for a

variety of purposes including gaining a deeper understanding of a phenomenon or situation, examining the depth, complexity of a phenomenon, generating emergent or data-driven theories, understanding human experiences, processes or group cultures and how those experiences are experienced by those who make them up. Therefore, it focuses on both the effects of the natural conditions in which humans interact and communicate and how the surrounding conditions affect the actions or events that occur. Values are also taken into account, which affects theory, model building, and problem analysis. (Jessica Nina Lester, Yonjoo Cho & Chad R. Lochmiller, 2020).

### **3.2.1 Qualitative Research**

Direct and indirect observation, open-ended interviews, and document analysis from participants are some of the techniques used in qualitative research. In order to meet the expectations of this study, this method helps the researcher obtain comprehensive and detailed information about the focused topic. Qualitative inquiry differs in that it is conducted in a natural setting, uses the researcher as the primary data collection tool, and emphasizes in-depth description to obtain rich, in-depth data that explains patterns of behaviour and everyday meaning. It prioritizes the voice and lived experience of the subject rather than the outcome alone, it focuses on the social process and the relationship between the researcher and the interviewee. A qualitative research method is suitable for this case study because it aims to discover and discuss the challenges that are also issues to the problem of supply chain strategy and logistics performance in a sugar factory located in northern Malaysia. In this regard, qualitative methods are useful because they can provide a deeper understanding based on the characteristics of qualitative data. Qualitative research can thoroughly examine this matter. For this reason, this study was conducted using a qualitative method.

### **3.3 Data Collection Methods**

Semi-structured interviews and discussions were used in obtaining comprehensive and relevant data. This method provides a different perspective and

helps the researcher understand the problems faced by sugar mills from a more comprehensive perspective on the main discussion topic.

Some of the respondents involved in this data collection process are Assistant Managers in the Supply Chain Department, Supply Chain Officers in the Supply Chain Department and Logistics Officers in the Logistics Department have already collaborated in semi-structured interviews. The focus of the interview was an understanding of internal process challenges in terms of inventory management, external challenges in terms of product supply and the competitive effects of logistics services. Open-ended questions have been used to prompt responses in fulfilling the answers to research questions and allow exploration of focused topics.

### **3.4 Data analysis**

In order to ensure that the results are comprehensive, meaningful and comprehensively understood, the data analysis process involves several steps. Data transcription and organization, all transcripts of interview notes were systematically organized and transcribed verbatim. For analysis, the responses to the interviews were compiled and entered into a database. Thematic analysis was used to analyse the qualitative data, data coding was used to identify recurring themes, patterns and categories in this process. Comparable qualitative analysis software can assist in the coding and organization of data. The thematic analysis gives a clear picture of the data challenges that become an issue until the outbreak of internal problems in terms of inventory management, external issues in terms of product supply and the effects of competition in logistics services.

This study uses interviews as a primary data source, and a literature review is used as a secondary data source. This involves using exploratory thematic analysis to identify patterns and themes in qualitative data sets. The goal is to enable researchers to obtain answers to all research questions, which will allow them to complete the research by obtaining relevant answers. The following data display involves displaying the data visually to facilitate understanding and interpretation. This makes it easier for researchers to identify insights and communicate their findings effectively.

### 3.5 Summary

In this study, qualitative research methods were used to examine the challenges of supply chain strategy and logistics performance in a sugar factory in northern Malaysia. An exploratory approach was used to gain an understanding of key supply chain components of external and internal challenges and impacts. Interviews with the management team in the factory's supply chain and logistics were conducted in a semi-structured manner to obtain relevant information. This methodology is used with the aim of providing a solid foundation for understanding the complexities of supply chain and logistics of sugar mills.





## **CHAPTER 4**

### **DATA ANALYSIS**

#### **4.1 Introduction**

The results of data collection will be presented in this chapter. In one of the sugar factories in northern Malaysia, the researcher conducted face-to-face semi-structured interviews to collect data. To analyze the data collected from the participants of this study, transcripts from voice recordings were made for coding using Microsoft Word. After the interview data was collected, there were various responses given by the respondents about the problems that arose in this factory to the researcher. Demographic questions, background, answers to research questions, respondents supporting the problem statement, and closing are some of the parts that are divided in the interview and presented in this chapter.

#### **4.2 Demographic information**

##### **4.2.1 Respondent 1**

Respondent 1 is 38 years old. He holds the position of assistant manager in the Supply Chain department. Respondent 1 is responsible for the overall management of the supply chain of both types of sugar being processed by this factory, namely refined sugar and raw sugar. Respondent 1 is also responsible for managing spare parts involved during sugar supply work such as in the warehouse. He has worked at this sugar factory for 10 years. He is very experienced in the food industry involving sugar, this is because his responsibilities play a major role in managing sugar products from raw materials sent to Penang Port, Malaysia until they become finished products that are later sold to customers.

##### **4.2.2 Respondent 2**

Respondent 2 is 53 years old. He works in this factory as a supply chain officer in the Supply chain department. Respondent 2 is responsible for reporting such as daily reports, transport reports, and supply chain claims. Respondent 2's work experience in this factory has reached 8 years. He has

worked in the sugar industry in this factory for a long time but has moved departments until now he is in the supply chain department permanently.

#### 4.2.3 Respondent 3

Respondent 3 is 48 years old. His position at the factory is a logistics officer in the logistics department. He is fully responsible for the transportation work at the factory, whether in all inbound and outbound transportation management, logistics services and transportation reporting related to refined sugar, raw sugar, and spare parts logistics are available at once. He has experience in the factory and this field for 8 years together with respondent 2. He is very knowledgeable about the ins and outs of the food industry such as sugar, especially those related to logistics.

Respondent	Age	Job position	Responsibility	Experience
1	38	Assistant manager in Supply Chain department	<ul style="list-style-type: none"> <li>- Managing the supply chain of refined sugar and raw sugar.</li> <li>- Managing spare parts.</li> </ul>	10 years
2	53	Officer Supply Chain in Supply Chain department	<ul style="list-style-type: none"> <li>- Reporting (daily reports, transport reports, and supply chain claims).</li> </ul>	8 years
3	48	Officer Logistics in Logistics department	<ul style="list-style-type: none"> <li>- All inbound and outbound transport management, logistic services, and transport reporting related to refined sugar, raw sugar, and spare parts logistics are available at once.</li> </ul>	8 years

Table 4.2.4: Demographic information of respondents

**Research Question 1:**

**Table 4.3: Themes for the internal process challenges in inventory management at one of the Sugar Factories in Northern Malaysia**

<b>Internal process challenges in inventory management</b>		
<b>FIRST ORDER THEMES (Sub-Categories)</b>	<b>SECOND ORDER THEME (Categories)</b>	<b>FINAL THEMES (Emerging Themes)</b>
<ul style="list-style-type: none"> <li>• No production due to maintenance (low stock)</li> <li>• Sugar dumping (high stock)</li> <li>• Target sales different from HQ are sometimes inaccurate (Out of stock &amp; low stock)</li> <li>• Products returned by customers, interfering with production. (low stock &amp; out of stock)</li> <li>• Broken equipment</li> <li>• Repair cost</li> <li>• Not enough repair time</li> </ul>	<ul style="list-style-type: none"> <li>• Stock</li> <li>• Maintenance</li> <li>• Information</li> </ul>	<ul style="list-style-type: none"> <li>• Internal challenges</li> </ul>

<ul style="list-style-type: none"> <li>• Receiving information solely based on HQ instructions</li> <li>• Lack of information</li> </ul>		
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**Table 4.3: Themes for the internal process challenges in inventory management at one of the Sugar Factories in Northern Malaysia**

The table above shows the themes for the internal process challenges in inventory management at one of the Sugar Factories in Northern Malaysia. The table is divided according to three breakdowns of categories where subcategories influence the categories that give a role as the existence of themes challenges. No production due to maintenance, sugar dumping, sales target different from HQ are sometimes inaccurate and products returned by customers, until interfering with production are all problems involving stock. These problems make the stock situation in the warehouse out of stock, low stock and high stock. Broken equipment, such as a boiler, another machine, and some equipment at the warehouse, causes maintenance challenges. Cost repair makes the repair process not run smoothly because the factory needs to save and follow the current budget. This also includes the repair process not taking a long time to carry out the repair work, so that the repair process is stalled. Receiving information only based on HQ instructions triggers the issue of lack of information between this factory and their HQ. Problems in terms of information have an impact on all other types of challenges that affect production.

## Theme 1: Perceived internal challenges

**Table 4.3.1: Respondents' support of perceived internal challenges**

Theme 1	Categories	Respondent's support
Internal challenges	Stock	R#1, R#2, R#3
	Maintenance	R#1
	Information	R#1, R#2, R#3

**Table 4.3.1: Respondents' support of perceived internal challenges**

The researcher can identify internal challenges in inventory management through questions asked to target respondents until the questions are answered. Internal problems stem from the stock in the warehouse. Before setting the sales target, the factory needs to get information from their HQ who cooperate with each other. Lack of information, inaccurate information and the delay in receiving information from the HQ affect stock storage in the warehouse, resulting in effects such as out-of-stock and stock is decreasing. In addition, problems related to stock are also caused by maintenance on the product production machine. Output does not run smoothly and is interrupted due to maintenance, and this causes the stock to be low because the product is sold but no production of the product is made due to the lack of stock of raw materials, making customer demand not can be fulfilled. Furthermore, the issue in terms of stock also occurred because the stock was high and suddenly increased, making the storage in the warehouse not enough to accommodate and store a large amount of sugar at one time, this dumping of incoming sugar because there is Import Permit (AP) sugar, which is cheap imported sugar taken from Thailand and India. Finally, this stock-related challenge also occurs because it is related to the issue of damaged and contaminated products, when this issue occurs, then the first customer at the wholesaler and retailer level will return the product to the factory, this affects the stock that was really low then

*“Externally, because of the sale, I don't know much, our HQ decides everything and they will deal with the customer. We were only guided by what HQ told us.” (R1)*

*“It's just that there is a lack of information because before the sales information was sitting inside the factory area and everyone was easy to contact, now the sales office is outside, at our HQ. So in terms of how much HQ target we are not sure. Furthermore, now that there are two*

*in terms of sales targets. So, HQ target sale and our target sale are different. So we want to know what percentage is for our HQ and what percentage is for us. This thing will be effective if we know how much they're targeting. For example our HQ they push a lot up to 90%, so 10% is left with us, our stock will be lost, a lot is lost, so if a lot is lost, the storage will only have 5000 more.” (R3)*

*“Unlike when I joined the old company when we joined the agent, we were always in contact with sales management. But now in this company, we are not always in touch with sales management, so I don't know what happened. That's the problem now.” (R2)*

*“That day there is maintenance, and when there is maintenance, the stock will decrease because the product has been sold, and there is no new production. Internal problems, the stock itself, we cannot fulfill the customer's demand if the stock is like this. As of now, there is a lack of stock because the factory has just finished maintenance, and we are in the middle of going back to production.”(R1)*

*“What causes this high stock is AP sugar, AP sugar which means buying foreign sugar such as imports. The government gives AP to an individual to import cheap sugar from Thailand and India. So, our factory cannot fight with this dumping of sugar.” The factory ever shutdown for almost 20 days and stopped for two weeks. This shutdown is the cause of the dumping of AP sugar until the stock is high in the warehouse and inventory problems occur.” (R1)*

*“It's just that there may be an impact in terms of production, it will disrupt production work, production wants to use the stock of raw materials available to make sugar products, but the return of products that occurs causes production to be interrupted.” (R1)*

*“This factory has low stock, if the customer always returns, there will be problems. When stock is low, we don't have sugar to replace. If the time is high stock, we are welcome to exchange.” (R3)*

The second internal challenge in inventory management is maintenance, the main equipment boiler often breaks down. Insufficient cost for overall repair is a problem for this maintenance as well, this is because the insufficient budget causes the repair process to be incomplete and there are still machines and other tools in storage that have not been repaired. The factory is also approved and filled to allow the maintenance process to be carried out in a

short period of time. The repair process is only allowed to run within 10 days, so the repair process is only really done within that period. The factory is directed to save time, and costs should be run according to budget.

*“The thing about broken equipment is in terms of maintenance. Factory maintenance that day, there are some other parts left that need to be repaired, mostly in terms of the boiler. This production just started two or three days ago following maintenance.” (R1)*

*“Not fully repaired, some are left behind, some still need to be repaired. This is because of the cost, getting approval and carrying out the repair process in a period that does not exceed the budget. The factory gets 10 days for the repair process, only during these 10 days the process is carried out. So we only use it in those ten days for repairs and can't waste it so as not to spend more.” (R1)*

Information becomes an internal challenge in inventory management. The factory only receives information based on HQ instructions, so they often face problems related to information such as lack of information, inaccurate information, and delays in receiving information from HQ.

*“It's just that in terms of information, we are lacking because in the past, the information sale was sitting with us and it was easy to get in touch with everything, now the sales office is outside. The process of communicating with them is not easy.” (R3)*

## Research Question 2:

**Table 4.4: Themes for the external challenges in terms of product supply at one of the sugar Factories in Northern Malaysia**

<b>External challenges in terms of suppliers at one of the sugar refineries in northern Malaysia</b>		
<b>FIRST ORDER THEMES (Sub-Categories)</b>	<b>SECOND ORDER THEME (Categories)</b>	<b>FINAL THEMES (Emerging Themes)</b>
<ul style="list-style-type: none"><li>• Entry of insects and other animals in the warehouse</li><li>• Seasonal entry of insects and other animals in transport</li><li>• Employee weakness in taking action</li><li>• Ineffective approaches and initiatives</li></ul>	<ul style="list-style-type: none"><li>• Product packaging is damaged &amp; contaminated</li><li>• Control effectiveness</li></ul>	<ul style="list-style-type: none"><li>• External challenges</li></ul>

**Table 4.4: Themes for the external challenges in terms of suppliers at one of the sugar Factories in Northern Malaysia**

The table above explains the themes of external challenges in terms of product supply in Sugar Factories in North Malaysia. The subcategory indicates the entry of insects and other animals into the warehouse causing product packaging to be damaged and contaminated. There is also seasonal entry of insects and other animals and this is often seasonal because the presence of seasonal insects and other animals is seen more often when the product is in the truck. Damaged and contaminated product packaging is the main category based on the subcategories listed. Then the second category is control effectiveness, which is about the weaknesses of their employees in taking or implementing actions and maintaining product quality. Furthermore, the factory's proactive approach and initiatives on this matter are often less effective.



## Theme 2: Perceived external challenges

**Table 4.4.1: Respondents' support of perceived external challenges**

Theme 2	Categories	Respondent's support
External challenges	Product packaging is damaged & contaminated	R#1, R#2, R#3
	Control effectiveness	R#1, R#2, R#3

**Table 4.4.1: Respondents' support of perceived external challenges**

External challenges are often about the supply of products supplied to customers. Product packaging is damaged due to the entry of cat fur, insects, lizards, mice and other animals in the warehouse and on product transport trucks. In addition, during the rice harvest season and the rainy season, usually problems related to insects and various animals occur during this season. This is often linked to the weakness of the parties who should be responsible for ensuring that the animals do not enter the factory area and are responsible for the quality of the product. Actions such as setting mouse traps, ant traps and setting cat traps are also ineffective. Because of this, all effectiveness controls are ineffective causing external challenges in terms of product supply.

However, the factory has already carried out various initiatives so that product damage caused by animals does not recur, but all these proactive actions have not yielded results. In addition, challenges related to damage and contamination of product packaging are not frequent challenges, they are rare. Now, they improve all the existing SOPs especially in the loading stage such as the season of many insects, loading sugar into the truck is not allowed to be filled at night, washing the pallets in the truck regularly to ensure it is in a clean condition to avoid complaints from customers. The QA department is instructed to be aware in ensuring the quality of the product is guaranteed before it is delivered to the customer.

*“The fur of cats or ants and other animals. This does not necessarily happen in the warehouse only, sometimes it may be external factors that push animals into the factory. Another thing is the weakness of the party that should be responsible for ensuring that the animals do not enter*

*the factory area. But sometimes it might be something that is out of control, like ants, and sometimes it's not sure how these animals damage the product, that's the problem. That can probably be on the truck itself, even if it's not near the warehouse.” (R2)*

*“We have done control, but there may be shortcomings like ineffectiveness such as put rat medicine, and Ants medicine. There is action and initiative, done outside the warehouse, installing cat traps, mouse traps, Lizards. But there is still this problem just not much and not often.” (R1)*

*“Here we have two seasons, for example, there are many insects in the rice harvest season and there will be many insects in the rainy season. These two times, we need to be careful. We have a QA department together for inspection before and after loading the truck, QA is to ensure product quality. After that we have SOP for loading activities, our lorry has SOP, so if we look there it's like rainy season, so we limit the lorry before 7.30pm. It means its dark at 7.30pm. It's already night and you have to use lighting, so you can fill up before 7:30 pm. If there are many insects in the season that is rice or rainy season, the night before the day is not allowed to fill, so this is an alternative we take, we have SOP loading, loading in the sugar industry.”(R3)*

*“We will make a decision with QA. If QA says you can fill it, then fill it, if QA says you can't fill it, you have to change the truck, and we will change it. Maybe there are some cases that are overlooked, but sometimes there are. So our staff overlooks it, QA overlooks it, fill it in, and if it's damaged, the product will return to us.” (R3)*

*“We have started to have a new SOP or procedure for each delivery, our part was done to improve the SOP. Recently, there was a customer complaint regarding the pallet, now there is a new SOP, you have to wash the pallet before filling it. This is considered a new approach or improvement. The SOP was there before, but in the SOP we put the scrap pallet after three uses and then wash it. The improvement is that after we use it once, we continue to wash it.”(R2)*

### Research Question 3:

**Table 4.5: Themes for the effect of competition on one of the Sugar Factories in Northern Malaysia**

Effect of competition on one of the sugar refineries in northern Malaysia		
FIRST ORDER THEMES (Sub-Categories)	SECOND ORDER THEME (Categories)	FINAL THEMES (Emerging Themes)
<ul style="list-style-type: none"><li>• Sugar raw material ships fail to offer high prices compared to other ships that offer higher prices to trucks.</li><li>• Price</li><li>• Fewer trucks</li><li>• Demurrage</li></ul>	<ul style="list-style-type: none"><li>• Lack of transportation</li><li>• Slow production</li><li>• Penalty payment</li></ul>	<ul style="list-style-type: none"><li>• Effect of competition</li></ul>

**Table 4.5: Themes for the effect of competition on one of the Sugar Factories in Northern Malaysia**

There is a theme for the impact of competition in logistics services on one of the Sugar Factories in Northern Malaysia. The last theme is the effect of competition, there are three effects that occur as a result of competition in logistics services. Some of the effects include lack of transport, slow production and payment of penalties. Lack of transportation is a category for the sub-category of sugar raw material ships that fail to offer high prices compared to ships that carry raw materials for other products that offer higher prices to logistics services that are trucks that transport raw materials from ships to factories. The price factor also contributes to the impact of this transportation shortage problem. Fewer trucks is a subcategory of the slow production category, fewer trucks cause production to be delayed and the product production process cannot be released within the targeted period. Meanwhile, the issue of penalty payment which is the result of the demurrage situation that happened as a punishment to the factory for failing to bring the sugar raw material from the ship into the factory within the specified time period.

### Theme 3: Perceived effect of competition

**Table 4.5.1: Respondents' support of perceived effect of competition**

Theme 3	Categories	Respondent's support
Effect of competition	Lack of transportation	R#1, R#3
	Slow production	R#1, R#3
	Penalty payment	R#1

**Table 4.5.1: Respondents' support of perceived effect of competition**

There are three types of competitive effects of logistics services that affect this industry. First, the lack of truck transportation at the port, ships carrying sugar raw materials sometimes fail to offer higher prices to logistics service trucks than other ships that offer high prices to trucks that come to take and deliver raw materials to factories. Vessels fail to offer high prices as well due to rising prices of diesel, raw materials, and gas. When the cost of all this suddenly increases, this will affect the transport because the transport will be pay according to the price of a metric ton, for example 20 ringgit per metric ton, when the price of diesel goes up they either cannot maintain that 20 or increase the payment because the transport part has to withdraw capital to pay for diesel fuel. So when there are no trucks willing to accept the offer at a cheaper price, the factory is now short of trucks to transport raw materials from the port to the factory.

The second effect is that production has slowed down due to slow discharges that bring raw materials off the ships due to lack of trucks. This effect affects the entire production of the product because the trucks are slow to unload the raw sugar from the ship to enter the warehouse at the factory. Interviewed respondents said that they try to arrange the lorry to arrive on time, if the goods are available then they can follow the plan and try to make a production estimate and can launch various other processes involved in production. When the goods are in the factory, the concerned party will start planning the next strategy but the situation is interrupted when the raw materials are slow to arrive.

The next effect is a penalty called demurrage. Demurrage means the penalty charged if the factory exceeds the period given to take the raw materials on board the ship docked at the port. At Penang Port, each port has a schedule of incoming and outgoing ships. For example, if the ship carrying sugar raw materials has arrived today, then within 3 days the sugar raw materials in the ship must be used up and taken from the ship. This is because later other ships

such as corn ships for example will come to the port to dock and park at the place of the ship carrying the sugar raw material. But sometimes these factory can't take their raw material within three days, by the fourth day, the corn ship is ready to take the place of raw sugar ship. So the sugar factory has to pay if they want the ship to stay until the raw sugar is taken until it runs out, this is called demurrage.

*“Every ship wants to fight the price, for example, a corn ship offers RM30, this factory offers RM20 so this logistics truck takes RM30. And the effect on us is the lack of trucks, if there are not enough trucks then it will be slow to bring out the raw sugar from the ship. Each ship will be allocated almost the same amount of time, for example in a week we need to transport 20 thousand tons, if there are not enough trucks then it takes time to take raw sugar in the ship. We had to pay a fine for exceeding the set time which is the time to pick up the goods in the truck.”(R1)*

*“The increase in gas and the high price of raw sugar has a big effect. In terms of transport, the increase in diesel prices. So when the raw material goes up, it will affect transport and the cost of this raw material. Because transport will be charged by us according to the price per metric ton. For example, at RM20 per metric ton, when the price of diesel goes up, truck wages can't be maintained at RM20 because the transport part has to take out capital to pay for diesel fuel.” (R3)*

*“Discharge or take goods out of the ship, if it takes too long it is called demurrage. Demurrage means the penalty that is imposed if it exceeds the given period. In Penang Port, every port has a schedule of ships coming in. For example, if the sugar ship has arrived today, then in 3 days it must have finished taking the sugar from the ship because later the corn ship will dock at that port. But sometimes we can't finish it in 3 days. On the fourth day, the corn ship was waiting at the dock, so we had to pay if we wanted to stay until the raw sugar was taken. This is called demurrage. The demurrage calculation is in USD, and pay in USD according to the time we take, there are 6 USD per day. For example, if we say 12 hours of extra time, the 12 hours will be multiplied by 6 USD.” (R1)*

#### 4.6 Summary

Briefly, the data collected from the interviews were analysed using thematic analysis for each piece of data analysed. In this chapter, the challenges of supply chain strategy and logistics performance that answer the research questions have been listed and described. Internal challenges in terms of inventory management are related to external challenges in terms of product supply, one of the examples taken is that product packaging is damaged and contaminated causing customers such as retailers and wholesalers to make returns resulting in reduced stock problems and triggering challenges to inventory. Then there is the effect of competition that arises in the competition of logistics services, this effect also creates challenges especially internal challenges, evidence such as the lack of trucks causing production to run slowly due to not getting raw materials at the right time which causes a lack of stock. If seen clearly from an academic point of view in the field of supply chain and logistics, it is clear that each of these problems are closely related to each other and cause the impact from only one source. These issues disrupt strategy, especially supply chain strategy. After the data analysis, the results of the data analysis will help the researcher continue with chapter 5 about achievement of research goals and objectives, significant of study, limitation of study, recommendation for future research, and the overall conclusion.

## **CHAPTER 5**

### **DISCUSSION AND CONCLUSION**

#### **5.1 Introduction**

This chapter will discuss the analysis of the data that has been studied to see the conclusion. Several sections will be discussed including the achievement of research goals and objectives, the significance of the study, limitations, and recommendations for future research. This section provides an overview of the research involved in the clarification.

#### **5.2 Achievement of research goals and objectives**

This study aims to research and identify some internal challenges in terms of inventory management and external challenges in terms of product supply and reveal the impact of logistics service competition on supply chain strategy and logistics performance in sugar factories in northern Malaysia. The three objectives of the study are goals that are also a guide for this study so that the researcher knows what to focus on. The following sections describe how each objective was achieved.

##### **5.2.1 Fulfilment of the first objective**

The first objective was to identify internal process challenges in inventory management by one of the sugar factories in northern Malaysia. Knowing the internal challenges related to inventory in this factory is running smoothly because the three participants who are also the target respondents are very open and welcome the interview process. The three respondents shared information about the internal challenges faced by the factory related to inventory, especially, the challenges include stock such as unstable stock which sometimes is at a high stock level then drops to low stock and sometimes the stock is decreasing. In addition, the internal challenges related to inventory are also maintenance, the maintenance process because equipment damage such as boilers often occurs, and damage to machines and equipment in the warehouse. Costs that exceed the budget and the period given for maintenance that is not enough cause the factory to shut down and the maintenance process is not running fully. Finally, the researcher was able to find out that the third internal

challenge is related to information such as lack of information because the information is only based on their HQ alone. All this information is the findings of the questions asked to the respondents for internal challenges in inventory management. Based on the findings, all respondents agreed with each other on their respective opinions and cooperated in helping to contribute information to the researcher.

### **5.2.2 Fulfilment of the second objectives**

The second objective is to identify external challenges in terms of product supply at this sugar factory. Questions were asked to the three respondents about the problems that are an issue for this factory, all respondents took this matter seriously when discussing this matter and they each gave answers to the survey of this problem. Specifically, this problem is the problem of damaged and contaminated product packaging, and the challenge of effective control to prevent damaged and contaminated product packaging. Damage to the product packaging and contamination of this sugar product is due to the entry of insects and other animals, and the entry of all these animals according to the season. However, initiative actions and proactive steps have been taken to overcome this problem but employee weakness in taking action and ineffective approaches and initiatives have made this challenge not yet find a real solution. All these statements are information obtained by the researcher from the respondents through questions asked for external challenges in terms of supply. Based on the interview process, all respondents provided information by fully answering the research question so that the researcher could identify this challenge.

### **5.2.3 Fulfilment of the third objectives**

The third objective, also the last objective, is to reveal the effects of competition in terms of logistics services at this factory. The first and third respondents provided many statements and information based on their experiences in revealing the effects of this competition, but the second respondent only agreed with both respondents because the second respondent did not fully manage the logistics of transportation at this factory. Among the



statements shared by the respondents was that they stated that three effects occurred, namely lack of transportation, slow production, and penalty payment. This effect has a big impact because it influences each other, sugar raw material ships fail to offer high prices compared to other ships that offer higher prices to trucks because of the increase in prices of raw materials and diesel, and through this, a lack of transportation occurs due to the lack of transportation, namely trucks that transport raw materials from ships. When there are fewer trucks, production also becomes slow. Then when the factory fails to finish the raw material on the ship, demurrage will occur and a penalty payment will be imposed. This information obtained is a statement from Respondent One and Respondent Three through questions asked by the researcher to reveal the effects of competition in terms of logistics services.

### **5.3 Significant of study**

This study of the challenges of supply chain strategy and logistics performance has allowed us to get benefits now and into the future. Supply chain and logistics are two important processes that are the main thing in every business company. A smooth supply and logistics chain in business allows businesses to progress and become one of the factors that contribute to the country's economic progress. The challenges studied by this researcher have revealed the real situation in the supply chain cycle and logistics management used for the industry in sugar factories.

This finding is important because it will help other organizations identify problems early and be prepared to deal with potential challenges that may occur as in the analysis of this study. In supply chain strategy and logistics performance, providing practical guidance to improve supply chain and logistics cycle processes is a must because supply chain and logistics are two important processes that are central to every business.

In addition to being a reference for the firm, this study can also have an impact on the academic community and be used as a reference because this study examines internal challenges in terms of inventory and external challenges in terms of product supply and the effects of competition on logistics services. Readers will be able to understand various analyses in this industry related to the problems and effects that

disrupt supply chain strategy and logistics performance. So, it can have great implications for research and the academic community.

#### **5.4 Limitation of study**

There is no doubt that this study provides deep knowledge and some insights that can be used and useful to us in the field of supply chain and logistics strategy. However, this study is limited and does not extend to the whole of Malaysia, the first limitation of this study is that the study conducted is limited and only focused on one business, which is a sugar factory in northern Malaysia. In general, every business has its challenges according to their views and opinions on supply chain and logistics. However, the study only focused on one place and the researcher only obtained views from one business place only.

The second limitation is that this study only focuses on three main objectives as research goals such as internal challenges in inventory management, external challenges in terms of product supply, and the effects of competition in terms of logistics services. In particular, the challenges in the world of supply chain and logistics are diverse and the challenges are very broad, and each challenge can come from various aspects. However, this study narrows the scope of the research, so the study only focuses on three objectives.

However, apart from the challenges that can be explored, other things can be studied and analysed such as 'factors of the smoothness of the supply chain and logistics strategy', 'the effect of an effective approach in producing a successful supply chain and logistics process', and many more elements that can be explored. Therefore, the researcher suggests to future researchers to study more broadly about challenges. In addition, other things besides the challenge element can be further studied because the supply chain and logistics is a vast thing that we can understand and explore.

#### **5.5 Recommendation for future research**

The researcher suggests some recommendations for further research on related topics after acknowledging the limitations of the study. The first suggestion is that future researchers should analyse and collect data from more than one factory or

company. This is because views and perspectives from different factories or companies will provide a variety of different views on logistics issues and supply chain strategies. In this way, the study will be more in-depth and can touch on various issues related to a wider perspective.

In addition, future researchers who wish to conduct similar studies can use quantitative studies to obtain specific findings based on the final hypothesis. Using quantitative methods by distributing forms to target respondents according to a large population to obtain real and comprehensive information more widely. In general, this method will also increase the involvement and input of respondents and enable a better understanding of logistics performance and supply chain strategy. As a result, future researchers can make evaluations based on the final quantity. Finally, future researchers should include more elements and diversity of issues in their future studies to analyse and explore the points of supply chain strategy and logistics performance that affect these sugar industry.

## **6.0 Conclusion**

In summary, through this research, researchers can learn more deeply about the supply chain strategy and logistics performance challenges faced by sugar factories in northern Malaysia. The challenges faced have a direct and indirect influence and impact on the entire process of producing products in the factory. There are external and internal challenges that interfere with this strategy, but the researcher has also known initiative and proactivity that become actions on behalf of the factory. In addition, the researcher was also able to reveal the effect of the competition of logistic services in the factory so that it has a big impact on the whole process. In the era of globalization, it is now important for every interested party to care and know about this problem so that it becomes a lesson and a reference for preparing to avoid this problem so that we can lead a rapid economy together.

The research achieves the objective of the study by stating the internal process challenges in inventory are stock, maintenance, and information. The second objective is the external challenge from the supplier's point of view is the packaging of damaged & contaminated products as well as ineffective effectiveness controls. The third objective, the impact of competition in logistics services. The consequences are lack of

transport, slow production of products and incurring penalty payments. Therefore, it is clear that these three objectives, which are internal challenges in terms of inventory management, external challenges in terms of product supply and the effects of logistics service competition have achieved their goals and have told us that these are all common issues that disrupt supply chain strategies and logistics performance.

Lastly, each of the external and internal challenges and competitor impacts that arise in this supply chain strategy and logistics performance are outlined. Every view and opinion obtained by the researcher is a consensus from the discussion between respondents who agree with each other about the challenges of supply chain strategy and logistics that exist in their factories. Every problem that is proposed is a problem that happened and they are facing. However, they also have control measures and are implementing initiatives to prevent this problem from happening often. This is a challenge that does not happen often and there is a solution. Therefore, this study brings positive value to readers and subsequent researchers as a lesson and initial step for reference as well as preliminary preparation to prevent the same problem from occurring.

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## Appendixes

Activities/Week	Time Scale (week)														
	1	2	3	4	5	6	7	Study week	8	9	10	11	12	13	14
FYP Talk								M							
Search for FYP Topic								I							
Meeting with supervisor								D							
Title confirmation															
RO & RQ construction								S							
Discussion on Chapter 1								E							
Submission Chapter 1								M							
Discussion Chapter 2															
Submission Chapter 2								B							
Discussion Chapter 3								R							
Submission Chapter 3								E							
Checking Chapter 1,2 & 3								A							
Submission Chapter 1,2 & 3								K							
Presentation 1															

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

**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
Constructing interview questions																
Revised questions																
Interview the participants																
Data collection																
Data Analysis																
Chapter 4: research findings and discussions																
Chapter 4: revised																
Chapter 5: Conclusion																
Chapter 5: revised																
First draft FYP II																
Submission of FYP II draft and full thesis																
Presentation of FYP II																
Revised of FYP II																



[CHALLENGES IN SUPPLY CHAIN STRATEGY AND LOGISTICS  
PERFORMANCE IN ONE OF THE SUGAR FACTORIES IN NORTHERN  
MALAYSIA]

**CONSENT FORM**

I have read, or have had read to me, and I understand the Information Sheet. I have had the details of the study explained to me, any questions I had have been answered to my satisfaction, and I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time. **Signing this form means that you have agreed to be a part of the study.**

- I confirm that I have read and understand the information sheet for the study and have had the opportunity to ask questions
- I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.
- I agree to take part in the above study.
- I agree to the interview being audio recorded
- I agree to the interview being video recorded
- I agree to the use of anonymized quotes in publications

Please tick box	
YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

**Declaration by Participant:**

I \_\_\_\_\_ hereby consent to take part in this study.

\_\_\_\_\_  
(Signature of participant)

Date: \_\_\_\_\_

\_\_\_\_\_  
(Signature of researcher)

Date: \_\_\_\_\_

**Contact Information**

Name of researcher:

Full address:

Tel:

E-mail:

## PARTICIPANT INFORMATION SHEET

### [TITLE OF THE STUDY]: CHALLENGES IN SUPPLY CHAIN STRATEGY AND LOGISTICS PERFORMANCE IN ONE OF THE SUGAR FACTORIES|IN NORTHERN MALAYSIA

We are inviting you to take part in an interview as part of a research study. Before you decide, you need to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Ask me if there is anything that is not clear to you or if you would like more information. Take time to decide whether or not you wish to take part.

#### WHO I AM AND WHAT THIS STUDY IS ABOUT:

Assalamualaikum and good morning, I am Nurul Izzati Atiqah Binti Muhammad Saperi, final year student pursuing a Bachelor of Technology Management (Supply Chain Management and Logistics) at Universiti Teknikal Malaysia Melaka. My purpose is to interview some relevant parties for my final year project degree titled "Challenges in Supply Chain Strategy and Logistics Performance in One of The Sugar Refinery in Northern Malaysia". The information obtained is important for reference in this era of increasingly rapid globalization, the challenge of supply chain strategy and logistics performance is an important aspect of every business.

#### WHAT IS THE RESEARCH BEING CONDUCTED?

This study aims to review the existing literature on supply chain strategy challenges and performance logistics. By examining various related studies, this study is expected to provide a comprehensive overview of how supply chain strategy challenges and logistics performance affect the business cycle. All information will be kept confidential and only used for academic purposes.

#### WHAT WILL TAKING PART INVOLVE?

If you decide to participate, here are the topics that will be discussed:

- 1) To identify internal process challenges in inventory management by one of the sugar refineries in northern Malaysia.
- 2) To identify external challenges in terms of suppliers in one of the sugar refineries in northern Malaysia.
- 3) Reveal the effects of competition on one of the sugar refineries in northern Malaysia.

### SECTION C: CORE QUESTIONS

**RO1: To identify internal process challenges in inventory management by one of the sugar refineries in northern Malaysia.**

1. What are the problems this factory faces with the internal inventory management process?
2. How can there be issues involving procurement and sourcing regarding this inventory? Such as the warehouse does not have enough space because the product production exceeds the limit, and the maintenance is still inefficient causing the equipment to break down.
3. Is inefficiency and lack of effectiveness a constraint that triggers this problem? Such as the warehouse does not have enough space because product production exceeds the limit, and maintenance is still inefficient causing the equipment is broken.
4. Do all these issues occur frequently?
5. To what extent is this problem a challenge for inventory management and warehouse management?

**RO2: To identify external challenges in terms of suppliers in one of the sugar refineries in northern Malaysia.**

1. What are the problems associated with the supplier?
2. How can issues arise involving suppliers in terms of quality care that cause product quality to be bad such as product packaging is no longer perfect due to animal bites?
3. How often does product damage occur?
4. Regarding factories that deliver or supply finished products to wholesalers and suffer from damaged packaging, does this challenge affect wholesalers and retailers?
5. To what extent do these problems indicate constraints to supply chain management strategies and logistics performance?

**RO3: Reveal the effects of competition on one of the sugar refineries in northern Malaysia.**

1. How many types of logistics companies have this factory partnered with?
2. How does the intense competition with rival factories in terms of cooperation with logistics companies affect the factory's operational strategy?

**Probes:**

- What is the impact of logistics competition on factory operations and capabilities as a result of constraints or challenges in the factory's business strategy?
3. Are price factors, delivery efficiency, or additional services the main considerations that make the factory decide to engage with this competition?
  4. How does the factory manage its supply chain management strategy to remain competitive, especially if rival factories offer the logistics company better or cheaper services?

**Fakulti Pengurusan Teknologi dan Teknokratik  
Universiti Teknikal Malaysia Melaka**

**SEMI-STRUCTURED INTERVIEW PROTOCOL**

Project Title:

CHALLENGES IN SUPPLY CHAIN STRATEGY AND LOGISTICS PERFORMANCE IN ONE OF  
THE SUGAR FACTORIES IN NORTHERN MALAYSIA

1. Interviewer Name	
2. Participant ID#	
3. Participant's name	
4. Participant's position	
5. Interview Date (dd/mm/yyyy)	/ /
6. Participant agrees for interview to be digitally recorded	Yes <input type="checkbox"/> No <input type="checkbox"/>
7. Time Interview Began (hhmm-24hr clock)	:
8. Time Interview Ended (hhmm-24hr clock)	:

**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).
- Follow the following steps to complete the interview session:
  - Step 1: Complete Q1 – 5 above before the interview.
  - Step 2: Read Section A below to participant.
  - Step 3: At the beginning of the interview, introduce yourself, thank participant for taking part in the interview.
  - Step 4: Request permission from interviewee to record the conversation; tick the appropriate box for Q6.
  - Step 5: Turn on audio recorder if acceptable, document time the interview begins in Q7 above, and conduct an interview.
  - Step 6: Complete demographic questions that can be find in Section A.
  - Step 7: Proceed with the interview questions.
  - Step 8: At the end of the interview, thank the participant and ask if she/he has any further questions; document the time the interview ended in Q8 above.
  - Step 9: Ask if the participant is interested in being re-contacted with study results; if yes, document appropriate email. Inform participant that her/his email address will not be linked with her/his study data.

## Sample transcript of respondents

**Objektif 1:** To identify internal process challenges in inventory management by one of the sugar factories in northern Malaysia.

**Apakah masalah dalaman yang dihadapi oleh kilang ini dari segi proses pengurusan inventori?**

**Responden 1:** Sekarangni baru boiler susah. Haritu ada maintenance, bila maintenance so stok akan rendah sebab asyik jual-jual pastu tak ada production baru. Dari segi dalaman, faktor stok tu sendirilah, takboleh nak penuhi permintaan pelanggan. Sale kami taktau. Shah Alam yang decide semua, depa yang akan deal dengan customer. Kami hanya berpandukan apa yang Shah Alam bagitahu saja contohnya "You all buat banyak ni dan sekian-sekian".

**Responden 2:** Berbeza dengan dulu saya join Bukhari, kami (Responden 2 dan responden 3) masuk ejen selalu berhubung dengan management sekarang takselalu berhubung so taktau apa yang berlaku. Tu yang jadi masalah sekarang tu.

**Responden 3:** Jadi dari segi target depa berapa. Tambah sekarang ni depa ada dua dari segi sale target. Jadi, sale target Shah Alam dengan Sale Target Padang Terap berbeza. Jadi kita nak tau berapa percent untuk Shah Alam dan berapa percent untuk CSR PT. Benda ni akan effect depa punya stok. Contohnya dekat Shah Alam, depa push dekat Shah Alam banyak sampai 90%, jadi tinggal 10% dekat PT, Stok PT akan hilang, hilang banyak. Jadi bila hilang banyak tu storage CSR PT pon dalam 5000 lebih ja.

**Responden 1:** Menyebabkan high stock ni boleh masuk pasal AP, bila depa ambik AP sugar iaitu ambik gula luar macam keta import lah. sama jugak gula pon. Macam masa depa high stok tu kerajaan bagi AP dekat satu-satu individu ni untuk import gula Thailand ka India ka yang murah. Jadi, CSR PT takboleh lawan dengan depa, lawan pelambakan gula ni. Macam sekarang ni kekurangan stock pasai depa baru maintenance baru2 ni. kita baru nak jalan balik lah. Walaupun kami shutdown, Shah Alam kurangkanlah target tu sebab haritu CSR PT pernah shutdown dekat 20 hari jugak, brek sampai dua minggu. Kira yang tulah menyebabkan masalah yang wujud dari segi inventori pasai high stok lambakan gula AP masuk. Kalau kekurangan stok sebab mesin rosak. Yang pasal alat rosak tu yang tu dari segi maintenance, haritu CSRPT maintenance haritu, tapi selepas jalan balik nipon ada jugak part part lain yang tertinggal. kebanyakannya dari segi boiler la. Baru jalan dua tiga hari lepas. Takrepair fully, ada yang tertinggal, ada lagi benda lain yang perlu repair. Memandangkan kos, pastu CSRPT pon dapat kelulusan atau pengisian pon dalam tempoh yang takmau lebih bajet sangatla. Shah Alam dah



bagi repair and then dia bagi masa 10 hari, jadi depa gunakan dalam masa sepuluh hari tu saja lah. apa yang sempat repair, kena saving jugak bajet takmau membazir takmau lebih bajet.

**Objektif 2:** To identify external challenges in terms of product supply in one of the sugar factories in northern Malaysia.

**Apakah masalah yang berkaitan dengan pembekalan produk, dan bagaimana ia boleh berlaku?**

**Responden 2:** Banyak factor jugak, sebab dia kadang2 tu contohnya binatang peliharaan seperti bulu kucing atau semut. Patut benda ni takberlaku di sini kadang tu mungkin factor dari segi luaran yang lebih menggalakkan binatang tu masuk ke dalam kilang la. Satu lagi, kelemahan la untuk pihak2 yang sepatutnya bertanggungjawab dalam memastikan binatang tu takmasuk dalam kawasan kilang.

**Responden 1:** Responden ada buat dah, orang panggil apa nih, control kan, tapi mungkin ada kekurangan seperti takberkesan macam ubat tikus, ubat semut. Ada control la (tindakan atau inisiatif). Dilakukan diluar gudang pasang perangkap kucing, perangkap tikus, cicak tapi still ada masalah ni. Cuma takbanyak la, takkerap.

**Responden 3:** Dia ada dua season/musim, contoh kalau musim ambik padi tu memang ada serangga banyak, musim hujan pon akan serangga banyak. Dua waktu ni memang CSRPT kena berjaga-jaga lah. CSRPT ada QA section bersama-sama responden untuk sebelum dan selepas naik lori untuk checking (QA tu untuk memastikan kualiti produk tu la), lepastu CSRPT ada SOP untuk loading activity, lori CSRPT ada SOP, jadi bila depa tengok kat situ macam musim hujan, jadi depa hadkan lori tu before 7.30 petang, makna kata 7.30 petang tu dah gelap/dah malam, depa terpaksa guna pencahaya, jadi 7.30 ke bawah sahaja depa benarkan untuk mengisi, kalau musim serangga banyaklah iaitu musim padi/hujan, malam depa takbenarkan isi, jadi ini alternatif yang CSRPT buat pasai depa pon ada SOP lah. SOP untuk loading, loading dalam industry sugar.

**Cabaran ini memberi kesan kepada peruncit dan pemborong tak?**

**Responden 1:** Ada jugak kesan tapi kalau macam sebelum depa hantar, depa boleh buat/repair balik, proses balik gula yang pecah, ada jugak kalau sampai dekat customer sekali pun, tapi kebanyakannya kalau sampai dekat customer depa return balik lah. Jadinya takda kesan dekat pemborong dan peruncit sebab depa akan ganti balik semua tu la. Cumanya ada kesan pun mungkinla dari segi production, macam kata depa nak jalan dah production, depa terpaksa

return balik kira ganggu kerja production, production nak pakai bahan mentah gula buat produk, kira effect dekat depa la bila terpaksa return.

**Responden 3:** CSRPT low stock, kalau depa dok return lagutu, lagi bermasalah. CSRPT takda gula untuk ganti. Kalau time high stock takda masalah.

**Responden 2:** Untuk panduan encik zati, sebelum sampai gula tu dekat customer, dekat CSRPT ada tiga tempat yang terlibat. Yang pertama dari segi stok, kategori UA/US sebagai kontraktor, seterusnya pihak QA. Last sekali depa akan pastikan pihak tu selamat mengikut kriteria barulah depa akan pastikan gula tu keluar. Tapi tula kadang-kadang mungkin benda yang luar kawalan tu yang macam semut apa semua tu kadang-kadang depa takpasti macam mana haiwan-haiwan ni rosakkan produk tu, itu yang masalah. Itu mungkin boleh jadi atas lori tu sendiri kan, walaupun bukan dekat gudang.

**Responden 3:** Kalau QA kata boleh isi, so isilah, kalau QA kata takboleh isi kena tukar lori, pihak responden akan tukar. Mungkin ada jugak sesetengah kes tu terlepas pandang, pon ada kadang-kadang. Jadi staf kita pon terlepas pandang, QA pon terlepas pandang pastu isi jugak, kalau isi jugak effect dia patah balik return dekat CSRPT.

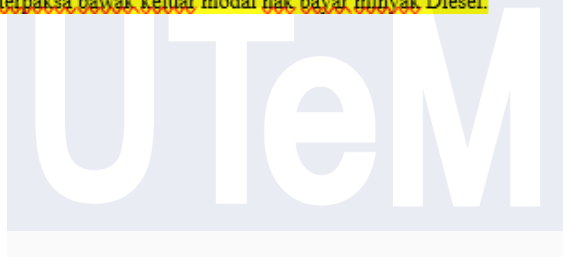
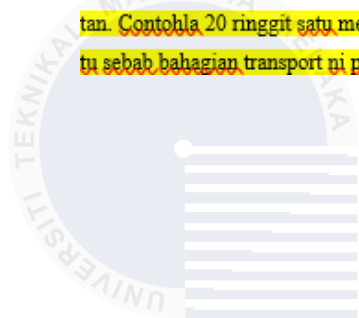
**Objektif 3:** Reveal the effect of competition on one of the sugar factories in northern Malaysia.

Bagaimanakah persaingan sengit dengan dari segi kerjasama dengan syarikat logistik memberi kesan kepada kilang yang mempengaruhi strategi operasi kilang?

**Responden 1:** Setiap kapal nak fight harga/breadline contohnya jagung tawarkan rm 30, CSRPT tawarkan rm20 so lori logistic ni dia ambik yang rm30 lah. Dan kesannya ke atas CSRPT pernah jadi kekurangan lori, bila kurang lori maka lambatlah untuk CSRPT discharge dan bawak keluar dari kapal tu. Setiap kapal tu akan bagi masa dekat CSRPT contoh dalam seminggu CSRPT kena habiskan 20 ribu tan, bila lori kurang maka makan masa lah nak grab masa ambik gula dalam kapal tu. CSRPT terpaksa bayar penalti sebab melebihi masa yang ditetapkan (masa nak ambil barang dalam lori tu lah). Discharge (bawak keluar dari kapal), kalau terlebih masa dipanggil demurrage. Demurrage ni maksud dia penalti yang dikenakan jika lebih dari tempoh yang diberi. Dekat Pinang Port, setiap port tu dia dah ada dah jadual kapal nak masuk contohnya kalau kapal gula dah sampai harini maka dalam 3 hari dia mesti habis dah diambil gula dalam kapal tu dekat port tu sebab nanti kapal jagung nak mai pulak dok kat port tu. Tapi CSRPT takboleh nak habiskan dalam masa 3 hari. Masuk hari keempat,

kapal jagung dok tunggu dah, jadi CSRPT terpaksa bayar kalau nak stay sampai raw gula tu diambil sampai habis pastu kapal jagung masuk, inilah yang dipanggil demurrage. Calculation demurrage ni dalam USD, bayar dalam USD mengikut masa yang CSRPT lebih tu, ada yang sehari 6 USD pon ada. Contoh kalau kata 12 jam masa yang CSRPT tu lebih, kali la 12 jam dengan 6 USD. **Kesan ni mempengaruhi strategi logistic dan supply chain di CSRPT, sebab lori lambat, nak bawak turun gula mentah dari kapal nak masuk gudang tu lambatla.**

**Responden 3:** Lagi satu factor cabaran dari segi luar ni ialah kenaikan harga gula mentah. Gas CSR PT yang paling tinggi yang memang bagi effect besar untuk CSR PT sebab depa tak boleh control. Dari segi transport, kenaikan harga Diesel, gula mentah dan gas yang ni yang paling besar lah. Dari segi transport, **kenaikan harga Diesel. Jadi bila raw material naik. Dia akan effect transport, kos raw material ni. Sebab transport akan cas dekat depa ikut harga per metrik tan. Contohla 20 ringgit satu metric tan, bila harga Diesel naik depa tak boleh nak kekalkan 20 tu sebab bahagian transport ni pon terpaksa bawak keluar modal nak bayar minyak Diesel.**



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