THE INFLUENCE OF INVENTORY MANAGEMENT PRACTICES ON OPERATIONAL EFFICIENCY: A STUDY ON SAUDI ALMARAI DIARY COMPANY

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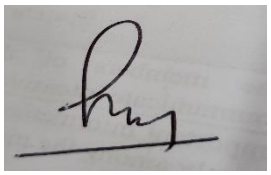
SIGNATURE : 

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

Bachelor of Technopreneureship with Honors

Faculty of Technology Management and Technopreneurship

Universiti Teknikal Malaysia Melaka

2023

DECLARATION OF ORIGINAL WORK

I hereby declare that all the work of this thesis entitled The Influence Of Inventory Management Practices On Operational Efficiency: A study on Saudi Almarai Diary Company

is original done by myself and no portion of the work encompassed in this research project proposal has been submitted in support of any application for any other degree or qualification of this or any other institute or university of learning.

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DEDICATION

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

ABSTRACT

There have been studies on the effect of inventory management techniques on operational effectiveness: a case study of the Saudi Arabian enterprise Almarai. Dairy production companies such as Almarai are seen to be failing as a result of inefficient management techniques. This study utilized a survey to ascertain the inventory-management procedures of Saudi Arabia-based Almarai firm and to assess the efficacy of the inventory-management techniques currently employed by these companies. In particular, the research will identify any obstacles that the Almarai firm faces as a result of its existing inventory management techniques. The absence of research on the inventory management procedures of the Almarai corporation prompted this investigation. Moreover, the researcher received 355 respondents through a Google survey from Almarai corporation and analyzed the respondents' data with the software SPSS by quantitative method. the survey found that the majority of Almarai companies employed the "Rule of Thumb" as an inventory-management method. Regarding the effectiveness of the used procedures, the survey indicated that the Almarai corporation was regarded to be fairly effective, with the company employing inventory management strategies such as Just in Time (JIT), and First in, First Out (FIFO). The findings indicated that fraud, scarcity of inventory, mistakes owing to incompetent employees, physical inventory not matching up with records, and an inability to keep up with consumer demand were among the most significant issues posed by Almarai's present inventory-management processes. This research contributes to the existing literature on the inventory management procedures of the Almarai firm and fills a knowledge gap on this under-researched area. The findings of this study will enlighten the decision-makers of Almarai organization regarding the best practices and diverse inventory-management tactics that are vital to the survival of their businesses and have been used by their competitors. This should enable them to evaluate their own inventory management methods and select whether to improve, modify, or preserve the current technique. This research will inform future intervention strategies designed to improve the survival rates of these dairy manufacturing enterprises. This might take the form of the creation of short courses to assist the Almarai company in enhancing its inventory-management practices.

Keywords: **Inventory Management, Operational Efficiency, Almarai, Challenges.**

ABSTRAK

Terdapat kajian tentang kesan teknik pengurusan inventori ke atas keberkesanan operasi: kajian kes perusahaan Arab Saudi Almarai. Syarikat pengeluaran tenusu seperti Almarai dilihat gagal akibat teknik pengurusan yang tidak cekap. Kajian ini menggunakan tinjauan untuk memastikan prosedur pengurusan inventori firma Almarai yang berpangkalan di Arab Saudi dan untuk menilai keberkesanan teknik pengurusan inventori yang digunakan oleh syarikat-syarikat ini. Khususnya, penyelidikan akan mengenal pasti sebarang halangan yang dihadapi oleh firma Almarai hasil daripada teknik pengurusan inventori sedia ada. Ketiadaan penyelidikan mengenai prosedur pengurusan inventori perbadanan Almarai mendorong penyiasatan ini. Selain itu, pengkaji menerima 355 responden melalui tinjauan Google daripada Almarai corporation dan menganalisis data responden dengan perisian SPSS secara kaedah kuantitatif. daripada Tinjauan mendapati bahawa majoriti syarikat Almarai menggunakan "Peraturan Ibu Jari" sebagai kaedah pengurusan inventori. Mengenai keberkesanan prosedur yang digunakan, tinjauan menunjukkan bahawa perbadanan Almarai dianggap agak berkesan, dengan syarikat itu menggunakan strategi pengurusan inventori seperti Just in Time (JIT), dan First in, First Out (FIFO). menunjukkan bahawa penipuan, kekurangan inventori, kesilapan disebabkan oleh pekerja yang tidak cekap, inventori fizikal yang tidak sepadan dengan rekod, dan ketidakupayaan untuk mengikuti permintaan pengguna adalah antara isu paling penting yang ditimbulkan oleh proses pengurusan inventori Almarai sekarang. Penyelidikan ini menyumbang kepada literatur sedia ada mengenai prosedur pengurusan inventori firma Almarai dan mengisi jurang pengetahuan mengenai bidang yang kurang dikaji ini. Penemuan kajian ini akan memberi pencerahan kepada pembuat keputusan organisasi Almarai mengenai amalan terbaik dan pelbagai taktik pengurusan inventori yang penting untuk kelangsungan perniagaan mereka dan telah digunakan oleh pesaing mereka. Ini sepatutnya membolehkan mereka menilai kaedah pengurusan inventori mereka sendiri dan memilih sama ada untuk menambah baik, mengubah suai atau mengekalkan teknik semasa. Penyelidikan ini akan memaklumkan strategi intervensi masa depan yang direka untuk meningkatkan kadar kelangsungan hidup perusahaan pembuatan tenusu ini. Ini mungkin dalam bentuk penciptaan kursus pendek untuk membantu syarikat Almarai dalam meningkatkan amalan pengurusan inventorinya.

Kata kunci: Pengurusan ***Inventori, Kecekapan Operasi, Almarai, Cabaran.***

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LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
GCC	Gulf Cooperation Council
IMP	Inventory management practices
JIT	Just In Time
MRP	Material Requirement Planning
RFID	Radio-frequency identification
EDI	Electronic data interchange
FIFO	First in First out
SKU	Stock Keeping Unit
OTD	On-Time Delivery
SAP-HR	systems, applications, and processes human resource
MRA	Multiple Regression Analysis

CHAPTER 1

INTRODUCTION

1.1 Introduction:

This chapter presents the background of the study, problem statement, research questions, research objectives, scope and limitation of the study, the significance of the study, and summary of the study.

1.2 Background of Study:

Historically, inventory management has meant either having too much inventory with insufficient management or having too little inventory with insufficient management. There can be severe penalties for excesses in either direction. According to (Lysons, K., & Farrington, B. (2016) Inventory management is defined as the process of maintaining stock inventory levels in conjunction with the physical distribution function in order to strike a balance between the need to minimize stock holding and maximize handling costs. Inventory problems became more prevalent as technical advancement enhanced an organization's capacity to produce things in greater quantities, at a faster rate, and with a variety of designs. According to (Godan, S. P., Variyath, A. M., & Sukumaran, A. , 2014). the audience exacerbated the situation by being sensitive to variations and adjustments in frequency design. Since the mid-1980s, there was no doubt that the strategic benefits of inventory management, production planning, and scheduling had become obvious. The success or failure of a business is directly related to the effectiveness of its inventory management, as effective inventory management not only helps to resolve the liquidity problem but also increases the profitability of the company. Inventory, of all types, is a significant component of capital (Panigrahi, C. M. A. ,2013).

In order to prevent stock outs, assure uninterrupted sales, and provide effective customer service, inventory management procedures include keeping sufficient stock and regulating inventory investment by maintaining an ideal level of production while lowering expenditures. Monetary and time expenses. Inventory management practices are to maintain an adequate quantity of stock. A quantity of stock that maintains an appropriate level of available demand while reducing the costs associated with it costs associated with storage, administration, and stocking. Numerous actions are within the purview of Inventory management practices including the following activities: acquisition, categorization, inspection, codification, and storage. Maintaining and taking stock, which includes stock control (Kamau, L. W., & Kagiri, A. W. 2015). The organized flow of production, rather than the irregular yet disturbing influence of running out of materials or goods. One of the most useful concepts in business is amplification, which is about boosting the value of an existing asset without increasing its size. As a result, the stock is crucial to a business association, as is the profit of the business. Disappointments for the company might be caused by inventory issues relating to abnormally high or low product amounts available. Output problems could occur if a private company runs out of an essential inventory item (Achieng, J. B. 2018).

The operational efficiency of providing the appropriate number and quality of raw materials is a primary objective of effective inventory management and operational efficiency. However, one mitigation strategy for achieving this goal is to understand when to order, how much to order, and how frequently to order so that the organization always has the appropriate level of raw materials and finished products at the lowest possible inventory total costs (Wangari & Kagiri, 2015) without experiencing material shortages or excesses. Assessing the efficiency and efficacy of inventory management and operational efficiency may be related to quantifying a firm's operational efficiency. While the capacity of a manufacturing organization to satisfy customer needs by producing enough quantities of high-quality completed items, avoiding waste, and shortening lead

times demonstrates strong operational efficiency. In the perspective of the preceding, this study examined the influence of inventory management and operational efficiency of quoted by manufacturing firms in the Kingdom of Saudi Arabia (Mbah, S., Obiezekwem, J., & Okuoyibo, A. 2019).

1.3 Problem statement:

Historically, inventory management has been referred to be either excessive inventory and insufficient management or insufficient inventory and enough management. Different penalties might be assigned to either extreme excess. Inventory management has been a challenge for many Saudi businesses. Inventory is an essential component of current assets, particularly for industrial companies. Huge sums are invested in inventories in order to facilitate the flow of production and satisfy customer demand. Nonetheless, retaining inventory incurs holding or carrying expenses as well as opportunity cost. Therefore, inventory management is essential for balancing the advantages and downsides of maintaining goods. When firms fail to successfully manage their inventory, they are likely to encounter stock-outs, a reduction in productivity and profitability, and dissatisfied customers (Lukumon, A., Abraham O., 2018). Consequently, the purpose of this study is to examine the impact of inventory management practices on the operational efficiency in Saudi Almarai Diary Company.

A production company's optimal inventory level is regarded as the most important component in enhancing operational effectiveness. However, the optimal quantity of inventory is contingent on the precision of the demand prediction in meeting market demand. Inventory is seen negatively since it generates no revenue unless sold. Different inventory management strategies are being utilized by multinational corporations to enhance their competitiveness and performance. The progression of inventory management from just-in-time inventory systems through lean inventory systems to supply chain management is a typical corporate practice (Chowdhury & Hossain, 2020).

Mostly due to the uncertainty of business operations, the Saudi industrial sector lacks suitable inventory management practices. To stay competitive in a period of heavy rivalry with other producing nations, this industry must use proper inventory management practices. The industry may anticipate improving operational performance by implementing contemporary and innovative inventory management practices.

Managers of manufacturing businesses are aware of the role inventory plays in organization operations. In the majority of manufacturing businesses, direct materials contribute to the production process, hence impacting firm performance. Ineffective inventory management systems cause the majority of finished items to remain in the warehouse before being distributed for ultimate consumption, hence decreasing the organization's efficiency. However, for businesses operating in industries with a high turnover of raw materials and/or completed goods, however, computerized tracking systems have emerged as a crucial component of corporate strategies aimed at boosting productivity and sustaining competitiveness. Poor implementation of inventory management systems has a negative impact on the company's inventory management performance, resulting in a reduction in sales volume (Ngugi, E., Kimutai, G., & Kibet, 2019).

1.4 Research Questions:

The questions of the research will be stated as follows:

- What are the inventory management practices utilized by Saudi Arabia dairy company (Almarai)?
- How effective is the inventory management practices utilized by Saudi Dairy company (Almarai)?
- What are the challenges of the inventory management practices applied currently by Saudi Arabia dairy company (Almarai)?

1.5 Research Objectives:

There will be three main objectives of this research and they are as follows:

- To investigate on the inventory management practices of Saudi Arabia dairy companies such as Almarai company.
- To assess the effectiveness of inventory management practices applied by Saudi Dairy company (Almarai).
- To determine the challenges of the inventory management practices that are encountered Saudi Arabia dairy companies (Almarai).

1.6 Scope and limitation of the study:

The purpose of this study is to examine the inventory management practices of the Almarai dairy firm. Moreover, to determine the influence of inventory management practices on Almarai's operational efficiency by examining the effect of inventory management, the factors that contribute to the effect of inventory management, and the current issues they face. The study will take place in Riyadh, Saudi Arabia, and will be confined to workers, such as staff, supervisors, and engineers of the Almarai firm who reply to a survey about inventory management practices. The survey are managers and executives from a variety of departments, including finance, warehousing, and purchasing, planning, assembly, department of sales and marketing and production. This study also examined the management of inventory practices, the effect of inventory, the problems faced by respondents and the collection of respondent suggestions. Data were acquired from the company's management and senior levels, with a particular emphasis on individuals accountable for and managers of inventory management on daily basis.

The research will be undertaken quantitative to aid in the understanding and improvement of inventory management practices. This research will inform the production industry by serving as a reference for improved inventory management procedures.

1.7 Significance of study:

This research assists the inventory managers of Saudi Arabia Diary Company in comprehending how effective inventory management may significantly lower organizational expenses, increase organizational operational efficiency, and facilitate the achievement of strategic goals. In addition to being crucial for providing further results on the topic, the study may also serve as a foundation for future research on similar topics.

1.8 Thesis outline:

This research will be about the influence of inventory management practices on operational efficiency.

- Chapter one will discuss introduction, background, problem statement, research questions, research objectives, scope and limitation of the study and significance of study.
- Chapter two will discuss the overall literature review, such as all past and previous studies.
- Chapter three discussion will be encompassing the theoretical concepts that further provide information regarding influence inventory management practices on operational efficiency.
- Chapter four data analysis and discussion what found when analysed research data.
- Chapter five conclusion and recommendation of the overall result of study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The purpose of this chapter on providing the theoretical models that are related to the topic of the research study. The chapter also presented the findings of the past research in regards to the influence of inventory management practices on operational efficiency, with a particular emphasis on special attention paid to Saudi Almarai Diary Company. By reading the relevant kinds of literature, the dependent variables and independent variables were defined. At the end of this chapter, the proposed research framework can describe the theory.

2.2 Saudi Almarai Diary Company

Almarai Manufacturer is a food manufacturer in Saudi Arabia. The company was founded in 1977 and is headquartered in Riyadh. In addition to dairy drinks, yoghurts, and sweets, the company also manufactures bread items, dinners, and chicken. Almarai also operates agricultural properties in Argentina (Almarai co ltd, 2013). Almarai is the brand name under which the firm advertises its products. The company's products are distributed throughout the Gulf Cooperation Council (GCC).

The firm began modestly and has grown to become one of the greatest dairy and food corporations in the world. It began as a dairy and laban processing enterprise before diversifying into other goods such as fruit juice, bread, and chicken. With the development of new product lines, the Almarai developed into a food firm. Additionally, Almarai has been prosperous, with yearly revenues exceeding SAR1 billion over the last two decades. Over the next decade, the corporation more than quadrupled its sales. The company's sales increased to over SAR23 billion in 2011. The firm has developed as it attempts to serve consumers with unmatched high-quality goods, investing

in world-class infrastructure, farms, distribution networks, and manufacturing processes (Almarai co ltd, 2013). For example, Almarai Hosten cows are extremely prolific, producing double the quantity of milk that European cows produce.

2.3 Inventory Management Practices

Inventory management methods are critical to the success of any organization, but they are especially important in manufacturing Inventory. As such, (Inegbedion, H., Eze, S. C., Asaleye, A. J., & Lawal, A. I. 2019). Inventory management practices (IMP) are the varied practices of a person. Companies to guarantee that inventories are maintained at maximized service at optimum levels costs are kept to a minimum. As a result of mainly concerned with maintaining a demand-and-supply equilibrium provision via the use of both control and monitoring as a result of production and procurement orders provide for a steady stream of raw materials and high-value activities management of inventory methods guarantee that manufacturing companies are possessing the ability to regulate themselves inventory. According to,(Kontuš, E. (2014) & Benjamin, A. F. 2016). An inventory management strategy is designed to ensure that a company's inventory needs are met on time and in the most cost-effective manner possible, increasing benefits while reducing expenses of maintaining inventory. A well-functioning inventory management system guarantees that the correct quality of supplies are available in the right quantities at the right time and in the right location with the right investment. According to, (Jam and Narang,1986). Inventory management, as defined by (Natabo, S. , 2019) is a procedure for keeping track of, inspecting, distributing, and controlling supplies.

2.3.1 Just in Time (JIT)

The inventory management system benefits from JIT. After using JIT, company’s performance improved and manufacturing expenses decreased. The employees' comprehension of JIT and its benefits was crucial for executing it with ease and effectiveness. However, effective

communication and cooperation from suppliers play a crucial role in the success of these models, since all parties contribute equally (Bashar and Hasin, 2019). The Just in Time was an inventory management practices with the objective of maintaining just sufficient material at the right place and at the right time in order to make first the right quantities of inventories. According to (Carison, 2002).

In the Alrawabi diary and beverage company sectors of United Arab Emirates, management development efforts play a crucial role. Since JIT has shown to be a potent instrument for Emirates manufacturers to compete on the global market and as a survival strategy, it should be given priority. Additionally, (Karim, S., 2019) it is believed that supervisors should be given with the JIT implementation procedure in order for them to comprehend the waste classifications and identification route. This allows the supervisor to decrease waste production. The Kaizen philosophy has been utilized to improve JIT.

2.3.2 Material Requirement Planning (MRP)

Following inventory practices such as strategic supplier relationship, just-in-time approach, materials need planning, and inventory cost control, (Okuoyibo, 2019) said that the success and efficiency of the manufacturing plant could be accomplished. According to (Saleem, 2020), the automated inventory management system had increased the inventory management efficiency of any firm. The conclusion is reached after examining the positive contributions of Radio-frequency identification (RFID) technology, Electronic data interchange (EDI), and Material requirements planning (MRP) system to the company, with the risk taken by the company being able to be minimized through the risk management process (Saleem, 2020).

MRP is a computer-based system that has provided its customers with a tried-and-true solution for controlling on-hand stock. The MRP is a logical planning system that nets gross requirements for dependent demand . MRP has aided businesses, particularly the oil and gas industry, in attaining

their management objectives. According to (Pratiwi and Santosa, 2020), the challenge posed by lot size in MRP is difficult to resolve since it incorporates several factors. The amount in each lot is predetermined, and the MRP suggests using the product in an economical manner by minimizing slow-moving stockpiles. Moreover, (Sethi, 2020) MRP techniques required in the food business are unusual since the government sets the regional minimum wage.

2.3.3 First In, First Out (FIFO)

To optimize FIFO in green supply chain inventory management in industry, particularly for food company components. Concentrating on identifying the excess and shortage required for FIFO in green supply chain stocks reduces the total cost of the supply chain. Applying FIFO techniques to a green supply chain inventory model of the food components sector results in improved inventory optimization (Ajay, Kapil, *et al.*, 2020).

2.4 Inventory Management Practices Theory

Several inventory management best practices (Just-in-Time, Material Requirement Planning, First In, First Out, Forecasting, Collaborative Planning and Replacement, Automatic Replenishment, and Material Requirement Planning) succeed. Despite this, that there is a lack of understanding and respect for such things, according to actual data how the techniques are implemented in the Kingdom of Saudi Arabia as well as their practical importance.

The manufacturing sector, the lack of awareness and limited implementation of these forward-looking ideas It's possible that advances in inventory management methods are to blame for the issuing a fine for wasting raw material, increasing production time, losing revenue, reducing product availability and inability to meet demand rising manufacturing costs and concerns about product quality are all threatening to devastate the industry. Therefore, there seems to be a huge gap between the theoretical and the practical. Inventories as well as a realistic strategy based on the realities of production the need to bridge the theoretical and practical divide cannot be

overstated. Here are a few theories to consider the best ways for inventory management practices. According to *(Natabo Sophia, 2019).*

2.4.1 Strategic Choice Theory

In the strategic choice theory, management decision had a significant efficiency on the firm's success. Moreover, the strategic choice theory focused on the link between efficiency of the firms and the management choices as well as external and internal environment relationship. Developed a model of strategic choice that illustrated the interdependence of the environment, organizations, their actions, and overall company success. The model placed a premium on achieving a higher level of efficiency in order to maximize efficiency, particularly when faced with limited resources; however, the strategic theory failed to place a premium on contextual factors such as the environment, technology, and degree of operation, and instead focused exclusively on how the structure of a business contributes to it is efficiency *(*Michelson, 2013*)*.

The concept emphasized achieving a better degree of efficiency in order to maximized efficiency, particularly in light of few resources; yet, strategic theory was unable to place a higher premium on contextual factors, like the surroundings, Taken into consideration both the technology and the degree of operational efficiency and only assessed how the firm's structure of a corporation contributes to its efficiency. Inventory management strategies were one of the options examined by management. When making decisions on how to enhance a firm's efficiency. The research study targeted at assisting us in comprehending the various inventory management systems available. Which managers make in order to enhance the consumer firm's efficiency in terms of quality, efficiency, optimum production for production and on-time delivery.

2.5 Challenges in inventory management practices

The challenges in inventory management practices involved such as demand variations, reverse logistics, seasonal fluctuations, and stockless policy in inventory management.

2.5.1 Demand Fluctuation

The demand fluctuations is the gap between customers' needs and demand. Therefore, the companies have to account for the demand fluctuations which are caused due to the high consumption and product popularity. For example, during the time when most of the diary and beverage companies reopen in kingdom of Saudi Arabia after the public holidays, the manufacturers of diary and beverage encounter a mammoth challenge to supply all the requested items which a customer's needs because this is the time when the demand will fluctuate more due to high consumption and product popularity (Patil, H., & Divekar, B. R, 2014).

2.5.2 Reverse Logistics

Reverse logistics is a collection of operations carried out after a product has been sold in order to refund value and bring the product's lifespan to a close. Therefore, reverse logistics is one of the largest obstacles that dairy and beverage firms must overcome in order to increase consumer happiness and revenue. Due to the difficulty of massive product returns, reverse logistics management is essential for survival. Returned items must be separated into several categories to determine their reusability. (Patil, H., & Divekar, B. R, 2014).

2.5.3 Stock Outs

A stock out occurs when inventory becomes insufficient, prohibiting the purchase or shipment of an item, resulted in loss of sales. Most of times diary and beverage carry lesser inventory to reduce cost and the benefits of carrying lower inventory are widely acknowledged. Meanwhile, such a policy increases the risk of stock outs. Stock outs can negatively influence on diary and beverage companies in several ways. Diary and beverage companies who experience stock outs encounter

decrease in sales and decrease in customer satisfaction, customers might switch to competitors and there would be more back-end costs (Rell and Snyder, 2009).

2.5.4 Managing SKU

The process of implementing, sustaining, and improving an alphanumeric SKU system to accurately identify and arrange your inventory. Therefore, the managing SKU challenge is mostly encountered by the diary and beverage companies in which they have the problem of managing inventory information for various SKUs for each item shown on the software. This is mainly because each item can have several sizes and flavor (Jessica, Y, 2021).

2.6 Operational efficiency

Operational efficiency refers to an organization's capacity to minimize waste in terms of effort, time, and raw materials while still providing high efficiency and high quality with optimum production and on time delivery service or product (Alexander S. Gillis, 2021). Furthermore, Service and distribution organizations can benefit significantly from efficiency initiatives since they do not need the purchase of new technology machine to make considerable benefits. Indeed, the first step is often to improve management of team, processes, and information in order to eliminate waste and increase customer value (Johnes, T., 2019).

2.6.1 Quality

The quality is the handler throughout the distribution chain, quality implies something different. Dairy quality encompasses both sensory characteristics that are immediately apparent to the human senses and hidden characteristics like as safety and nutrition that need specialized equipment to (Shewfelt, 1997). A Diary, fruit or vegetable's quality deteriorates as it travels from harvest and factory to consumer. The relative of various quality features varies according to the stage of handling, purchase, and consumption. Which quality is then determined by the consumer perspective. Understanding the diverse perspectives of postharvest distribution actors is critical for

any effort to enhance the quality of a Dairy, fresh fruit or vegetable for the customer According to *(Shewfelt, R. L.1999)*. The excellent quality of the a diary given by firm earns them a high global taste a source of envy that must be protected and strengthened by a sustained commitment to the growth of high-quality nutritious, notwithstanding the ongoing quest for cost efficiency (Harvey & Green, 1993).

2.6.2 Efficiency

Efficiency is a metric that indicates how effectively firm's resources efficiently are being utilized. Moreover, Firm's efficiency may be considered as an intermediary product, serving as a means to an aim, namely greater firm's efficiency. Furthermore, Efficiency measures the relationship between firm's resource inputs (costs in the form of labor, capital, or equipment) and either intermediate outputs such as, numbers treated, waiting time, etc. or end product outcomes, such as strong, heavy duty, quality and efficiency (Palmer & Torgerson, 1999).

- **Key objectives of efficiency**

- The return on investment number may be used to determine the efficiency of your investments.
- Efficiency comes when waste is minimised in order to generate a certain quantity of products or services.
- Efficiency is essential since all inputs are limited.

Effective management at all levels significantly improves a company's efficiency. Management efficiency is essential firm's management that is effective results in a rise in "frozen" in the stock market's asset turnover. As a result of efficient company's management (resources required) will always be essential accessible, efficient and readily available. This will avoid a loss of potential customers or clients (Iliashenko & Shirokova, 2014). Thus, the goal of efficiency is to reduce the

quantity of resources required to create a given result, which includes human time and energy. This may be measured using the ratio of usable output to the entire input, which is a quantifiable notion. Efforts are made to reduce waste while still achieving the intended outcome (Caroline & Michael, 2020).

2.6.3 Optimum Production

The optimum production of quantity, also known as the optimum production of economic order quantity, is the quantity of a product that is most cost effective to order at a certain period. This is a significant point, since holding an excessive quantity of stocks is costly. Not only are you locking up funds that may be better spent elsewhere, but maintaining excess goods may incur needless, administrative, storage, insurance fees and financing.

- **Calculation of annual usage of optimum production**

Annual usage of optimum production simply refers to the quantity of a product that you plan selling in a given year. You may examine prior years' sales figures or, if you have not yet sold the product for a whole year, you can extrapolate the current year's sales (Samuel R. 2019).

Example:

If a company has monthly product of car batteries 100 PCS. Therefore, company has car batteries 1,200 PCS sold within one year.

- **Calculation of optimal order quantity**

The optimal order quantity is the specific quantity of inventory should order in order to keep on warehouse to meet market demand.

Formula:

[2 * (Annual Usage in Units * Setup Cost) / Annual Carrying Cost per Unit]^ (1/2).

Example:

If a company sells 125PCS of solar panels. Therefore, the total setup costs are RM10 and annual holding cost per Piece is RM17.2. [2*(125 * 10)/17.2)^ (1/2) = RM12.057

2.6.4 On time delivery (OTD)

On time delivery, or OTD, is the statistic used to analyze supply chain efficiency. This key performance indicator or KPI demonstrates whether or not a firm is reaching its targets in respect to stated delivery timeframes and is crucial for both monitoring carrier performance and sustaining satisfaction of customers (Zahava, 2022). Meanwhile, when a courier service and brand are measured for on-time delivery rates, it may assist to boost customer satisfaction and repeat purchases.

❖ **Why on time delivery is important?**

- To achieve customer loyalty.
- To avoid customers complaints.
- To keep customer satisfied.

❖ **Different types of OTD KPIs**

- It is time to return to base (Söderlund, 2019).
- It is time to put in the work (Söderlund, 2019).
- Fulfilment or distribution centre shifts (Söderlund, 2019).
- Duration of time spent on site (Söderlund, 2019).

❖ **Important Steps to ensure that on-time delivery service rates are consistently high**

- Connect systems all time *(Zahava, 2022).*
- Optimize dispatch and routing with OTD in mind *(Zahava, 2022).*

- Visibility and automation *(Zahava, 2022)*.
- Have flexible coverage *(Zahava, 2022)*.
- Manage expectations *(Zahava, 2022)*.

2.7 Empirical Literature Review

Almarai is one of the main dairy suppliers to the six countries of the Gulf Cooperation Council. The company's broad sales territory and huge number of employees in the Middle East are connected with a higher accident risk. Therefore, Almarai was compelled to train top executives to assume leadership responsibilities in the security community. The next step for Almarai was to utilize the available safety courses to unify their safety rules across departments while being adaptable to local conditions and regulations. These safety workshops had a direct influence on employees, since they encouraged them to become safety role models. This resulted in a change in business culture from the top down, since senior executives also participated. Almarai is the world's largest dairy farm with 104,500 dairy cows. She can supply milk to 52,000 clients every day on her own (Lavy, Garcia, Scinto & Dixit, 2014). The exceptional cleanliness and flawless operation of the businesses are quite outstanding. Without strong animal welfare and sanitary standards, these kinds of farms would be ineffective. To satisfy environmental considerations, compost is produced from manure. Regarding renewable energy, more improvements are planned for solar, biomass, liquid manure management, etc.

In addition to the company's long-term growth strategy and human resource planning, talent-related human resource management is also tied to the mining industry's assessment and potential personnel. To increase their competitive advantage, we must emphasize human resources management, change management concepts and management methods, the use of appropriate management software for human capital management, the development of potential talent, and the

improvement of information technology and business management to provide the required level of support (Kerzner, 2017). The Almarai SAP-HR system is a common enterprise resource planning (ERP) software package. It combines the abstract ideas and concepts of business management and standardisation with the notion of acquisition and the actual application of technology as a management tool, providing information linked to management services (Tajbakhsh & Hassini, 2015). SAP-HR System is a subsystem of human resource management with flexible operability, clear analytical, systematic, and strategic content, and other multi-functional enterprise content to enhance the features of the system and other subsystems that can collaborate to provide integrated solutions for enterprises with effective management. The eight functional modules of the system, each of which is responsible for a particular area of human resource management, complement one another to produce an all-inclusive human resource management system. Each module includes training, recruiting, performance, employee development, organizational management, personnel management, time management, and compensation expansion. Five kinds of enterprise content needs are met by the following systems.

First, the fundamental system of business content inside corporate human resource management will be efficient and convenient administration and maintenance, such as staff development, management, and preservation of work status information. It can improve the effectiveness of management and other businesses. Second, the use of SAP-HR System on the current development situation of enterprises, staff composition, analyses, manage, and control employee value, on a regular basis with the current disposal of business information and data information management needs and management of state for analysis, to determine if there is sufficient reasonable management system, develop an effective unified management template for the problems identified, to enhance the standardization and instigate the implementation of the system. The third, application of the system of human resource management processes is to

categories and specify the core business of human resource management in order to achieve standardization and streamline human resource management tasks.

Fourth, in the process of online monitoring, open and transparent inspection and approval of the business, and real implementation of the results rapid feedback, the system of indicators of human resources management supervises the work and improves the degree of careful management. Fifth, SAP-HR includes additional information systems and human resources linked to docking, or data integration, data statistics support, and decision support software for staff recruitment and training to give management with a scientific foundation for rationalization. The system may be separated into two elements in terms of technological architecture: a processing platform and an integrated business application platform. As its core, the former human resources is responsible for the centralized management and maintenance of specialized business data, as well as ensuring control of critical processes. The latter is the core data processing application, which samples the data stream from the respective systems on a regular basis, then uses the data, reporting tools, and other means to conduct fusion analysis to provide scientific, objective indicators of business content to support related queries and management, and finally, through separation process operations such as separation of business processes and business show, ensure operational reliability and consistency.

The project is divided into the leading group, project management, and implementation of specific groups such as the group in terms of level, the project is divided into the overall planning group in terms of functionality, business functions group, a standard set of data, and the like groups related art in terms of organizational architecture. The teams work together well to increase the effect of the level of human resource management since there is clear responsibility at all levels.

2.8 Conceptual Framework

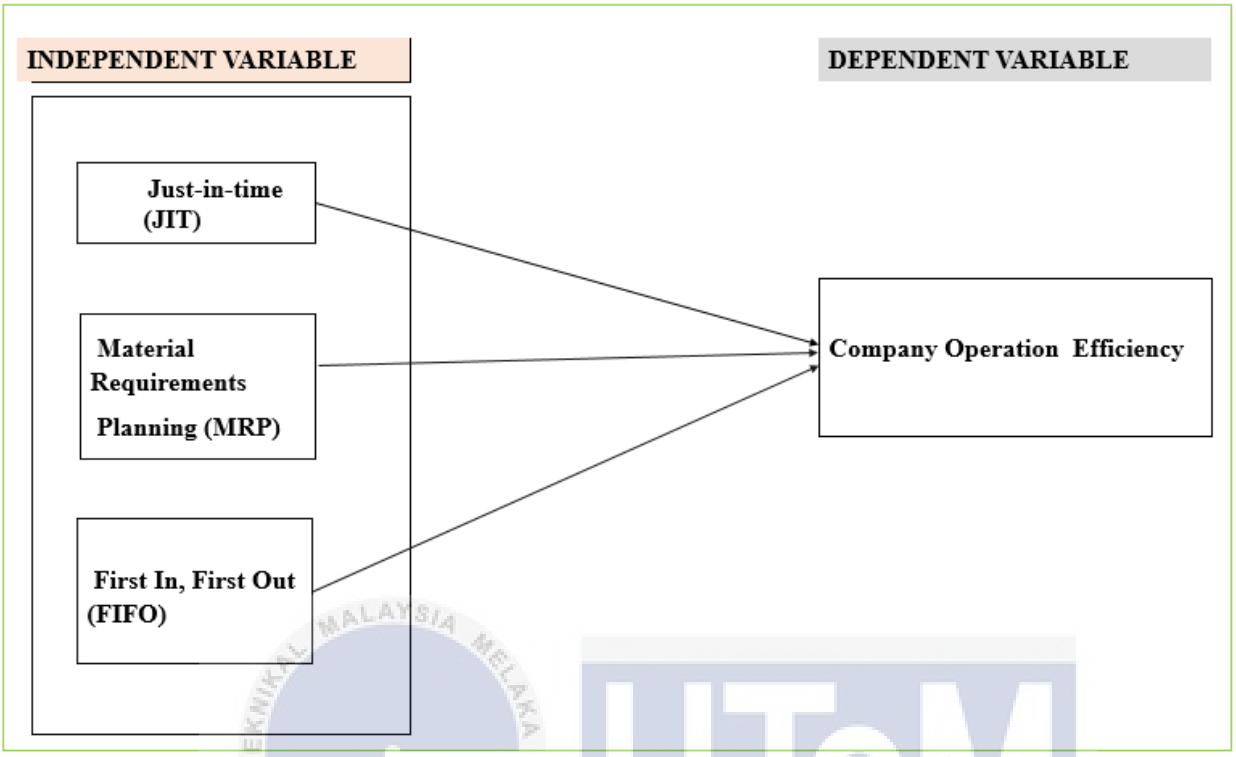

Figure 1.1: Conceptual framework of the research

2.9 Hypotheses

H1: Just-in-time (JIT) positively influence the company operational efficiency.

H0: Just-in-time (JIT) has no influence the company operational efficiency.

H2: Material Requirement Planning (MRP) positively influence the company operational efficiency.

H0: Material Requirement Planning (MRP) has no influence the company operational efficiency.

H3: First in, First out (FIFO) positively influence the company operational efficiency

H0: First in, First out (FIFO) has no influence the company operational efficiency.

2.10 Summary

In this chapter, the researcher have discussed on the influence of inventory management practices on operational efficiency. The proposed research framework consists of dependent and independent variables. The independent variables on inventory management practices tools. The inventory management practices tools including just in time (JIT), Material requirements planning (MRP) and First in, First out (FIFO). The dependent variables on operational efficiency tools, such as quality, efficiency, optimum production and on the time delivery. Last but not least, the following chapter will be discussed about the research methodology.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

In this part, the author will elaborate on the stages, techniques, and samples utilized for data collection, as well as the apparatus and equipment used for data processing. In addition, the researcher explains how this study was undertaken and why a certain strategy was chosen to conduct the examination. This chapter also outlines a few factors that need to be focused on methodological selections, research design, primary and secondary data sources, research strategy, study location, and time horizon. The objective of this study is to determine how inventory management affects the efficiency of the Almarai corporation. This study employs a survey questionnaire because it facilitates the gathering of a substantial quantity of data quickly, effectively, and precisely. The questionnaire is divided into two sections: a demographic profile and an open-ended question.

3.2 Research Design

After the author has defined the problem statement and completed the theoretical frameworks, the next stage is to plan the investigation. Study design refers to the appropriate processes and methods for gathering and analyzing data to achieve the research purpose. Selecting a suitable study design is crucial for generating accurate and meaningful research results. In this study, the case study research technique is implemented in the form of a quantitative approach (questionnaire) that helps to evaluate more of this study through the responses of the sample population to the supplied questions (Khalid, Hilman and Kumar, 2018). To preserve a social distance throughout the epidemic, the survey questions will be performed using a Google form or survey monkey and a. The Google form survey will be delivered to the interviewee. The structured survey question will be separated into three sections: statistical analysis and descriptive analysis. The analysis of the

acquired data on the respondents' responses will be of great use in assessing the study topics. This questionnaire will be better able to investigate better statements or descriptions if more opinions are provided. Following is descriptive research.

3.3 Methodological Choices

This study aims to quantitative the features of individuals, things, groups, organizations, and surroundings. Descriptive research differs from experimental studies as the descriptive research is conducted when there are similar studies conducted by other researchers (Allen ,2019). The final sort of business research is causal research, which seeks to establish the link between independent and dependent variables in terms of cause and effect. The causal research is able to analyze the cause-and-effect relationship between the research's independent variable (Just-in-time (JIT), Enterprise resource planning (ERP), Material requirements planning (MRP), and First In, First Out (FIFO)) and research's dependent variable (company operation efficiency) and connect them.

3.4 Primary and Secondary Data Sources

Both types of data primary as well as secondary data will be applied in this research. Primary data are the data obtained by the researcher using questionnaires, interviews, or experiments expressly for the study's research problems. The researcher provides participants with questionnaires. The participants were expected to answer questions based on their characteristics (demographics), positions, and departments of employment (Driscoll & Brizee ,2020). However, Secondary data are information that has already been gathered from primary sources and is easily accessible to researchers for use in their own studies. It is a type of information that has already been collected. Such data are less expensive and easier to collect than primary data, and they may also be available when original data cannot be obtained (Ghauri et al., 2021). In this study, the researcher gathered secondary data from websites and library databases in order to pick relevant journals, publications, papers, and newspapers for use as data sources.

3.5 Research Location

This study will be conducted in the Kingdom of Saudi Arabia, where the Alamari company is situated. To be particular, the researcher will focus his study on the personnel of the corporation which headquarter is located in Riyadh. The researcher will distribute the questions survey through survey monkey or google form in order to assess data and conclude the study.

3.6 Research Strategy

Research strategy is a way for solving research problem, it is also step-by-step plan of action that gives direction to the researcher's thought process. Experiment, survey, archival and documentary research, case study, ethnographic, active experimentation, deductive approach, and narrative analysis are the methodologies employed (Lewis, P., & Thornhill, A. (2019). The questionnaire survey through google form or survey monkey strategy are being chosen in this study.

3.6.1 Questionnaire Design

A study instrument, a questionnaire that participants will administer themselves, and a form driven by Google Forms have been developed. (Zikmun et al, 2019) state that this is an excellent data gathering technique that can guarantee the information is obtained. The decision is also suitable and correct since the response is objective, consistent, and very near.

The term "population" refers to a group of persons or individuals who have certain traits and who could be included in an investigation. The findings of the sample were based on a specific set of populations that were either directly or indirectly involved. Participants in this study will be asked to identify themselves as belonging to one of the following categories: Managing Director, Head of Department, Executive, Supervisor, or Group Leader in the Warehouse Department, Purchasing Department, Planning Department, Financial Department, or Assembly Department of the Almarai Company in Saudi Arabia. The Almarai company in Saudi Arabia employs a total of one hundred individuals, including ten people working in management positions, twenty people working in

non-managerial positions, and thirty people working as foreign employees. The research will be carried out using a quantitative technique, which makes it easier to obtain better results, which in turn impact the operation efficiency caused by inventory management practises. In a nutshell, descriptive research has been employed for the study. This is a descriptive research is able to explain the respondent's data as well as the degree of organisation that manages inventory, the kind of department that is directly and indirectly involved in inventory management, and the material specifics.

3.6.2 Sampling Design

The sample strategy chosen for this study is a probability sampling approach that does not incur the cost of calculating the chance that everything in the population is related to the model. Consequently, there are about 80 participants will be selected to this investigation including Managing Director, Head of Department, executive, supervisor, and group leader in the warehousing, department of purchasing, planning, financial, and assembly departments of the Almarai company in Saudi Arabia. This will depict inventory management by evaluating the inventory practise, highlighting the obstacles they encountered when putting inventory management into effect, and aiding in the evaluation of the practise utilised by the Almarai company in Saudi Arabia.

Two assessors or subject matter experts participated in the process of data analysis. In addition, cross-sectional studies are appropriate for this research topic. If a researcher is engaged in quantitative research, the case study approach is the most popular method in academia.

Researchers sometimes choose case studies as their research approach without fully comprehending the myriad of circumstances that might influence the results of their investigations (Rashid, Rashid and Warraich, 2019). The researcher is using the google survey or survey monkey method to collect the data for analysing and investigating because quantitative research is very

labour intensive, and the researcher has determined that the sample size is smaller after reaching saturation, so they have decided to proceed with the quantitative study. In addition to this, the tiny sample size makes it difficult to collect data for the investigation (Mason, M., 2010).

The management level employees of Almarai company in Saudi Arabia are the focus of this research, and probability sampling will be used to collect data from the population of interest for the study. This survey is open to all levels of personnel at Almarai firm in Saudi Arabia since it is based on educational quality, position in company, and responsible person for inventory management.

In order to establish the number of respondents who will be gathered for the sampling, the researcher will utilise Krejcie and Morgan as a reference. Regarding the research that will be conducted by the researcher, the sample size will consist of one hundred different questionnaires that will be distributed.

Table 3.1: Sample size for different size and population

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

(Source: Krejcie and Morgan)

Probability sampling methods are being utilised throughout the entirety of this research project. This research will be carried out using a straightforward random sample method, in which participants from the Almarai corporate workforce in Saudi Arabia will be selected at random using a hat.

Experimentations whose purpose is to draw conclusions about the total number of individuals represented in a given example depend heavily on the size of the representative sample they use. For the purpose of this study, a kind of experience was applied in which participants were given the opportunity to reply based on their knowledge and experience with handling.

3.6.3 Pilot Test

Prior to its complete dissemination, pilot tests are conducted on a sample of the target population in order to determine how reliable the results will be. A pilot test is a preliminary test that is conducted on a limited scale and gives the researcher the opportunity to test and comment on the questionnaire. This helps eliminate issues with data capture and problems that arise when respondents answer to the questions. During this research, the pilot test will be carried out first, followed by the distribution of the questionnaire to the respondents. Within a week. Their responses and remarks will be taken into consideration while developing the final survey questionnaire for this investigation.

3.7 Time Horizon

Studies that are longitudinal and studies that are cross-sectional are the two primary categories of time spans. Studies that collect information in a continuous manner over an extended period of time are known as longitudinal studies. Even though cross-sectional studies are the type of research that are carried out and collect data just once, the process might take days, weeks, or even months. Because of the constraints imposed by time, this investigation relied on cross-sectional studies rather than longitudinal ones.

A survey that is distributed in the form of a questionnaire is what is known as cross-sectional research. The researcher was collecting study questionnaires in an unaltered version of the research setting. As a result, researchers have distributed questionnaires to members of Almarai company's personnel in this study in order to obtain sufficient data concerning the inventory management methods utilised by the company. As a result, the researcher will have less than a month to compile the responses from all one hundred respondents since he is running out of time.

3.8 Reliability and Validity

There is a connection between reliability and the measurement of dependability. The participant will complete a tool that is meant to measure the level of customer happiness, and each time the test is finished, it will return a response that is almost same. Although it is not possible to obtain a precise measure of dependability, an approximation of its level can be arrived at using a number of different approaches. First, there is the similarity, which may be determined by the item-to-total correlation, the split-half dependability, the coefficient Kuder-Richardson, and the alpha Cronbach's Alpha. When correlations are high, this suggests that the system is dependable; when correlations are low, this suggests that the system may not be reliable (Sijtsma, K. , 2019).

In the quantitative research that is conducted within the social sciences, the quality of the study is evaluated based on both its reliability and its validity (Saunders et al., 2016). The terms replication and consistency are included under the term reliability. The term "validity" relates to the suitability of the measurements that were employed, the outcomes of the correctness of the analysis, and the generalizability of the findings. When a series of questions in a survey are shown to be statistically connected with a certain analytical element or outcome, the survey's questionnaire is said to have proved its internal validity. While the focus of external validity is on the topic of whether the findings of a research study can be generalised to other relevant situations, internal validity looks at whether or not the findings can.

Cronbach's Alpha is the method that the researcher employs to evaluate the dependability of the variables. The value of the alpha coefficient can take on any value between 0 and 1. When the values of Cronbach's Alpha reveal that they are greater than 0.7, this is regarded as acceptance; when they are greater than 0.9, this is regarded as good; and when they are equal to or greater than 0.9, this is seen as excellent. However, if the value of Cronbach's Alpha is less than 0.6, it is

regarded as unsatisfactory, and if it is less than 0.5, it is regarded as completely unsuitable. When the value gets to a negative number, it indicates that there is something incorrect with the data.

Table 3.2: Cronbach's Alpha Coefficient Range and Strength of Association

No	Coefficient of Cronbach's Alpha	Reliability Level
1	More than 0.90	Excellent
2	0.80 - 0.89	Good
3	0.70 - 0.079	Acceptable
4	0.6 - 0.69	Questionable
5	0.5 - 0.59	Poor
6	Less than 0.59	Unacceptable

Therefore, the researcher decided to conduct the survey in the form of a questionnaire in order to attain reliability. In order to establish the impact that inventory management practises have on the operational efficiency of the Almarai firm, a questionnaire will be distributed to employees working in Almarai company in Saudi Arabia.

3.9 Data Analysis Method

After questionnaire data are gathered, the Statistical Package for the Social Sciences (SPSS) is used to analyse the data acquired from participants. This study utilizes descriptive analysis, Pearson's correlation analysis, and multiple regression analysis.

3.9.1 Descriptive Analysis

descriptive analysis is It is one of the most crucial phases for undertaking statistical data analysis. It provides a conclusion on the distribution of the data, aids in the detection of typos and outliers, and enables the researchers to spot similarities among the variables. As a result, it prepares the researchers to carry out additional statistical studies.

The objective of descriptive analysis is to determine the central tendency and dispersion of variables through numerical description and comparison. In general, descriptive statistics are measured using means, medians, modes, and standard deviation. In this study, descriptive analysis is utilised to examine the respondents' gender, age, employment, and level of education. The raw data is transformed into an easier-to-understand format for a more accurate demographic description of responders.

3.9.2 Pearson's Correlation Analysis

The Pearson correlation coefficient is a type of statistical test that measures the degree to which there is a statistical connection or connection between two continuous variables. It was named for the man who bestowed the honour, Karl Pearson. Because it is based on the theory of correlation, it has established a reputation for being the most reliable method for assessing the degree to which two factors are connected with one another. This is because the theory of correlation coefficients serves as its foundation. It gives indication of the strength of the relationship or association, and the path of the connection between the two factors. Additionally, it gives data on the direction of the relationship between these two variables (Regoniel, P. , 2018).

In order to compute the linear relations intensity that exists between the dependent variable and the independent variables, this research will make use of the Pearson's Correlation analysis. The Pearson correlation coefficient ranges from -1 to +1, with -1 representing perfect negative correlations and +1 representing perfect positive correlations. On the other hand, a score of 0 indicates that there is no relationship link.

The Pearson coefficient, which is also known as the Pearson Product-Movement Correlation, is a statistic that is frequently employed in contemporary information for the presentation of data and in the development of curve fitting software. Determining the strength of a link between independent factors and dependent variables is another aspect of the problem. In most cases, the

Pearson Coefficient is the statistical tool that is utilised to determine the degree to which a sample link exists. A complete linear negative relation is shown by r values in the range of -1, whereas r values in the range of 1 indicate a linear positive relation.

Table 3.3 : Value of the correlation coefficient

Correlation Coefficient Value (*r*)	Direction and Strength of Correlation
-1	Perfectly negative
-0.8	Strongly negative
-0.5	Moderately negative
-0.2	Weakly negative
0	No association
0.2	Weakly positive
0.5	Moderately positive
0.8	Strongly positive
1	Perfectly positive

Table 3.4: Strength value of correlation coefficient

Size of Correlation	Interpretation
.90 to 1.00 (−.90 to −1.00)	Very high positive (negative) correlation
.70 to .90 (−.70 to −.90)	High positive (negative) correlation
.50 to .70 (−.50 to −.70)	Moderate positive (negative) correlation
.30 to .50 (−.30 to −.50)	Low positive (negative) correlation
.00 to .30 (.00 to −.30)	negligible correlation

3.9.3 Multiple Regression Analysis

The statistical technique known as multiple regression is a technique that may be used in the research of the relationship that exists between a single dependent variable and a number of independent variables. This relationship can be investigated using the multiple linear regression approach. The goal of conducting a multiple regression analysis is to estimate the value of a single predictor variables by attempting to make use of a large number of independent variables whose attributes have been already calculated. This is accomplished by making use of the variables in the analysis whose values have already been determined. Each predictor value is given a weight, with the weights indicating the proportionate contribution that each predictor value has made to the total forecast (Usop, H. , 2017).

The Multiple Regression Analysis, often known as MRA, is a statistical technique that examines the relationship between three or more independent variables. It is a piece of statistical software that allows for the examination of the ways in which a dependent variable is connected to a number of independent variables. When it is understood that there is a connection between the many factors and the dependent variable, nearly all of the information on the dependent variable may be used to make an accurate forecast. It is anticipated that there will be a linear connection between the dependent variable and the independent variable. Linear multiple regression analysis can be used for three primary purposes: categorisation of the highest point where the influence of an independent variable is felt; estimation of the repercussions of transition or affects; and analysis of forecasting and future value of Multiple Regression Analysis (MRA), that is regularly used to determine by the strength of a related connection and other independent variables (Usop, H. , 2017).

3.10 Summary

This chapter provides a concise summary of how the study is going to be analysed, including a discussion of the quantitative approaches, including research design, demographic and sample procedures, and data collection methods that have been used. The description of respondents drawn from the demographic that was targeted will offer a superficial detail or outcome that contributes to obtaining the finding of this study. This chapter will also make it possible to approach proper procedures in this review, in addition to ensuring reliability and validity. The third chapter sum up the researcher's analytical methodologies, strategies, sample frame, and data gathering procedure. The purpose of the data collection is to determine the effect of inventory management practises on the operational efficiency of the Almarai company.

CHAPTER 4

DATA ANALYSIS AND DISCUSSION

4.1 Introduction

In the previous chapter, the researcher design and develop the survey questions and distribute it online to the participants for collecting the data of this study. Moreover, in this chapter, the researcher will analyze and provide the results of the respondents' data analysis. Version 26.0 of IBM's Statistical Package for the Social Sciences (SPSS) is used to evaluate the obtained data. This chapter employs descriptive analysis, Pearson's Correlation analysis, Multiple Regression Analysis, and ANOVA analysis to identify the connection between dependent and independent variables. A Google Forms-based online survey is used to distribute the questionnaire to 355 respondents. Part A of the questionnaire consists of respondent demographics, Part B of inventory management techniques employed by the Almarai firm, and Part C of the influence of the inventory management system on Almarai's operational efficiency. The purpose of the study was to determine how different kinds of people might comprehend the relationship between inventory management techniques and organization performance in the Almarai company in different ways. So, the researcher has distributed the questionnaire to a subset of Almarai's employees in order to get the intended sample. Researchers utilize Statistical Package for Social Science (SPSS) to measure and analyze descriptive study data, Pearson correlation coefficient, and multiple regression analysis in order to produce results.

4.2 Pilot Test

Prior to data collection, a pilot test is carried out to contact the intended respondents. The pilot test is a small-scale experiment designed to help the researcher avoid issues related to data recording. For the pilot test, about 50 participants are picked. The pilot test was finished by the researcher in two weeks. The purpose of the pilot study is to evaluate the validity of the questionnaire and the accuracy of the data.

4.3 Reliability Test

The reliability test employs Cronbach's Alpha. It measures the internal consistency of the scale's components. It serves to ensure that positive and negative questions are not mixed. A range of Cronbach's Alpha coefficient values larger than 0.9 is regarded as exemplary for the association's strength. It indicates that the data is highly reliable.

Table 4.1: Cronbach's Alpha for Pilot Test

Variables	Dimensions	No. of Items	Cronbach's Alpha
DV	Operational Efficiency	4	0.858
IV	Just In Time (JIT),	4	0.821
IV	Material Requirement Planning (MRP),	4	0.898
IV	First In First Out (FIFO))	4	0.887

4.4 Descriptive Statistics on Demographic Background

A descriptive analysis is used to analyze the demographic background of participants which includes gender, age, educational level, department of work, position of the work and duration of the work at Almarai company. In this subtopic, researchers assess and examine the inventory management procedures of the Almarai dairy firm using demographic profile analysis in the questionnaire. As stated previously, Section A's demographic profile includes the respondent's age, level of education, and duration of employment with the organization. The data analysis suggests that 355 respondents who completed the questionnaire provided basic demographic information.

4.4.1 Age of Participants

Table 4.2 shows the ages of participants from Almarai company which are 20 years old to 30 years old. It is apparent that majority of participants were aged 41 to 59 years old, they are 143 participants and represent (40.3%). The next followed by 20 to 31 years old which approximately 108 participants and they represent (30.4%), 104 participants of 31 to 40 years old and they represent (29.3%). As the results, this study reveals that participants between the age of 41 to 59 are dominant in this survey.

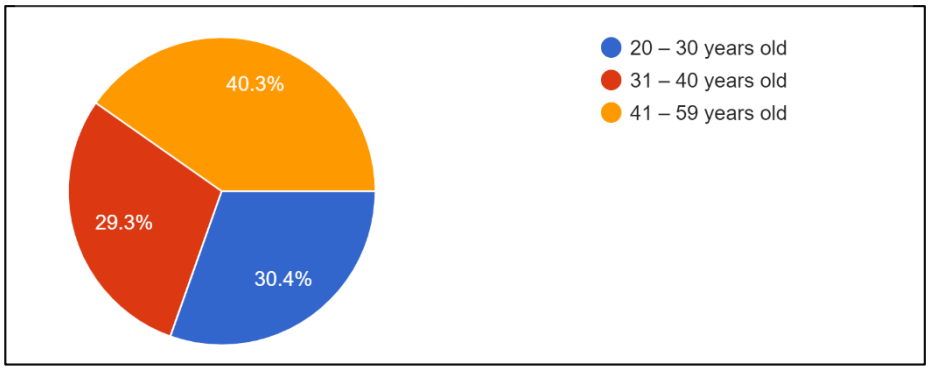

Figure 4.1: Age range of Participants

Table 4.2: Age of Participants

		Frequency	Percent	Valid Percent
Valid	20 - 30 years old	108	30.4	30.4
	31 - 40 years old	104	29.3	29.3
	41 - 59 years old	143	40.3	40.3
	Total	**355**	**100.0**	**100.0**

4.4.2 Educational Level

Table 4.3 shows the educational level of 355 participants. The educational level starts from Technical or occupational certificate level to PhD level. The majority of participants have master's degree level which is 213 participants, and they represent (59.7%) from the overall. The next followed by bachelor's degree level which is 91 participants, and they represent roughly (25.5%), the next corresponding level was the Technical or occupational certificate, where they are around 50 participants involved in this level and they approximately represent (14%), 2 participants only are in a PhD level, and they represent around (0.8%).

Table 4.3: Educational Level of Participants

		Frequency	Percent	Valid Percent
Valid	Technical or occupational certificate	50	14	14
	Bachelor Degree	91	25.5	25.5
	Master Degree	213	59.7	59.7
	PhD	2	0.8	0.6
	Total	**355**	**100.0**	**100.0**

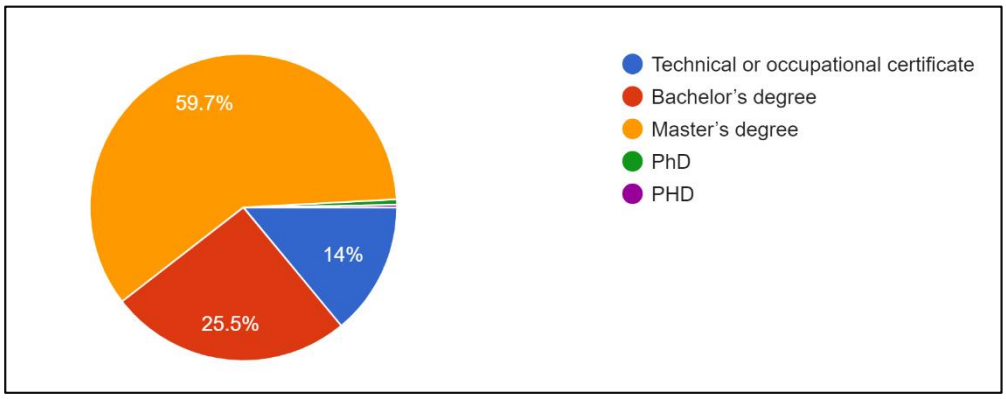

Figure 4.2: Educational Level of Participants

4.4.3 Department of Work

Table 4.4 shows the working department of 355 participants. They start by Assembly Department and ending by Purchasing Department. The majority of participants work in the production department which is 85 participants, and they represent (23.8%) from the overall. The next followed by Financial Department which is 76 participants, and they represent roughly (21.3%), the next corresponding department is the planning department, where they are around 61 participants involved and they approximately represent (17.1%). Moreover, there are around 49 participants work in warehouses department and they basically represent (13.7%). However, for assembly department, there are 45 participants, and they represent (12.6%). 41 of participants are working in purchasing department and they represent (11.5%).

Table 4.4: Department of Work of Participants

		Frequency	Percent	Valid Percent
Valid	Assembly Department	45	12.6	12.6
	Financial Department	76	21.3	21.3
	Planning Department	61	17.1	17.1
	Warehouse department	49	13.7	13.7
	Production Department	85	23.8	23.8
	Purchasing Department	41	11.5	11.5
	Total	**355**	**100**	**100**

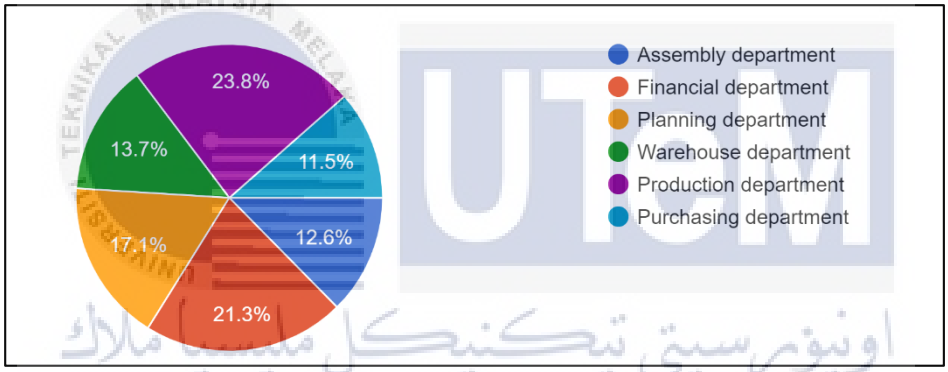

Figure 4.3: Department of Work of Participants

4.4.4 Positions of Participants

Table 4.5 shows the working positions of 355 participants. Starting by Managing Director and ending by Deputy director of planning. The majority of participants are in a position of manager, and they are 108 participants, and they represent (30%) from the overall. The next followed by executives which is 61 participants, and they represent roughly (17%), the next corresponding position is the heads of department, where they are around 56 participants involved and they approximately represent (12.6%). Moreover, there are around 55 participants work group leaders

and they basically represent (15.4%). In addition to that, there are 50 of participants work as accountants and they represent approximately (14%) from the overall. However, for the position of manager director, there are 24 participants, and they represent (6.7%). 41 of participants are working in purchasing department and they represent (11.5%). Other than that, there are 3 participants working as a normal staff and they represent (0.8%), whereas there is only one Deputy director of planning from the participant and represent (0.3%).

Table 4.5: Work Positions of Participants

		Frequency	Percent	Valid Percent
Valid	Managing Director	24	6.7	6.7
	Head of department	56	15.6	15.6
	Group Leader	55	15.4	15.4
	Executive	61	17	17
	Accountant	50	14	14
	Manager	108	30.2	30.2
	Staff	3	0.8	0.8
	Deputy director of planning	1	0.3	0.3
	Total	**355**	**100**	**100**

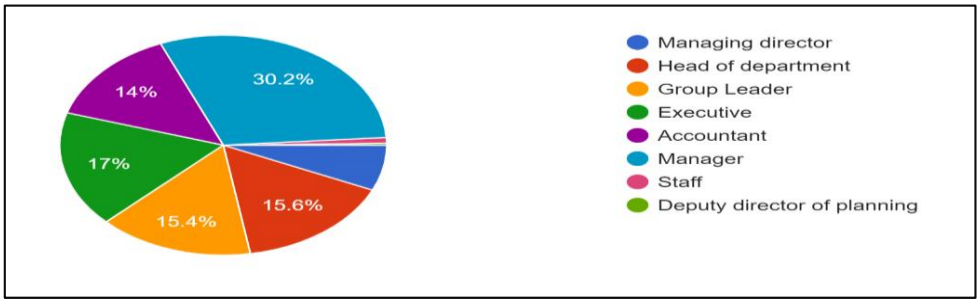

Figure 4.4: Positions of Participants in the Company

4.4.5 Duration of Positions of Participants

Table 4.6 shows the duration of the work in same positions of 355 participants. Starting by Less than one year and ending by above ten years. The majority of participants are work from 6-10 years, and they are 145 participants, and they represent (40.5%) from the overall. The next followed by the above 10 years which is 119 participants, and they represent roughly (30.2%), the next corresponding duration is 1 -5 years, where they are around 79 participants involved and they approximately represent (22.1%). Moreover, there are around 18 participants who work less than one year, and they basically represent (4.2%).

Table 4.6: Positions Duration of Participants in the Company

		Frequency	Percent	Valid Percent
Valid	Less than one year	18	4.2	4.2
	1-5 years	79	22.1	22.1
	6 – 10 years	145	40.5	40.5
	Above 10 years	119	33.2	33.2
	Total	**355**	**100**	**100**

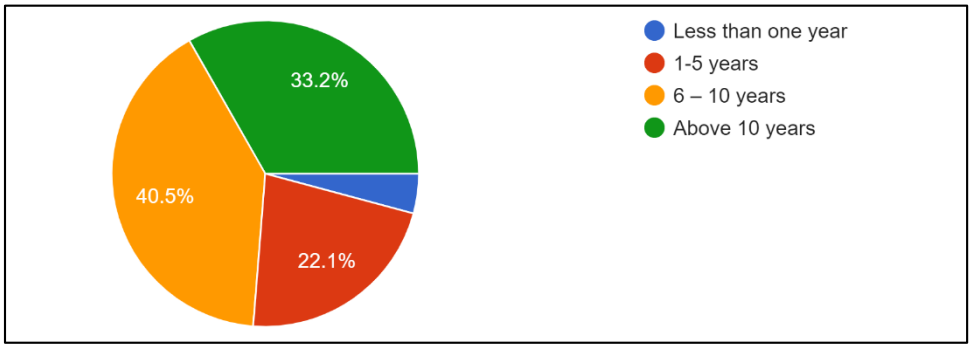

Figure 4.5: Positions Duration of Participants in the Company

4.5 Descriptive Statistics on Independent Variables

The descriptive analysis is used to analyze the independent variables which were Just-In-Time (JIT), Material Requirement Planning (MRP) and First In, First Out (FIFO) in this research. The central tendency measurement was conducted. The mean, medium, and mode of variables is identified by descriptive analysis.

4.5.1 Independent Variable: Just-In-Time (JIT)

The inventory management system benefits from JIT. After using JIT, company's performance improved, and manufacturing expenses decreased. The table 4.7 explains the mean, median and mode of each factor of Just-In-Time (JIT) variables.

Table 4.7: Just-In-Time (JIT) used by Respondents

		Waste Reduction	Product Control	Small Investment	Smooth production
N	Valid	355	355	355	355
	Missing	0	0	0	0
Mean		3.96	3.79	3.85	4.10
Median		5.00	5.00	5.00	5.00
Mode		5	4	5	5

**. Mode: 1 = Strongly Disagree; 2 = Disagree, 3 = Neutral; 4 = Agree; 5 = Strongly Agree

The table 4.7 shows the results of agreement with each of the statement regarding the Just-In-Time (JIT) factor which is used by Almarai company's staffs. Based on the result, the highest mean with the 4.10 are values for the question "Keep manufacturing runs short and simply transition to new items" (Smooth Production) with median of 5. Meanwhile, the mode showed that the participants strongly agree that Just-In-Time (JIT) reduces inventory waste, gives, smaller investments and keeps manufacturing runs short and simply transition to new items.

However, the lowest mean is 3.79 which is regarding the product control from the statement "JIT gives the manufacturer more control" the mode of 4.

4.5.2 Independent Variable: Material Requirement Planning (MRP)

Following inventory practices such as strategic supplier relationship, just-in-time approach, materials need planning, and inventory cost control, (Okuoyibo, A. 2019) said that the success and efficiency of the manufacturing plant could be accomplished. The table 4.8 explains the mean, median and mode of each factor of Material Requirement Planning (MRP) variable.

Table: 4.8 Material Requirement Planning (MRP)used by Respondents

		Optimized inventory management	Review inventory levels	Enhanced manufacturing productivity	Increased labor efficiency and performance
N	Valid	355	355	355	355
	Missing	0	0	0	0
Mean		3.98	3.87	3.91	4.20
Median		5.00	4.00	4.00	5.00
Mode		5	4	5	5

**. Mode: 1 = Strongly Disagree; 2 = Disagree, 3 = Neutral; 4 = Agree; 5 = Strongly Agree

Table 4.8 above shown that the extend of respondent's agreement with each of the statement regarding factor of Material Requirement Planning (MRP)used by staffs in the company. Based on the results, the highest mean with 4.20 are values for the question [Increased labor efficiency and performance] with median and mode values of 5. However, the lowest mean which is 3.87 referred to the question [MRP Review inventory levels] as the median was 4.00 and the mode was also 4. Based on the mode result, the participants strongly agree that MRP used in the company is optimized inventory management, enhanced manufacturing productivity and Increased labor efficiency and performance.

4.5.3 Independent Variable: First In, First Out (FIFO)

To optimize FIFO in green supply chain inventory management in industry, particularly for food company components. The table 4.9 explains the mean, median and mode of each factor of First In, First Out (FIFO) variable.

Table: 4.9 First In, First Out (FIFO) used by Respondents

		Less Cost	Quality Control	Stock Controlling	Warehouse Space
N	Valid	355	355	355	355
	Missing	0	0	0	0
Mean		4.59	3.80	3.98	4.52
Median		5.00	5.00	5.00	5.00
Mode		5	4	4	5

**. Mode: 1 = Strongly Disagree; 2 = Disagree, 3 = Neutral; 4 = Agree; 5 = Strongly Agree

Table 4.9 above shown that the extend of respondent's agreement with each of the statement regarding factor of First In, First Out (FIFO) used by staffs in the company. Based on the results, the highest mean is with value of 4.59 which are the values for the question [First In, First Out FIFO costs less money and time to calculate the actual selling price of merchandise] with median and mode values of 5. However, the lowest mean which is 3.80 referred to the question [First In, First Out FIFO enhanced Quality Control] as the mode was 4. Based on the mode result, the participants strongly agree that (FIFO) used in the company is under low cost and it increases the warehouse space.

4.6 Pearson's Correlation Coefficients Analysis

The research revealed in Chapter 3 that data analysis used Pearson's Correlation. A statistical technique to assess the strength of the linear relationship between dependent and independent variables is Pearson's correlation coefficient (r). It is employed to judge how strongly the data variables are related to one another (Saunders et al., 2016). The criteria for Pearson's Correlation Coefficients were shown in Table 4.7 So, the table 4.10 explains the guidelines of Pearson Correlation Coefficient.

Table 4.10: Pearson Correlation Coefficient

Pearson's Correlation Coefficient (R-values)	Interpretation
±0.70 to ±1.0	Very strong relationship
±0.40 to ±0.69	Strong relationship
±0.30 to ±0.39	Moderate relationship
±0.20 to ±0.29	Weak relationship
±0.01 to ±0.19	No relationship

(Source: Hair, 2007)

The table 4.11 shows that how each independent variable (Just-In-Time (JIT), Material Requirement Planning (MRP) and First in First Out (FIFO) is correlated with the dependent variable operational efficiency.

Table 4.11: Correlation Between JIT, MRP and FIFO

Correlations					
		Just-In-Time (JIT)	Material Requiremet Planning (MRP)	First In Out (FIFO)	Operational Efficiency
Just-In-Time (JIT)	Pearson Correlation	1	.723**	.683**	.656**
	Sig. (2-tailed)		.000	.000	.000
	N	355	355	355	355
Material Requiremet Planning (MRP)	Pearson Correlation	.723**	1	.672**	.663**
	Sig. (2-tailed)	.000		.000	.000
	N	355	355	355	355
First In First Out (FIFO)	Pearson Correlation	.683**	.672**	1	.651**
	Sig. (2-tailed)	.000	.000		.000
	N	355	355	355	355
Operational Efficiency	Pearson Correlation	.656**	.663**	.651**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	355	355	355	355
**. Correlation is significant at the 0.01 level (2-tailed).					

From Table 4.11 above, the independent variables in this research are Just-In-Time (JIT), Material Requirement Planning (MRP) and First in First Out (FIFO) while the dependent variable is operational efficiency. So, the correlation value for the Just-In-Time (JIT) was 0.656 with a significant level 0.000 ($p<0.01$). This showed that there was a strong relationship between Just-In-Time (JIT), and operational efficiency. Next, the correlation value for the types of Material Requirement Planning (MRP) was 0.663 with a significant level 0.000 ($p<0.01$). It was also showed that there was a strong relationship between Material Requirement Planning (MRP) and operational efficiency. Third, the correlation value for the First In First Out (FIFO) was 0.651 with significant level 0.000 ($p<0.01$). There was a very strong relationship between the First In First Out (FIFO) and consumer operational efficiency.

Table 4.12: Correlation Results for Just-In-Time (JIT)

Correlations			
		Just-In-Time (JIT)	Operational Efficiency
Just-In-Time (JIT)	Pearson Correlation	1	.656**
	Sig. (2-tailed)		.000
	N	355	355
Operational Efficiency	Pearson Correlation	.656**	1
	Sig. (2-tailed)	.000	
	N	355	355
**. Correlation is significant at the 0.01 level (2-tailed).			

The table 4.12 shows how Just-In-Time (JIT) is effectively correlated with Operational Efficiency.

This research correlation is between an independent variable which is Just-In-Time (JIT) towards dependent variable which is operational efficiency of the Saudi Almarai company. Table 4.12 above shows the value of the correlation coefficient is 0.656, which is show a positive value for the correlation coefficient. Despite of that, Just-In-Time was significantly correlated to operational efficiency in positive correlation and these two variables have a strong relationship.

Table 4.13: Correlation Results for Material Requirement Planning (MRP)

Correlations			
		Material Requirement Planning (MRP)	Operational Efficiency
Material Requirement Planning (MRP)	Pearson Correlation	1	.663**
	Sig. (2-tailed)		.000
	N	355	355
Operational Efficiency	Pearson Correlation	.663**	1
	Sig. (2-tailed)	.000	
	N	355	355
**. Correlation is significant at the 0.01 level (2-tailed).			

This research correlation is between an independent variable which is Material Requirement Planning (MRP) towards dependent variable which is operational efficiency of the Saudi Almarai company. Table 4.13 above shows the value of the correlation coefficient is 0.663, which is show a positive value for the correlation coefficient. Despite of that, Just-In-Time was significantly correlated to operational efficiency in positive correlation and these two variables have a strong relationship.

Table 4.14: Correlation Results for First In First Out (FIFO)

Correlations			
		First In First Out (FIFO)	Operational Efficiency
First In First Out (FIFO)	Pearson Correlation	1	.651**
	Sig. (2-tailed)		.000
	N	355	355
Operational Efficiency	Pearson Correlation	.651**	1
	Sig. (2-tailed)	.000	
	N	355	355
**. Correlation is significant at the 0.01 level (2-tailed).			

This research correlation is between an independent variable which is Material Requirement Planning (MRP) towards dependent variable which is operational efficiency of the Saudi Almarai company. Table 4.15 above shows the value of the correlation coefficient is 0.651, which is show a positive value for the correlation coefficient. Despite of that, First In First Out (FIFO) was significantly correlated to operational efficiency in positive correlation and these two variables have a strong relationship.

4.7 Multiple Regression Analysis

According to Ahmad and Usop (2011), Multiple regression analysis is a group of statistical techniques for forecasting and elucidating the importance of a dependent variable based on the value of one or more independent variables. In contrast, multiple linear regression uses one dependent variable and two or more linearly related independent variables to create a regression model. In addition, the outcome of the regression analysis is an equation representing the best forecast for the value of a dependent variable given the values of the independent variables. In this

section, the researcher will describe the relationship between the independent variables JIT, MRP, and FIFO and the dependent variable operational efficiency.

Table 4.15: Model Summary of Multiple Regression Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.768[a]	.591	.585	.65150
a. Predictors: (Constant), JIT, MRP, FIFO b. Dependent Variable: Operational efficiency				

Based on Table 4.16, the whole summary of findings revealed that the R value was positive. The coefficient of multiple regression, R = 0.768, suggests a significant degree of correlation. Therefore, the R value is greater than 0.70, indicating that the relationship is strong and positive. Meanwhile, the value of R square is 0.591. This indicates that operational efficiency as a dependent variable is influenced by the independent variable (Just In Time (JIT), Material Requirement Planning (MRP), and First In First Out (FIFO)) by 59.1%, while the remainder (100% - 59.1% = 40.9%) is influenced by factors or causes not discussed in this study.

Table 4.16: ANOVA analysis

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	224.513	5	42.615	106.045	.000[b]
	Residual	156.042	355	.453		
	Total	2489.666	360			
a. Dependent Variable: Operational Efficiency b. Predictors: (Constant), (Constant), JIT, MRP, FIFO						

Table 4.16 showed the F-test value was 106.045 with a significant level 0.000. The significant level was lower than 0.05 thus the researcher can conclude that there is a significant relationship between independent variables (JIT, MRP, FIFO) and dependent variable (Operational Efficiency). The null hypothesis would be rejected as the significant level of regression model is below 0.05.

Table 4.17: Coefficient of Multiple Regression Analysis

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.88	1.49		3.804	.000
	JIT	.122	.052	.124	2.276	.003
	MRP	.163	.055	.160	2.953	.002
	FIFO	.159	.051	.164	3.145	.003
a. Dependent Variable: Operational Efficiency						

Based on Table 4.17, Just in Time (JIT), Material Requirement Planning (MRP), and First In First Out (FIFO) have a positive relationship with operational Efficiency in Almarai company. The result of regression analysis shown in Table 4.17 is there are significant relationship between Just in Time (JIT), Material Requirement Planning (MRP), and First In First Out (FIFO) with operational efficiency in the company as the P value is 0.003, 0.002, and 0.003 respectively.

The operational effectiveness of the Almarai Saudi Company is significantly impacted by the first element, Just in Time (JIT), because its value was less than 0.005, yielding a result of 0.003. With a value of 0.002, which is still below the threshold of 0.005, the second component, Material Requirement Planning (MRP), also exhibits a substantial operational efficiency as a dependent variable. With a value of 0.003 and less than 0.005, the third element, known as First in First out (FIFO), likewise has a substantial association to operational efficiency.

4.8 Hypothesis Testing

If significant is higher than 0.05, Ho will be accepted and Reject H1, however, if significant value is less than 0.05 then the H1 will be accepted and H0 gets rejected.

Table 4.18: T Value and Sig. Value

Independent Value	T Value	Sig. Value	Result
Just In Time (JIT)	2.276	.003	**Accepted**
Material Requirement Planning (MRP)	2.953	.002	**Accepted**
First in First Out (FIFO)	3.145	.003	**Accepted**

4.8.1 Hypothesis Testing 1

H1: There is a significant relationship between Just-in-time (JIT) and operational efficiency of the Almarai company

H0 There is no significant relationship between Just-in-time (JIT) and operational efficiency of the Almarai company.

4.8.2 Hypothesis Testing 2

H2: There is a significant relationship between Material Requirement Planning (MRP) and operational efficiency of the Almarai company.

H0: There is no significant relationship between Material Requirement Planning (MRP) and operational efficiency of the Almarai company.

4.8.3 Hypothesis Testing 3

H3: There is a significant relationship between First in, First out (FIFO) and operational efficiency of the Almarai company.

H0: There is a significant relationship between First in, First out (FIFO) and operational efficiency of the Almarai company.

4.9 Discussion

The data analysis results showed that there is a significant relationship between Just-in-time (JIT), Material Requirement Planning (MRP), First in, First out (FIFO) and operational efficiency of the Almarai company.

RO1: To study and investigate the relationship between inventory management practice and operational efficiency of Almarai company.

According to (Inegbedion, H., Eze, S. C., Asaleye, A. J., & Lawal, A. I. 2019) stated that the inventory management practices (IMP) are the varied practices of a person. Companies to guarantee that inventories are maintained at maximized service at optimum levels costs are kept to a minimum. It has been proved that the mode showed that the participants strongly agree that Just-In-Time (JIT) reduces inventory waste, gives, smaller investments and keeps manufacturing runs short and simply transition to new items. However, the lowest mean is 3.79 which is regarding the product control from the statement "JIT gives the manufacturer more control" the mode of 4.

Based on the result, the highest mean with the 4.8 are values for the question **"**Keep manufacturing runs short and simply transition to new items" (Smooth Production**)** with median of 5**.** Meanwhile, the mode showed that the participants strongly agree that Just-In-Time (JIT) reduces inventory waste, gives, smaller investments and keeps manufacturing runs short and simply transition to new items.

RO2: To assess and analyze the effectiveness of inventory management practices on operational efficiency of the company.

According to (Benjamin, A. F. 2016) stated that inventory management strategy is designed to ensure that a company's inventory needs are met on time and in the most cost-effective manner possible, increasing benefits while reducing expenses of maintaining inventory. They also stated

that inventory management practices always increase labor efficiency and performance. This has been proved as the mode shows that the participant strongly agree that Material Requirement Planning (MRP) Increase labor efficiency and performance as well as enhance manufacturing productivity with median and mode values of 5 as shown in table 4.9.

RO3: To study the relationship between the inventory management practices (First in, First out (FIFO) on operational efficiency of the company.

Concentrating on identifying the excess and shortage required for FIFO in green supply chain stocks reduces the total cost of the supply chain and increase the warehouse space (Natabo, S., 2019). This has been proved as the mode shows that the participants strongly agree that First In, First Out (FIFO) used in the company is under low cost and it increases the warehouse space, and the mode values of these two essential factors was 5 as shown in table 4.10.

Based on the all mentioned results, the researcher found that there is a significant relationship between Just-in-time (JIT), between Material Requirement Planning (MRP), First in, First out (FIFO) and operational efficiency of the Almarai company. All the three independent variables are effectively correlated with the dependent (operational efficiency).

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Introduction

In this chapter, the researcher addressed the overall result's conclusion. The findings' summary will be presented. In the first part of this chapter, the overview of the findings is developed, while the justification of the study aims is described in the second section. The results are measured by using Multiple Regression Analysis in order to determine the acceptance of this factor or rejection. The limitations of the study are examined in the third part, and recommendations for further research are provided in the 4th part. The classification of the explanation for the discussion is based on the research goals. In addition, this chapter will explore the implications, limitations, and future study suggestions. Moreover, this study seeks to accomplish the research purpose. Therefore, the researcher employs quantitative methodology to fulfil the purpose of the study by selecting Saudi Arabia Almarai company employees as respondents.

5.2 Summary of the Findings

The researcher concluded the demographic variable data analysis. The overall number of respondents was 355, and their demographic background information included age, degree of education, employee roles, department of employment, and duration in those positions. From the observed data, the major age of the participants was from 41 to 59 years old. However, for educational degree, the major of the participants were in master's degree level. For the department of work, most of the survey participants were in the production department. For the position of participants, most of them work as managers and executives. For the working duration, most of the participants work from 6 to 10 years.

In the Pearson's Correlation Coefficients analysis, the correlation analysis and the relationship of three independent variables and one dependent variable was examined. The independent variables were Just-In-Time (JIT), Material Requirement Planning (MRP) and First In, First Out (FIFO) in this research while the dependent variable was operational efficiency. There was a strong relationship between Just-In-Time (JIT), and operational efficiency. There was also a strong relationship between Material Requirement Planning (MRP), and operational efficiency. The third independent variables which First In, First Out (FIFO) has a strong relationship with operational efficiency.

In the Multiple Regression analysis, the relationship between independent variables and dependent variable had been determined. The correlation coefficient value (R) showed that there was a strong correlation between the variables. Based on ANOVA analysis, the researcher can conclude that there is a significant relationship between independent variables as the significant level of regression model is below 0.05.

For the hypothesis testing, Just-In-Time (JIT), Material Requirement Planning (MRP) and First In, First Out (FIFO) have a significant relationship with operational efficiency. So, the hypothesis (H1), (H2) and (H3) are all accepted.

Table 5.1: Research Objective, Research Question, Research Hypothesis and Result

Research Objective	Research Questions	Research Hypothesis	Result
To study and investigate the relationship between inventory management practice and operational efficiency of Almarai company.	How effective is the inventory management practices utilized by Saudi Dairy company (Almarai)?	**H1:** There is a significant relationship between Just-in-time (JIT) and operational efficiency of the Almarai company	Significant
		H2: There is a significant relationship between Material Requirement Planning (MRP) and operational efficiency of the Almarai company.	Significant
		H3: There is a significant relationship between First in, First out (FIFO) and operational efficiency of the Almarai company.	Significant

To assess and analyze the effectiveness of inventory management practices on operational efficiency of the company.	How effective is the inventory management practices on operational efficiency of the Saudi Dairy company (Almarai).		**Regression Analysis Coefficient:** Material Requirement Planning (MRP) with highest Beta H1 = 0.163 First In First Out (FIFO) with Beta value = 0.159 Just in Time (JIT) with Beta value = 0.122

5.3 Limitation of the Study

This study is hindered by the researcher's difficulty in locating journal articles that correspond with business inventory systems and explain how these systems affect the Almarai's performance and efficiency. This is because the majority of journals focus on other systems, such as ERP, POS, and Spockets, and there are few journals on JIT, MRP, and FIFO systems. In addition, the absence of contemporary journals has been a significant obstacle in doing this research. Most online journals have been published before. It is difficult for a researcher to collect journals from 2018 to 2022, because the researcher found that most of the journals regarding the topic of his research was published 2015 and before.

In addition, the researcher circulated the questionnaire using Google Form so that intended respondents may complete it. As a result, there are several responders who have never used

inventory systems in the company, rendering their data irrelevant to the investigation. In addition, the majority of the audience is not interested in being a response, and they are often preoccupied with their own job. In order to finish the collection of 355 data samples, researchers must devise another strategy. The last constraint encountered by the researcher was the accuracy of the data. Every question on the survey form offered an option or choices. Thus, some people just check the box without reading the question carefully. It will reduce the precision of data analysis and influence the outcome of the study.

5.4 Recommendation for the Future Study

This research shows useful information that may be used by a variety of organizations. Therefore, it is recommended that future researchers conducting research on the issue include a number of factors other than those employed in the current study. This is due to the fact that the addition elements can identify what other factors can impact operational efficiency when utilising a different inventory system. Therefore, organisations utilising the system may continue to improve their inventory system and achieve greater efficiency and performance.

In addition, it is recommended that future study concentrate more on the most modern inventory management systems. This is because researchers discovered a dearth of journals performing research on the most recent version of these systems. As a result, since the new technology inventory System has been established in several other countries, conducting more study on the subject will benefit numerous parties.

The researcher in a future study can conduct research using qualitative methods. Examples of qualitative approaches are interviews and experiments. This allows the researcher to gather particular data and direct responses from respondents. Occasionally, the researcher can obtain feedback from the questionnaire. This allows the researcher to include more explanation and discussion in the research.

5.5 Concluding Remark

This research provides insight into the JIT, MRP, and FIFO inventory systems, which are regarded to impact the operational effectiveness of the Almarai corporation. In addition, this study includes a summary of numerical analysis and the primary results of the hypothesis. For the suggestion, it is mentioned that it will help future research and serve as a reference for businesses to define some factors that influence their operational efficiency and performance when introducing new inventory practises.

As a conclusion, the researcher hopes that this study will provide useful information regarding how inventory practises might affect the operational efficiency of businesses in relation to the usage of the most up-to-date inventory management systems.

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APPENDIX 1

THE INFLUENCE OF INVENTORY MANAGEMENT PRACTICES ON OPERATIONAL EFFICIENCY: SAUDI ALMARAI DIARY COMPANY

DearSir/Madam/Mr./Ms,

My name is Yousef Ahmed Mohammed Nasser, a student who currently undertaking the course of Bachelor of Technopreneurship with Honours (BTEC) at Universiti Teknikal Malaysia Melaka, UTeM. I am conducting a final year research study that entitled with "**The Influence Of Inventory Management Practices On Operational Efficiency: Saudi Almarai Diary Company**". So, as a part of my completing my bachelor's degree, I have to conduct a research analysis of the forementioned topic. I kindly seek your sincere feedback in the following survey questionnaire. Please answer all the following questions and the information provided will only be for analytical and academic purposes. The identity of all the participants will be anonymous. This questionnaire survey consists of THREE (3) sections. Section A is demographic profile and Section B is the factor that influence Inventory Management Practices on Operational Efficiency of Almarai company. Section C is about the impact of inventory management system on Almarai operationalefficiency.

Your kind cooperation in completing this survey is highly appreciated!

Thank You,

For any inquiry and clarification regarding this study, you may reach me out through the following:

Name: YOUSEF AHMED MOHAMMED NASSER

Email: Yosefbahada@gmail.com

Phone Number:

Name of Supervisor: DATIN DR. SURAYA BINTI AHMAD

Email: surayaahmad@utem.edu.my

SECTION A: DEMOGRAPHIC PROFILE

Please select the most appropriate answer at the provided brackets.

1. **Age**

   20 – 30 years old ( )

   31 – 40 years old ( )

   41 – 59 years old ( )

2. **What is your highest education level**

   Technical or occupational certificate ( )

   Bachelor's degree ( )

   Master's degree ( )

   Others _____

3. **What department are working in?**

   Assembly department ( )

   Financial department ( )

   Planning department ( )

   Warehouse department ( )

   Production department ( )

   Purchasing department ( )

   Others _____

4. What is your position in the company?

Managing director ( )

Head of department ( )

Group Leader ( )

Executive ( )

Accountant ( )

Manager ( )

Others ( )

5. How long have you been in the above-mentioned position?

Less than one year ( )

1-5 years ( )

6 – 10 years ( )

Above 10 years ( )

Section B: This part will assess the factors of inventory management practices use by Almarai company and their influence on its operational efficiency. Kindly indicate on the scale which of the following inventory management strategies are effective at the Almarai company by using the Likert Scale as below:

(1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree.

a) Just-In-Time (JIT)

NO.	STATEMENT	1	2	3	4	5
1.	Reduces inventory waste					
2.	Overcomes the process of manufacturing					
3.	Smaller investments					
4.	Keep manufacturing runs short and simply transition to new items.					

b) Material Requirement Planning (MRP)

NO.	STATEMENT	1	2	3	4	5
1.	Optimized inventory management					
2.	Estimation of raw material quantities					
3.	Enhanced manufacturing productivity					
4.	Increased labour efficiency and performance					

c) First In, First Out (FIFO)

NO.	STATEMENT	1	2	3	4	5
1.	Costs less money and time to calculate the actual selling price of merchandise.					
2.	Enhanced Quality Control					
3.	Keeps Stock Handling to a Minimum					
4.	Increased Warehouse Space					

SECTION C: OPERATIONAL Efficiency

This part will assess the impact of inventory management system on Almarai operational efficiency. Kindly indicate your answer in appropriate space to demonstrate the extent of your agreement with each following statement by using the Likert Scale as below:

Decreased by more than 20 %	Decreased 1 – 20 %	Unchanged	Increased 1 – 20%	Increased more than 20%
1	2	3	4	5

Operational Efficiency

NO.	STATEMENT	1	2	3	4	5
1.	Enhanced labour productivity					
2.	Improved client service					
3.	Facilitates uniformity of inventory movement					
4.	More efficient use of available warehouse space					

Others (Please Specify)

APPENDIX 2

Gantt Chart of Final Year Project (FYP) 1

WEEK/ ACTIVITIES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
FYP 1 Discussion									MID SEMESTER BREAK						
Finding out a topic															
Meeting with supervisor															
Constructing a proposal															
Chapter 1 Revision															
Chapter 2 accomplishment															
Chapter 3 Discussion															
First draft Submission															
Editing and amendments															
Presentation 1															
Submission of FYP 1															

APPENDIX 3

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
Constructing the survey									MID SEMESTER BREAK						
Distribute the survey online															
Data Collection															
Data Analysis															
First Draft Submission															
Chapter 3 and 4 Correction															
Report finalization															
Final Presentation															
Submission of FYP 2															