

# **INVENTORY MANAGEMENT PRACTICES OF MANUFACTURING COMPANY IN NEPAL**

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fulfillment Of the requirements for the Master's Degree

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## **Certification of Authorship**

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **“INVENTORY MANAGEMENT PRACTICES OF MANUFACTURING COMPANY IN NEPAL”**. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it been proposed and presented as part of requirements for any other academic purpose.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

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## Report of Research Committee

Ms. Anjala Adhikari has defended research proposal entitled “**Inventory Management Practices of Manufacturing Company in Nepal**” successfully. The research committee has registered the thesis for the further progress. It is recommended to carry out the work as per suggestions guidance of supervisor Asso. Prof. Dr. Kapil Khanal and submit the thesis for the evaluation and viva voce examination.

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## Approval Sheet

We have examined the dissertation entitled “**Inventory Management Practices of Manufacturing Company in Nepal**” presented by Ms. Anjala Adhikari for the degree of Master of Business Studies (MBS). We hereby certify that the dissertation is acceptable for the award of degree.

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Researcher

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## **Abbreviation**

COGS	Cost of Goods Sold
CR	Current Ratio
DIO	Days Inventory Outstanding
DNL	Dabur Nepal Limited
FP	Firm Performance
FY	Fiscal Year
ITR	Inventory Turnover Ratio
JIT	Just in Time
LP	Liquidity Position
LTD	Limited
MBS	Masters in Business Studies
OM	Operating Margin
PE	Permanent Establishment
QR	Quick Ratio
ROA	Return on Assets
ROE	Return on Equity
SNL	Surya Nepal Limited
TU	Tribhuvan University
UNL	Unilever Nepal Limited

## Abstract

The purpose of this study, "Inventory management performance," aims to fill the educational gap about manufacturing enterprises' inventory management in Nepal. Because there aren't many inventory management research publications in the Nepalese context, this study serves as a basis for further investigation. The secondary data used in the data analysis were taken from the annual reports of three manufacturing companies covering the ten-year period from 2013/14 to 2022/23.

The study's primary goal is to analyse Nepalese inventory management practices and firm performance. The purpose of this study's data presentation and analysis is to assess the inventory management situation as it relates to the financial reports covering the fiscal years 2013 through 2023. Analysis of inventory management in relation to the organization's ROA, ROE, and OM position has been undertaken. This study looks at the effects of several inventory metrics, such as the inventory turnover ratio, inventory conversion period, current ratio, and quick ratio, on a manufacturing company in Nepal. The metrics return on equity, return on assets, and operating margin are used to measure the success of the company.

The data for this study were analyzed using statistical software such as SPSS and STATA. According to the study, the dependent variables (ROA, ROE, and OM) and independent variables (ITR, current ratio, and quick ratio) have a significant relationship. On the other hand, ROA, ROE and OM have a negative effect with the Inventory Conversion Period (ICP).

As per the study's findings, inventory management significantly impacts a company's corporate financial performance. Hence, it is essential for firms to maintain proper inventory levels to boost their profitability and minimize the expenses incurred by holding excess stock in their warehouses. In accordance with the study's conclusions, businesses are advised to adopt cutting-edge manufacturing technologies that optimize output speed and reduce the time it takes to convert inventories, hence increasing inventory turnover and profitability.

**Keywords:** Inventory management, ROE, ROA, OM and Profitability.

# CHAPTER I

## INTRODUCTION

### 1.1 Background of the Study

Inventory control refers to the coordination of material purchase, control, and utilization. Given that inventory is closely related to production, inventory management is the process of obtaining the appropriate inventory in the appropriate quantity at the appropriate moment. Creating the best return on each and every investment made by an organization is its primary goal. Because it lowers costs and ensures that needed products are available when needed in the right quantity, effective inventory management can help a company achieve positive returns (Drury, 2002).

The ordering, storing, using, and selling of items to meet present or future needs for the seamless running of the business is referred to as inventory. This process encompasses all stored resources. The management views inventory as a delicate assignment because a significant amount of money should have been invested in it. A thorough inventory that includes things like inventory, personal belongings, room, building, furniture, and storage box contents. Inventory includes a statement outlining the type and worth of each item, thus it is important to recognize that, in order to meet the firm's goals, and inventory needs to be managed properly utilizing a contemporary, scientific accounting system, methods, and procedures. Without a question, in today's cutthroat economy, a firm that overlooks the need of inventory management will eventually fail. Thus, inventory control is essential to the ongoing process of production and sales (Kasisomayajula, 2014).

Inventory management encompasses the storage and processing of raw materials, components, and completed goods in addition to their management. Depending on the demands of a company, there are various forms of inventory management, each having pros and cons? The key to efficient inventory management is understanding what you have on hand, where it is being used, and how much ends up as finished goods. The effective supervision of the continuous movement of units into and out of an inventory that already exists is known as inventory management. Typically, this procedure entails managing the incoming unit transfers to avoid excessive inventory levels or reductions that would endanger the business's ability to operate. Effective inventory management

also aims to minimize the cost of the inventory, considering the entire cost of the items contained in the inventory as well as the tax liability resulting from the inventory's cumulative value. Three important aspects of any inventory must be considered in order to balance the many duties involved in inventory management. Time is the first of these aspects. Knowing how long it takes a supplier to fulfill an order and carry out a delivery is important when it comes to items that are obtained for the overall inventory. Determining the time it will take for such materials to move out of inventory is another essential component of inventory management. It is possible to determine when to place an order and how many units must be ordered to maintain production operating smoothly by understanding these two crucial lead periods (Shrestha, 2019).

Profitability depends on inventory. Profits are generated from assets by inventory velocity. Any type of business may run more profitably and smoothly the faster its inventory turns over. The main obstacle to successful supply chain management is inventory. Consumers expect prompt, accurate, and full shipping of their orders. This calls for keeping the appropriate inventory at the appropriate location at the appropriate time. Adequately implementing the practice of products inventory management is not an easy undertaking. Manufacturing industry operators will remain complacent and accept average profit instead of higher performance until they can assess the benefits of alternative techniques and comprehend the true costs associated with poor inventory productivity and inventory management (Koumanakos, 2008).

Inventory serves as a bridge connecting a product's manufacturing and sale. Both manufacturing and non-manufacturing businesses typically use inventories. Manufacturing companies keep inventories of raw materials, work-in-process, finished goods, parts, and supplies. Inventory is a natural part of any business. The main resources that manufacturing organizations should have are raw materials, work-in-process, and finished goods. The business maintains a significant volume of work in progress despite the lengthy processing procedure. However, wholesalers and commercial businesses do not put their capital into work-in-progress and raw materials. They solely maintain inventory of finished commodities (Sherado, 2015).

According to Adam J. (2005), an inventory system is a collection of guidelines and procedures that keep track of stock levels and establish what standards should be met, when stock needs to be refilled, and how big orders should be. Generally speaking,

manufacturing inventory refers to the supplies needed to create a company's finished product. Typically, it is separated into work-in-process, supplies, component parts, finished goods, and raw materials. Retail establishments keep finished goods on hand to sell them to customers quickly. When discussing services, inventory typically refers to the tangible products that will be sold as well as the materials required to carry out the service (LeeBrian, 2001). Whether in retail, manufacturing, or services, the fundamental goal of inventory analysis is to determine what size and when things will be ordered.

Globally, people's attention has been drawn to inventory management in recent years. Inventory control done right boosts profitability. Capital productivity would be released through effective and efficient inventory management. Effective management of inventory, payables, and receivables is essential to any business's survival.

Assuring the availability of resources when needed while minimizing depreciation, theft, and waste is possible with prudent inventory management (Aje, 2017). A balance between the trades-offs between profitability and liquidity is ensured by effective working capital management through appropriate inventory management (Aminu, 2012). Working capital under management lowers liquidity and has an impact on profitability (Ashok, 2013).

Planning the ideal amount of inventory and controlling inventory costs are key components of inventory management. These tasks are backed by a suitable organizational structure that is manned by qualified employees and overseen by upper management. It involves both a financial and a physical component, and both components are interconnected and cannot be examined separately (Agrawal, 2002:21).

Inventory turnover, inventory conversion time, and storage costs were found to be negatively correlated with profitability. The high ITR could imply that inventory levels were kept relatively low, that clients were being lost, or that profits were sharply declining (Aghababei, Fattahi, & Moradipur, 2014). The effectiveness of inventory management determines whether a business succeeds or fails. Improved operational outcomes are a result of efficient inventory controls. Every organization's overarching strategic business plan is its inventory management system (Sitieni, 2015). The goal of inventory management is to measure a business's profitability and management effectiveness (Prempeh, 2015). (Mwangi, 2016) came to the conclusion that low

management expertise and insufficient inventory use by the company cause issues with consumer demand. The majority of Nepal's state-owned manufacturing companies are suffering greatly from poor inventory management. To increase return on investment and boost the company's market value, every business must balance the competing goals of profitability and liquidity in inventory management.

In Nepal, private business is recognized for its ability to construct the necessary infrastructure for the production and distribution of significant consumer goods, serve as an exemplar for efficiency, and complement the private sector. Inventory management is becoming more and more of a challenge for Nepal's rising corporate population. Inadequate inventory management befalls manufacturing enterprises in Nepal. The public manufacturing businesses would be content if the future challenges were removed. Though many have studied the topic extensively, few have done so in the Nepalese context of inventory management. According to Sunday and Joseph (2017), the companies ought to adopt contemporary manufacturing technology that facilitates expedited production, hence reducing the duration of inventory conversion and ultimately boosting inventory turnover and profitability.

While many manufacturing organizations in Nepal are able to handle the financial and physical aspects of their inventories, many other countries have not caught up with the modern approaches for inventory management. Thus, the focus of the study is on inventory management procedures in Nepali public manufacturing companies.

## **1.2 Problem Statement**

Maintaining a lot of inventory on hand might lead to business failures and additional losses. Production halts may occur if a company runs out of a vital inventory item. For today's corporations, the problem is in managing this economics of stockholding. Due to its relationship to the business's prosperity, inventories must be properly maintained. Almost all Nepali businesses struggle to maximize their profits. While making profits without expanding resources or investment is an effective notion, Nepalese corporations struggle with cost minimization. In order to prevent expenses from arising, they invest the funds in inventory. In the current Nepalese setting, a major problem is the desire to make commodities and goods available when and where needed while taking quantity and quality into consideration to avoid the cost of not achieving the

requirements. Inventory management is essential to every organization because it makes sure that the capital of the company is never locked down in the form of goods in the store, which might lead to theft and fraud. Put another way, the management wants to minimize stock losses that result from operating stores. An organized stock management program can significantly increase a company's yearly turnover.

On the other hand, choosing the appropriate inventory level for any business is a bigger obstacle to maintaining profitability. Previous research indicates that the desired inventory level is dependent on the anticipated sales of any given organization. Nonetheless, in theory, a company's inventory level would be determined by the expenses related to keeping inventory. According to earlier research, there is debate about the existence of the holding costs of capital effect on inventory demand. Therefore, the purpose of this study is to determine how Nepalese firms' inventory levels are affected by holding cost of capital. These research difficulties have been attempted to be addressed in this study:

- What is the current state of Nepalese manufacturing companies' inventory management practices?
- What influence does the inventory conversion period have on profitability?
- What effect do liquidity assets have on financial performance indicators like ROA, ROE, and OM in Nepalese manufacturing firms?

### **1.3 Objective of the Study**

This study's primary goal is to investigate the connection between Nepalese companies' profitability and the amount of inventory they hold. It also covers investigating the variables influencing the approximate amount of inventory that businesses should have in order to be profitable. In addition to this, further particular goals are as follows:

- To assess the current state of inventory management as it currently exists in Nepalese manufacturing companies.
- To analyze the effect of an inventory conversion period on an organization's profitability.
- To examine the relationship between liquidity assets and financial performance indicators such as ROA, ROE, and OM in Nepalese manufacturing companies.

## **1.4 Hypothesis**

Following a thorough analysis of the literature research, the hypothesis's aims have been developed.

H<sub>0</sub>: There is no significance relation between the inventory turnover and organization performance (Profitability)

H<sub>1</sub>: There is significance relationship between the inventory conversion period and organization performance.

H<sub>2</sub>: There is significance relationship between the liquidity assets and organization performance

## **1.5 Rationale of the Study**

Manufacturing organizations rely heavily on inventory management to ensure raw material availability, reduce stock outs, maximize working capital, and improve operational efficiency. Gaining a better understanding of inventory management techniques is crucial to raising a company's competitiveness and performance. The manufacturing industry in Nepal is essential to the nation's economy, generating jobs, revenue, and economic expansion. Examining inventory control procedures in Nepalese manufacturing enterprises is important to comprehend the difficulties and chances these businesses have in streamlining their processes and boosting their competitiveness. This study helps to provide information regarding the appropriate level of inventory required for company and plays a significant role in filling gap in understanding of desired level of inventories required for successful operation UNL, SNL & DNL. Also, it has significance role to find the practice, impact and important of inventory management in Nepalese manufacturing companies. It is also hoped that this study may be able to address the effective inventories management on profitability of the corporation. The study could provide useful insights and suggestions for Nepalese manufacturing organizations to improve their inventory management strategies by evaluating current inventory management methods and finding areas for development. Better inventory management procedures can result in lower costs, happier customers, and increased productivity for the company as a whole.

### **1.6 Limitation of the Study**

A single study may not be able to address every issue in the subject of concern. The following are some of the main limitations of this study:

- i. This study focuses solely on the inventory management and its impact used by the relevant Nepalese manufacturing organization.
- ii. This analysis comprises ten years of data (2012/13 to 2022/23 period) from the manufacturing companies included in the study. It may not be sufficient for the analysis.
- iii. The sample size is limited to three companies, which may not accurately reflect the entire population.
- iv. The research used limited strategies and techniques; hence this thesis does not focus on other moderating variables of inventory management.
- v. Based on previously disclosed secondary data on the company, the findings may be impacted by the financial report's tendency toward visually appealing information.
- vi. This study looks at the inventory management of listed manufacturing companies, which may not fully cover or represent the actual performance of the entire industry due to time and resource constraints.

## **CHAPTER II**

### **REVIEW OF LITERATURE**

The primary objective of exploring the literature is to gain some knowledge in one's field, identify potential contributions, and obtain inspiration for creating a study plan. Each research is built upon the prior relevant subject. In reading the literature, one cannot overlook the numerous books, journals, research papers, periodicals, articles, unpublished thesis reports, and so on. Likewise, one cannot disregard the previous investigations. In order to expand the knowledge based on input to this study, this chapter assists in gathering sufficient feedback. This chapter is organized into two sections that go in the following order:

- Theoretical Review
- Empirical Review

#### **2.1 Theoretical Review**

##### **2.1.1 Inventory Management**

The word inventory refers to a company's stock of products for sale, as well as the components that comprise the product. Stated in various ways, "Inventory is composed of assets that will be sold in the normal course of business operation in the future." Goods kept for potential resale by the company are referred to as inventory. Therefore, inventories play a crucial role in helping the company reach its targeted sales target. A list that is valuable and usable, or a stock of commodities, is what the dictionary defines as inventory. Man, money, materials, plans, and equipment are examples of idle resources. Whether a business is manufacturing or commercial, its most vital component is its existing assets, which include inventory. Inventory is primarily composed of raw materials, semi-finished commodities, finished products, parts, and supplies (Khan & Jain, 2007).

It was believed that inventory management was necessary to keep the right commodities in sufficient supply at a reduced overall cost. A manufacturing company's work-in-process inventory, or the inventory it keeps between the times it takes to place

the raw materials in the production process and get the finished product, is heavily influenced by the length of the production period.

Decreasing the production period can increase inventory turnover. Finished goods inventory allow the firm flexibility inventory its production scheduling and its marketing. The level of finished goods inventory is a matter of co-ordination of production and sales. The financial manager can stimulate sales by changing credit terms or by granting credit to marginal risk. But whether the goods remain on the books as inventories or as receivables, the financial has to finance them (Shrestha, 2019).

An organization's ability to operate effectively and efficiently depends on inventory management. Controlling items and materials that must be stored for use in subsequent production processes, or later trade activities in the case of services, is crucial. The secret to probability is inventory. Inventory velocity generates revenue from assets. The profitability will increase with the speed at which the inventory turns. The main obstacle to successful supply chain management is inventory. Consumers expect timely, accurate, and full shipping of their orders. This entails having the appropriate inventory on hand at the appropriate location at the appropriate time (Reddy, 2013).

The two terms "inventory and management" combine to form the term "inventory management." Inventory is the number of materials that a business has on hand to meet its production and sales needs going forward. Stated differently, inventory encompasses any stock that a business maintains to ensure seamless production and market operations. It is a type of inventory of current assets in which a significant portion of working capital is invested. As a result, inventory is necessary for both manufacturing and trade companies to operate efficiently. A deficiency in inventory has an impact on both the uninterrupted manufacture of items and the seamless provision of finished goods. Four types of inventories are often kept by a manufacturing company: finished items, work-inventory-process, raw materials, and spare parts and supplies. For transactional, preventative, and speculative purposes, inventories are necessary (Khan & Jain, 2007).

Inventory management involves handling various inventory types to guarantee seamless production and sales operations, minimize ordering and carrying expenses, implement suitable safety measures to prevent physical loss and theft of goods, and

cover all aspects of purchasing, storekeeping, issuing, and pricing (Bose). Inventory management employs a variety of tools and techniques for inventory control from the point of purchase until the goods are stored, issued, or sold. It makes an effort to keep sales and production in constant contact, which lowers inventory levels and makes it easier to meet consumer and production demands. In the end, it seeks to increase a company's profitability through decreased inventory costs and efficient operations (Bose, 1997).

Thus, the two basic goals of inventory management are to minimize the amount of money invested in inventory and the amount of money spent on inventory management. Effective inventory management should address both the financial and physical aspects of the stock. Top-level managers' primary responsibility is to create plans and procedures that will help maintain the ideal amount of inventory for achieving targeted goals (Bose, 1997).

### **2.1.2 Function of Inventory Management**

Basically, inventory management include the following function.

- Purchasing
- Storekeeping
- Issuing and Pricing

### **Purchase Management**

A manufacturing organization cannot carry out its subsequent activities without the purchasing function, which is one of the primary roles of inventory management. Purchases therefore play a significant part in manufacturing companies as they impact all of the major factors related to manufacturing, such as quantity, quality, efficiency, economy, timely delivery, and production volume. Science-based procurement has the potential to save a lot of money, time, and managerial effort. Inventory manufacturing organization purchasing is the procuring of materials, supplies, machines, tools and service required for the equipment maintenance and operation of the business. Purchasing must be the right quality in proper quality delivering at the right time at the most favorable from outside organization (Drury, 2002).

The objectives of purchase are listed below:

- Procurement of appropriate quantities and quality of raw materials at the most affordable price (not always the lowest price).
- Keeping up supplies to meet production goals while requiring the least amount of capital.
- Obtaining materials that are most appropriate for the products and the purpose for which they are meant.
- Purchasing quality that is neither excessively low to prevent regular production supplies from being met nor excessively high to require capital ownership.
- Creation of goodwill for the company through dealing with supplies.
- Enhancement of the product through appropriate material selection in terms of both quality and distribution.
- The utility's procurement strategy, which involves scheduling procurement well in advance, ensures that material shortages won't affect manufacturing activity.
- Maintained of the business's competitive position in the market by adhering to consumer demands for quality standards.
- Avoiding duplication of materials, which wastes resources and equipment.

### **Storekeeping**

The actual storage of items is the focus of the inventory control component known as "storekeeping." After resources or items are received, the storekeeping function guards against theft, damage, deterioration, evaporation, and negligence. Since the majority of current assets are made up of investments in materials and commodities, the shops department ought to be independent. For the purpose of maintaining stores, a small stores unit is necessary if it is not feasible. Regardless of the type of unit or department, the stores should be well-equipped and operate efficiently. (Maynard, 1997).

The objectives of storekeeping:

- Using the available storage space and labor efficiently
- Receiving handling and issuing goods economically and efficiently.
- Minimizing the inventory holding costs,
- Protection of all goods against all cases like fire, thief etc.

- Facilitating ordering of required materials/goods.
- Maintaining regular supply of raw materials at all times when properly authorized.

### **Issuing and Pricing**

In order to ensure proper documentation in the Bin cards, Stores ledger, and Job ledger, materials, products, and store inventory should only be given against request slips signed by authorized personnel. In order to prevent them from being included in accounting, the storekeeper serializes each request that they receive. When material or product inventory approaches the point of reorder, it is imperative to submit a request for a requisition to the buying department. The cost of the matter can be ascertained using several methods of inventory valuation, contingent upon the policies of the organization (Drury, 2002).

#### **2.1.3 Types of Inventories**

Manufacturing firms generally hold four types of inventories (Van Horn, 1984).

Which are as follows

##### **1. Raw Materials Inventory**

Inventory of raw materials refers to those basic inputs that go through several processes to become completed commodities. Acquired and kept raw materials for upcoming manufacture. Manufacturing companies have raw material stockpiles on hand to ensure that production runs smoothly. Traditionally, materials utilized in factories are divided into two categories: direct and indirect materials. All components and materials that are directly identifiable and constitute an essential part of the final product are categorized as direct material. Generally speaking, "indirect material" refers to materials utilized in manufacturing processes that cannot be identified. They merely serve as the items' auxiliary materials. The degree of raw material inventories is determined by factors such as estimated output levels, supply chain dependability, and the effectiveness of punching and production operation scheduling (Cope & Thomas, 1982).

## **2. Work-in-Process Inventories**

Semi-finished goods are represented by work-in-process inventory. They consist of these materials that have been used in the manufacturing process but have not yet been transformed into completely finished products. Differentiating which materials are work-in-progress is exceedingly challenging. And which aren't since identical materials could be used for both finished goods and work-in-progress in different industries. Depending on the type of production, yes. The duration of the production cycle or period has a significant impact on the number of work-in-process inventories (Cope & Thomas, 1982).

## **3. Finished Goods Inventories**

Finished goods inventory consist of fully produced goods that are prepared for retail sales. A manufacturing company's inventory consists of its finished products. Stocks of completed items held by manufacturing and non-manufacturing companies for use in the market (Hampton, 1930)

## **4. Spare Parts and Supplies Inventories**

Materials utilized for running tasks are called supplies, and materials used for maintenance and repair are called spare parts. The spare parts and supplies are represented by bolts, grease, lubrication, and oil for the wheels (Cope & Thomas, 1982).

### **2.1.4. Inventory Management Process**

It was believed that inventory management was necessary to keep a sufficient supply of the right resources at a reduced overall cost. A manufacturing business needs to keep a specific level of inventory during production. This inventory, referred to as "work-in-process inventory," is heavily impacted by the duration of the production period, which is the interval of time between putting raw materials into the process and receiving the final product (Acharya, 2021).

The five essential steps required for any inventory management process are:

#### **1. Receive and inspect products**

After the supplier receives your order, the inventory management procedure begins. If you get this section perfect, the rest of the processes will work as well as possible. Examining the products should be done as soon as the order is delivered. Verify that

the product code, serial number, and quantity are all accurate. Additionally, you should make sure that all of the products are in good shape and that the handling conditions such as temperature are appropriate for perishables (Acharya, 2021).

## **2. Sort and stock products**

Once the products have been inspected, they need to be carefully stored in the warehouse and added to your inventory management system. It is a good idea to store things strategically at this point. Product sorting and SKU organization are two examples of useful warehouse slotting strategies. Additionally, it's critical to have best-selling items close at hand by keeping them in the locations that are easiest to reach (Acharya, 2021).

## **3. Accept customer order**

Taking customer orders is the next phase in the inventory management process. Usually, a point-of-sale system (POS) handles the ordering and payment processing for the orders. The order information will be visible to the warehouse employees via the POS system's integrated inventory management capability or through integration with inventory management software (Acharya, 2021).

## **4. Fulfill, package and ship order**

The following step after a consumer place an order is to promptly and precisely fill, package, and ship the order. Finding and choosing the products in the warehouse should be quite simple if the second phase of the process was optimized. When packing a product, factors including customer experience, durability, and sustainability should be taken into account. Make sure to provide the consumer with a confirmation email along with tracking details as soon as the product is shipped (Acharya, 2021).

## **5. Reorder new stock**

It is essential to make sure the quantity and timing of new orders are accurate while replenishing inventory. Utilizing the reorder point method will help you reduce the likelihood of dead stock and stock outs, two issues that can seriously hurt your business's profitability. Reordering can be automated by some inventory management systems, which saves time and eliminates human error (Acharya, 2021).

### **2.1.5 Motives of Holding Inventories**

Inventory management becomes an issue only when the business has inventory. Why do businesses keep inventories if maintaining them is so costly? Manufacturing inventories required using corporate capital as well as incurring storage and holding costs. Keeping inventories is done for three reasons (Marti & Mille, 1992).

#### **a) Transaction Motives**

It emphasizes how important inventory management is to the efficient operation of manufacturing and sales. A business must keep sufficient supplies of materials on hand to supply the 18 factories and ensure continuous production. Even when a corporation needs raw resources, it is impossible to obtain them. The supply and demand of materials are not in sync with each other. On many occasions, there is also unpredictability in the processing time. Raw material procurement may be delayed due to a number of factors, including shortages, strikes, and disruptions in the transportation system. As a result, the company needs to keep enough raw materials on hand at all times to support live manufacturing (Marti & Mille, 1992).

#### **b) Precautionary Motive**

Keeping inventory on hand is essential to protect against the possibility of unforeseen changes in supply and demand, among other considerations. Because sales do not occur instantly at the end of production, finished goods inventory must be held. When consumers want something, a company cannot produce them right away. Therefore, they must maintain their stock in order to regularly deliver finished goods. Additionally, finished goods inventory must be kept in case a customer's demand changes unexpectedly. If a company's sales are seasonal, large finished products inventories should be maintained to satisfy peak demand. Lack of product availability upon client demand would result in a decline in sales for the company due to competition. "The amount of finished items and inventories would be contingent on the timing of production and the coordination of sales and production. The manufacturing cycle causes WIP inventories to accumulate. Is the amount of time that passes between the start of raw material manufacturing and the appearance of the completed product at the end of the production cycle. Whole production cycle full WIP stock needs to be kept

up to date. Effective businesses continuously work to reduce the production cycle by enhancing their manufacturing methods (Marti & Mille, 1992).

### **c) Speculative Motive**

It affects the choice of whether to raise or lower inventory levels in order to profit from changes in pricing. Various variables, such as quantity discounts and projected price increases, may make the purchase and storage of raw materials inventories necessary. The company may buy a lot of raw materials in order to achieve the necessary production and sales levels and to benefit from bulk purchasing discounts on quality (Marti & Mille, 1992).

### **2.1.6 Need and Importance of Inventory**

In any organization, management inventories play a crucial function. Inattention to inventory management will have an impact on the productivity and financial success of the company. According to Buffa, "Inventories play a crucial role in development. The several processes that go from the materials through all of the production steps and into the final products. Retail establishments and warehouses are still storing goods (Buffa, 1994).

The importance of inventory management can be written as follows:

- The corporation might have to pay high costs if there is a shortage of inventory because piece-wise purchases could result in price discounts from bulk purchases.
- Inventory helps in smooth and efficient running of business.
- Inventory provide service to the customers immediately or at a short notice.
- A further benefit of batching and extended, uninterrupted manufacturing runs is that inventory also decreased the cost of the product.
- Additionally, inventory serves as a buffer stock in situations where raw supplies are delayed and it is anticipated that many transactions would be refused.
- Inventory contributes to economic stability by absorbing part of the swings when demand for an item changes or is seasonal.
- Pipeline stocks (also called process and movement inventories) are also necessary where the significant amount of time is consumed in trans-shipment of items from on localities to another.

### **2.1.7 Objectives of the Inventory Management**

In the modern industrial environment, inventory is the most crucial component for any production organization. Therefore, it is essential to manage it well because the sector does not want either an excessive or an inadequate level of inventory. The excessive amount of inventories costs the company money that could be spent on other endeavors, which is known as an opportunity cost. The carrying costs, which include handling, storage, insurance, documentation, and inspection expenses, also rise proportionately with inventory volume. The company's profitability will be further hampered by these expenses. The following is a list of inventory management's primary goals (Starr & Miller, 1962).

- Keep enough finished goods on hand to provide seamless sales and effective customer support.
- Minimizes cost of production.
- In times of shortage and when prices are expected to fluctuate, keep an adequate quantity of raw materials on hand.
- Optimizes profitability while minimizing waste from spoiling and the need to minimize obsolescence of inventory.
- Effective use of invested capital.
- Control investment in inventories to maintain it on optimum level.

### **2.1.8 Techniques of Inventory Management**

The goal of the company when managing inventory should be in line with the maximization of wealth. A company with adequate inventory can ensure smooth production activities and facilitate off-the-shelf delivery to customers. Conversely, an excessive inventory can be costly as it uses up idle resources that could be better utilized for other purposes, such as reducing working capital. "Inventory is (money) on which a company pays interest rather than collects interest," claims Alton N. Smith. Money is never safe from departure. Uncontrolled inventory poses a risk to industry. This article mentions the main issue with inventory management. Finding the ideal balance between having too much and too little inventory should be the goal. In order to prevent stock outs and keep inventory costs to a minimum (Lee, 2002).

Following are the inventory control technique in below.

### **Economic Order Quantity (EOQ)**

The company's objective for inventory management ought to align with the pursuit of wealth maximization. A business that keeps enough inventory on hand may guarantee efficient production processes and make off-the-shelf deliveries to clients easier. On the other hand, as it consumes idle resources that may be better used for other objectives, including lowering working capital, an extensive inventory can be expensive. Alton N. Smith asserts that "an organization pays interest on inventory rather than collecting interest." Money is never completely secure from loss. An industry's risk is uncontrolled inventories. This article discusses the primary problem with inventory control. The aim should be striking the right balance between having too much and too little inventory. In order to minimize inventory expenses and avoid stock outs (Lee, 2002).

### **ABC Analysis**

According to an ABC study of inventories, a comparatively large fraction of the stuff has less money value than the small portion that includes bulk money values. This method states that high value items have more stringent inventory control than low value items. Every item is divided into three categories: A, B, and C based on how much was spent on it (Shardeo, 2015).

### **Just in Time Method (JIT)**

This method was made popular by Japanese businesses who wanted to completely remove their inventory expenditures. This approach indicates that the supplies arrive at the manufacturing sites several hours prior to their intended application. Additionally, this system removes the need for maintaining big stocks (Schonsleben, 2000).

### **2.1.9 Inventory Cost Valuation Methods**

There are various methods of inventory cost valuation some of them are as follows:

#### **The First-In-First-Out Method (FIFO)**

Using this strategy, the materials that arrive first will be taken into consideration before the following consignment is taken. This approach is helpful when material prices are declining since it will result in high material costs for manufacturing but lower replacement costs (Acharaya, 2018)

### **The Last-In-First-Out Method (LIFO)**

It's the process where the most recent materials are given priority. The last shipment is taken first, then the second-to-last shipment is taken once it is depleted. This approach works best when the prices are rising and displays a production cost that is directly correlated with the current price (Drury, 2002).

### **The Weighted Average Cost Method**

With this approach, the weighted average cost of the material is used to determine the material issued price. The formula is used to compute it: -  $WAC = \text{Value of material in stock} / \text{Quantity in stock}$  (Drury, 2002).

## **2.2 Empirical Review**

### **2.2.1 Review of Journal and Articles**

Some of the journals, articles and previous research works that are reviewed for this study are as follows:

Silva and Madhavi (2023) did research on inventory management in Sri Lankan small and medium-sized retail stores. In this study, the results of a survey conducted among small and medium-sized retail establishments in the western province of Sri Lanka are presented, along with recommendations for entrepreneurs looking to implement efficient inventory management (IM) techniques. Via both descriptive and inferential statistics, the data was analyzed after being collected via standardized questionnaires. The observations and extra information acquired from conversations with retail store owners were then interpreted through a second qualitative data analysis. According to the study, the majority of small and medium-sized retail establishments use an appropriate inventory management solution, and the inventory management procedures are mostly unaffected by a small number of supply chain variables. Additionally, the performance of retail stores is impacted by supply chain variables, and sales performance is impacted by inventory management techniques. The majority of stores deal with shortages and excess. This study examines a limited sample of retail stores across a few different categories. It offers insight into the nature and practical applications of IM techniques in actual corporate settings. It also reaffirmed the necessity for managers to be informed on IM procedures and elements that influence

IM within the store. This study contributes to filling a vacuum in the literature regarding IM in the context of small and medium-sized retail stores in Sri Lanka. According to the study, small and medium-sized retail stores in Sri Lanka can operate more efficiently and have fewer IM problems if they adopt effective IM strategies.

Rachman and Suhaimi (2022) investigated the connection between Malaysian textile chain stores' performance and inventory management. The study employed a survey approach in which data was gathered from the 2008–2012 annual reports of the sampled companies as well as interviews with staff members. There was use of both descriptive and inferential statistics. The results show a strong correlation between inventory days, a proxy for inventory management, and return on assets, a proxy for business performance. It was determined that better inventory management techniques will increase resource utilization, lower inventory costs, and result in better financial performance.

Acharya (2021) Nepalese Public Enterprises' Financial Performance and Inventory Management Analyzing inventory control and PE profitability in Nepal is the aim of this research work. The study has used both analytical and descriptive research designs. In this work, the quantitative research approach has been employed. The study's population consists of 37 public firms located in Nepal. The samples that were obtained using the purposive sampling method are NFC, HPPC, and DDC. The study analyzed seven years of data, from 2011 AD to 2017 AD, and employed the tools of multiple regression analysis, correlation analysis, and descriptive analysis. CR, QR, ICP, ITR, ROA, ROE, OM, firm growth, and firm size are the characteristics that are taken into consideration. The findings show that there is a weak and negative correlation between profitability and liquidity ratios and inventory turnover. The findings showed that there was a weak and unfavorable correlation between profitability and quick assets and current assets. It is discovered that ICP and profitability have a negligible positive relationship. Consequently, even though the study did not find a significant correlation between inventory management and the profitability of PEs in Nepal, it did conclude that PEs in that country should manage their working capital well in order to attain optimal profitability.

Mulandi and Dismail (2019), Impact of inventory management techniques on the performance of Kenyan commercial state enterprises. The goal of the study was to

ascertain how Kenyan commercial state enterprises' performance was impacted by their inventory management procedures. The study's particular goals were to ascertain how Kenyan commercial state corporations performed in relation to the just-in-time inventory system and to evaluate how material requirement planning affected those same commercial state corporations. Targeting the 33 commercial state-owned firms, the study used a descriptive research design. 33 supply chain managers or their equivalents from these state-owned businesses made up the study population in total. A census was conducted, hence the sample size was 33 respondents. Descriptive and inferential statistics were used to analyse the primary data obtained from the study, which was conducted through the use of questionnaires. Figures and tables were used to present the findings. According to the study, material requirement planning and just-in-time inventory systems have a favorable and significant link with performance. The study comes to the conclusion that inventory management significantly and favorably affects Kenya's commercial state enterprises' performance. The report advises Kenya's commercial state-owned firm management to allocate additional funds towards improving the functionality of its MRP and JIT systems.

Nawawi and Salin (2018) investigated the "Inventory management effectiveness of a manufacturing company - Malaysian evidence". Examining the standard operating procedure (SOP) on inventory management methods, identifying any inadequacies in inventory management, and analyzing its effect on the company's performance are the goals of this study. Inventory control is crucial because it guarantees efficient production and guards against lost sales due to supply shortages and/or disgruntled customers. This research combines a combination of observation and document analysis for data collecting, using one manufacturing organization as a case study. Using the COSO Internal Control – Integrated Framework 2013 as a guide, the research analysis was carried out. It is discovered that a business keeps stock through unsafe inventory management since it mostly depends on outside storage services that are out of its control. The SOPs' lack of specificity and excessive generality are other findings of this study. Nonetheless, inadequate inventory control has a negligible impact on the company's financial results.

Rachman and Suhaimi (2016) investigated the connection between Malaysian textile chain stores' performance and inventory management. The study employed a survey approach in which data was gathered from the 2008–2012 annual reports of the sampled

companies as well as interviews with staff members. There was use of both descriptive and inferential statistics. The results show a strong correlation between inventory days, a proxy for inventory management, and return on assets, a proxy for business performance. It was determined that better inventory management techniques will increase resource utilization, lower inventory costs, and result in better financial performance.

Chepkulei (2015) conducted a study on the 'Role of Inventory Management Practices on Performance of Production Department' of manufacturing enterprises. In their research. The main goal of this study was to determine how inventory management affects production department performance. Another goal was to gauge how effective Mombasa County industrial companies' inventory management techniques were. A descriptive research design was adopted in the study. Participants in the survey responded to questions given to them via questionnaires. The study found that the majority of respondents agreed or strongly agreed that production efficiency is impacted by the use of computerized inventory management practices, such as automated replenishment, computerized warehousing, computerized inventory records, bar codes, inventory management software, and radio-frequency identification devices. Furthermore, it can be said that poor inventory control results in overproduction, underproduction, excessive stockpiling, machine spare part shortages, production bottlenecks, and delays in raw material supply. The results of the study showed that, even though action level methods were employed by most organizations, MRP 1 was the most successful in improving production department performance.

Etim and Ime (2015), "Inventory Management Practices and Operational Performance of Flour Milling Firms in Lagos, Nigeria" This study's main objective was to investigate the inventory management procedures used by manufacturers of flour milling equipment and the consequences of those procedures on operational performance. The study's findings support the notion that, among flour milling manufacturing enterprises, inventory management techniques and organizational performance have a substantial link. Furthermore, the analysis demonstrates that the following inventory management techniques were common among the companies surveyed: continuous replenishment, use of scientific inventory management approach, ABC inventory model, economic order quantity, and economic batch quantity. However, vendor managed inventory, the

Just-in-Time Demand Forecast method, and computerized inventory management were the least used inventory management strategies.

Kasisomayajula (2014) conducted a study on "An Analytical Study on Inventory Management in Commercial Vehicle Industry in India". The purpose of the research was to study the quantity of inventory of the chosen machines in the Indian a commercial automobile industry, as well as to examine the composition of inventory in these units. The researcher comes to the conclusion that in order to effectively manage the company's inventory position, we must focus on four key inventory management components: inventory size, composition, circulation, and growth. This overall inventory analysis shows that all units in the Indian commercial vehicle industry have excellent inventory management practices. TML leads the way in inventory management amongst businesses in the commercial vehicle sector. Strong evidence for this can be seen in the relationship between inventory and sales. Although there is only a minor association found between sales and inventory, FML's average growth rate of sales has outpaced the growth rate of inventory, indicating highly good inventory administration. Therefore, maintaining and enhancing an organization's health requires effective inventory management. The profitability of the company will increase with effective inventory management.

The study "The Impact of Inventory Management Practices on Financial Performance of Sugar Manufacturing Firms in Kenya" was carried out by Mugenda and Wachira (2013). The impact of inventory management strategies on the financial performance of Kenyan sugar production companies was the study's main goal. Minimizing inventory investment is one of the study's other goals for inventory management. Increased managerial effectiveness across all functional management domains is one advantage of effective inventory control. The goal of the study was to determine how Kenyan sugar production companies performed in relation to their inventory management strategies. Finance managers of the companies completed questionnaires to provide the study's primary data. The secondary data came from KSB sugar statistics yearbooks. Using a computer Programmed called SPSS Package, a summary of the frequencies, means, and standard deviations was acquired and examined. The MRP system is a key factor in the Lean inventory system. Two companies have had negative average returns on sales and equity during the past six years in terms of financial performance. The average ROE and ROA for the remaining ones are positive. The

results indicate that the financial performance of sugar companies and inventory management procedures generally have a positive association that is above average. Inventory management practices and ROA have a determined connection coefficient of  $r = 0.740$ , while the correlation coefficient between inventory management practices and ROE is 0.653. Additionally, it has been noted that there is a correlation between the inventory management strategies' predictor variables.

Serrano, (2011) did a study titled "Risk Assessment in Inventory Models: The Case of Myopic Policies" that mostly dealt with an inventory model that is typically thought to be captured by the firm's (constant) weighted average cost of capital. Since the cost of capital is endogenous to the firm's decisions, this study investigates the impact of inventory decisions on the cost of capital of the company and how optimal inventories strategies should adjust accordingly. They looked at an inventory model where risk is determined by the inventory choice that is made and has a generic inventory cost function. They added additive and multiplicative financial noise functions in addition to the standard sources of variability, such as demand and market returns, and evaluated the effects of these on the firm's cost of capital as well as the best course of inventory management. The model unites and generalizes a number of models that have been previously proposed in the literature, ranging from a newsvendor model with endogenous risk to the economic order quantity model. According to the study, risk is not always a monotone function of inventory, and any source of variability might have a big effect on the company's cost of capital. However, if demand is stochastic, the influence of the financial noise functions on the best inventory policy is either negligible (for multiplicative shocks) or nonexistent (for additive shocks), and it is unimportant (for deterministic demand).

Koumanakos (2008) did study on "The effect of inventory management on firm performance" and tested the hypothesis that efficient (lean) inventory management improves a firm's financial performance. The extremely competitive climate of today is drawing more and more attention to lean management. The ICAP database, which has financial data on all medium-sized to big Greek enterprises, provided the data for the analysis. The years 200–2002 were included in the sample. Every year, all manufacturing companies that operate in any of Greece's three representative industrial sectors—food, textiles, and chemicals—and have the corporate form of society's anonyms were chosen. According to preliminary findings, a company's rate of return

decreases as it moves away from lean operations. The results of other empirical studies on the microeconomic determinants and consequences of inventories are somewhat contradictory. This study clarifies this issue by using more advanced statistical tests applied to a large and recent sample of Greek manufacturers across various industries. The pseudo-likelihood ratio test is also used to test the findings.

**Table 1**

*Meta-analysis of Recent International Article*

<b>S.N</b>	<b>Date and Author</b>	<b>Topic</b>	<b>Objectives</b>	<b>Methodology</b>	<b>Findings</b>
1	Silva and Madhavi (2023)	Inventory Management in Sri Lanka Small and Medium Retail Shops.	This paper presents the findings of a survey conducted among small and medium-sized retail establishments in the western province of Sri Lanka, with the aim (Dr.Rao, 2014)of offering entrepreneurs guidance for implementing efficient inventory	Regression, descriptive statistics.	The majority of small and medium-sized retail establishments, according to the study, use an appropriate inventory management instrument, and only a limited number of supply chain variables have a statistically significant impact on inventory

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			management (IM) techniques		management procedures.
2	Rachman and Suhaimi (2022)	The Relationship Between Inventory Management and Company's Performance of Textile Chain Stores in Malaysia.	To study relationship between inventory management and company performance.	Regression, descriptive and inferential statistics.	Finding reveals that there is significant relationship between inventory management inventory and company's performance.
3	Acharya, (2021)	Inventory Management and Financial Performance of Nepalese Public Enterprises.	To analyze the inventory management and the profitability of PE in Nepal.	Descriptive and Analytical research designs.	Even while the study did not find a significant correlation between inventory management and the profitability of PEs in Nepal, it did recommend that PEs in that country should manage their working capital well in

					order to attain optimal profitability.
4	Mulandi and Dismail (2019)	Effect of inventory management practices on performance of commercial state corporations in Kenya.	To determine the effect of just-in-time inventory system on performance of commercial state corporations in Kenya and to assess the effect material requirement planning on performance of commercial state corporations in Kenya.	Descriptive survey method Regression analysis.	The study established that just-in time inventory system and material requirement planning have positive and significant relationship with performance. The study concludes that inventory management has positive and significant relationship with the performance of commercial state corporations in Kenya.

5	Nawawi and Salin (2018)	Inventory management effectiveness of a manufacturing company – Malaysian evidence	To examine the standard operating procedure (SOP) on inventory management practices, identify any weaknesses in inventory management and examine its impact on the performance of the company.	Descriptive, correlations and regression analysis.	This study also reveals that the SOPs are too general and lack specificity. However, poor inventory management has a modest influence on the financial performance of the company.
6	Rachman and Suhaimi (2016)	Inventory management and company's performance of Textile Chain Stores in Malaysia.	To analyze relationship between inventory management and company's performance	Both Descriptive and inferential statistics	It was concluded that improved inventory management practice will lead to better performance in terms of profit, reducing inventory cost and maximize utilization of resources

7	Chepkulei (2015)	Role of Inventory Management Practices on Performance of Production Department' of Manufacturing firms.	The objective of this research was to establish the role of inventory management on the performance of the production department.	Descriptive research design.	The study established that MRP 1 was most effective in contributing to performance of production department despite the fact that most organizations used action level methods.
8	Etim and Ime (2015)	Inventory Management Practices and Operational Performance of Flour Milling Firms in Lagos, Nigeria	To examine the inventory management practices of flour milling manufacturing companies and to examine the effects of the identified inventory management	Descriptive statistics, panel regression analysis.	It is concluded that a significant relationship exists between inventory management practices and organizational performance among flour milling manufacturing companies.

9	Kasisomayaju la (2014)	Analytical Study on Inventory Management in Commercial Vehicle Industry in India.	The objective of the study was to study the size of inventory of the selected units in Indian.	Both Descriptive and inferential statistics	The researcher conclude that while managing the inventory position of the company we have to concentrate the four aspects of inventory management viz, size, composition, circulation and growth of inventory.
10	Koumanakos (2008)	The effect of Inventory management on firm performance	The objective of this study was impact on inventory management practices on financial performance of manufacturin g firms	Descriptive, correlations and regression analysis	Additionally tested by the use of pseudo- likelihood ratio test which constitutes from other empirical studies on the microeconom ic determinants

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and  
consequence  
of inventories  
are somewhat  
contradictory,  
this study  
sheds more  
light to this  
issue by  
employing  
more  
sophisticated  
statistical  
tests applied  
to a large.

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### **2.3 Research Gap**

Although inventory has long been a key academic topic in possibilities oversight, empirical investigations of inventory levels and performance have only lately been conducted. The inventory management field has seen a great deal of research, with results that also align with the goals of the investigators. The goals outlined in this study, however, have not yet been met. Scholars have employed diverse ratio analysis methodologies to execute those analyses. In light of this, the study's scope is expanded, offering a thorough picture of Nepalese firms' inventory management procedures and its impact on the performance of the organization. Therefore, this study is beneficial from both an academic and policy standpoint for interested parties, scholars, educators, members of civil society, stakeholders, businesspeople, and the government.

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

A research methodology refers to a specific approach to finding, evaluating, managing, and interpreting data. Research methodology enables the assessment of accuracy, compatibility, and dependability. Finding the investigation's goal can be aided by the use of research methods. The study objectives are the reason behind the application of the carried-out approach.

#### **3.1 Research Design**

The study used both descriptive and causal comparative research design. Using information from the annual reports of three manufacturing companies in Nepal (selected as the sample using the random sampling method), the quantitative research strategy was required to quantify the data and determine the liquidity ratio (CR & QR), ICP, and ITR.

#### **3.2 Population and Sample, and Sampling Design**

Among the total manufacturing firm in Nepal three manufacturing firm are taken as a sample from the whole population. Ten-year (2013/14 -2022/23) data is taken for the purpose of this study. The following MFIs have been chosen for the study's sample population:

1. Unilever Nepal Ltd
2. Surya Nepal Limited
3. Dabur Nepal Ltd

#### **3.3 Nature and Source of Data, and the Instrument of Data Collection**

The main source of data in this study is secondary data. This quantitative data has been taken for the study. Concern manufacturing company website, and internet are the sources of the data. Using the random sampling approach, a sample of three businesses was selected. The published audited reports served as additional selection criterion for the sample.

### 3.4 Methods of Analysis

All of the data that was gathered is organized and collated under different headings to increase the specificity and reliability of the research. After that, statistical analysis is done to shed light on the study. The SPSS program has been used to enter and evaluate all of the data. Regression analysis, correlation, and central tendency measurements were the statistical methods used to present and examine the data.

Basically, financial methods are applied to carry out this study as well as appropriate statistical tools are also used for this study. These two tools are as follows:

- **Financial method.**
- **Statistical method.**

#### 3.4.1 Financial Tools

Financial instruments have the potential to identify financial indicators, or ratio assessments. A ratio analysis is performed to ascertain the qualitative link between two variables by illuminating the mathematical relationship between two numbers. When deciding on inventory management, the ratio is useful. In this study Inventory Turnover Ratio, Inventory Conversion period and Current & Quick Ratio are used.

Under the ratio analysis the following ratio can be analyzed.

#### **Inventory Turnover Ratio**

The inventory turnover ratio reflects the speed at which sales are converting inventory into receivables. This signifies that the ratio demonstrates the business's effectiveness in inventory management. The ratio of closing inventory or average inventory to sales or cost of goods sold is known as the inventory turnover ratio.

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$\text{Or} = \frac{\text{Sales}}{\text{Closing Inventory}}$$

The ratio displays the frequency of inventory replacements throughout the course of the year. A higher inventory turnover rate is indicative of effective inventory management, whereas a lower turnover rate implies that management is not managing its inventory well. To maximize and enhance an organization's financial performance, effective

inventory management is essential. Through the optimization of inventory levels in relation to production capacity and demand, companies can minimize carrying costs, boost cash flow, and optimize overall operational efficiency.

### **Inventory Conversion Period (ICP)**

The average amount of time needed to turn inventory into sales is measured by the Inventory Conversion Period, sometimes referred to as Days Inventory Outstanding (DIO). It is only concerned with inventory control. One of the most important metrics for assessing how well a company manages its inventory is the Inventory Conversion Period (ICP). It has a big impact on both the financial stability and overall operational performance. Businesses may boost cash flow, save expenses, and increase profitability by comprehending and optimizing ICP. This will ultimately improve their financial performance and market competitiveness.

$$\text{Inventory Conversion Period} = \frac{\text{Average Inventory}}{\text{Cost of Goods Sold}} \times 365$$

Where,

Average inventory is calculated as the sum of beginning and ending inventory for a certain time period.

Cost of items Sold (COGS) refers to the direct costs associated with the manufacturing of items sold by an organization.

### **Liquidity Ratio**

For the business, it is the most significant component. It demonstrates the company's ability to pay its present debt. The current ratio and quick ratio are used to calculate the company's liquidity status.

### **Current Ratio (CR)**

The Current Ratio calculates how much of a company's short-term assets can be used to settle its short-term liabilities. It shows if the business will have enough cash on hand to pay down its debts in the upcoming year. Analyzing the relationship between a company's profitability and operational effectiveness and liquidity as indicated by the current ratio. Also, investigating how effective inventory management strategies affect

the Current Ratio, and vice versa. This ratio is computed as dividing current assets by current liabilities.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

### **Quick Ratio (QR)**

Quick ratio is the portion of quick assets by current liabilities. Quick ratio does not include the amount invested in the inventories. 1:1 portion of quick ratio is taken as the preferred portion of the ratio and indicate the sound ratio. The Quick Ratio, sometimes referred to as the Acid-Test Ratio, assesses how well a business can use its most liquid assets to cover its short-term obligations. When it comes to evaluating liquidity, this ratio is stricter than the current ratio. Analyzing the impact of liquidity, as determined by the Quick Ratio, on the financial stability and stress tolerance of the organization. Without relying on inventory, the Quick Ratio offers information on the company's liquidity and aids in understanding how inventory management techniques affect the organization's overall financial health.

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

### **Return on Total Assets (ROA)**

Return on total assets measure the profitability of total fund or investment of the firm. It can be expressed as the relationship between net profit after taxes plus interest and total assets. But it is not sufficient for the analysis of overall profitability of different source of fund for financing the total assets.

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}}$$

### **Return on Equity (ROE)**

Return on equity (ROE) is a measure of financial performance. Because shareholders' equity is equal to a company's assets minus its debt, ROE could be thought of as the return on net assets.

$$\text{ROE} = \frac{\text{Net Income}}{\text{Shareholders Equity}}$$

### **Operating Margin (OM)**

Operating Margin is the percentage of revenue that remains after operating expenses, such as inventory management costs that are directly tied to the production and sale of goods are subtracted. This indicator shows the effectiveness and efficiency of an organization's inventory management strategies as well as how they affect the total profitability of the main business operations.

$$OM = \left( \frac{\text{Operating Income}}{\text{Revenue}} \right) \times 100$$

### **3.4.2 Statistical Tools**

The help of statistical tools is essential to measure the relationship of two or more variables. In this study, mean, Standard Deviation, coefficient of Variations, Multiple Regression are used.

#### **a) Arithmetic Means (Average)**

To measure central tendency the arithmetic mean used which is also known as the mean or average. The mean is statistical constants which enable researcher to enable to comprehend in a single effort. Arithmetical mean represents the entire data by a single value. The mean provides us the gist figure of our huge data to a single result and assist the researcher the bird 's eye view.

The formula for the calculation of mean can be shown as:  $\bar{x} = \frac{\text{Sum of all data points}}{\text{Number of data points}}$

#### **b) Standard Deviation**

Dispersion is the degree of the variation of the individual items about a central value. The standard deviation measures the absolute dispersion. The greater the amount of dispersion greater the standard deviation. The small standard deviations mean a high degree of uniformity of the observation as well as homogeneity of a series and vice versa. In this study, standard deviation is calculated for inventory turnover ratio, cash conversion cycle, liquidity ratio (current/quick), return on assets, return on equity and operating margin.

$$\sigma = \frac{\sqrt{\sum (x - \bar{x})^2}}{N}$$

Where:

$x$  = each individual observation of sample manufacturing firm

$\bar{X}$  = Mean, an average in the data set of sample manufacturing firm

$N$  = The total number of populations in a data set

### c) Correlation Coefficient (r)

Correlation can be defined as the degree of linear relationship existing between two or more variables. These variables are said to be correlated when the change in the value of one result change in that of another variable. In simple correlation the effect of others is not included rather they are taken as constant considering them to have no serious effect on the dependent variable

$$\text{Co-efficient of correlation (r)} = \frac{N\sum XY - \sum X \cdot \sum Y}{\sqrt{[N\sum x^2 - (\sum X)^2]} \sqrt{[N\sum Y^2 - (\sum Y)^2]}}$$

Where,

If  $r = 0$ , there is no significant relationship between the variables.

If  $r < 0$ , there is negative relationship between the variables.

If  $r > 0$ , there is no positive relationship between the variables.

If  $r = +1$ , there is perfectly positive relationship between the variables.

### d) Multiple Regression

Multiple regression analysis is a logical extension of the simple linear regression analysis. Instead of single independent variable, two or more independent variables are used to estimate the unknown values of a dependent variable. However, the fundamental concept in the analysis remains the same. Multiple regression is defined as statistical device which is used to estimate (or predicts) the most probable value of dependent variable on the basis of known value of two or more independent variables. The following multiple regression equation is analyzed.

Regression Equation for dependent variable:

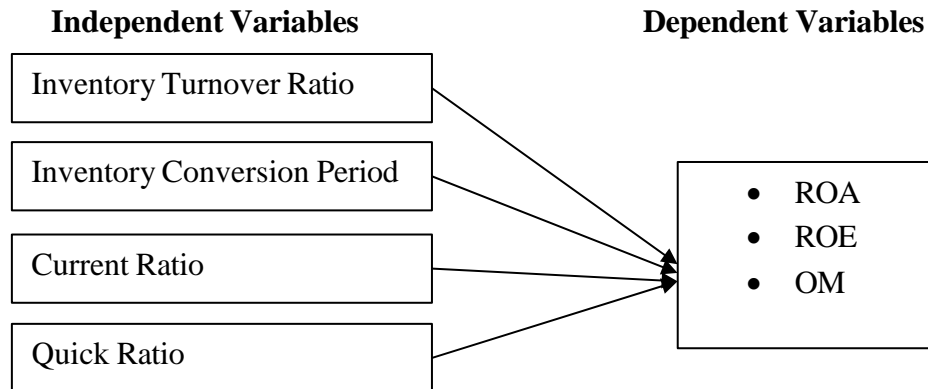
$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 +$$

Where,

Y= Dependent variable

b1, b2, b3= Independent variables

### 3.5 Research Framework and Definition of Variables



*Source: Koumanokos, (2008)*

#### **Inventory Turnover Ratio**

A financial indicator called the inventory turnover ratio counts the number of times an organization sells and replaces its stock over a given time frame, usually a year. One of the most important metrics for evaluating how well a company manages its inventory is the inventory turnover ratio. Businesses can increase operational effectiveness, cut expenses, boost profitability, and increase liquidity by keeping an ideal turnover ratio. A greater inventory turnover ratio means that a business is selling and replenishing its goods more regularly, which is typically a sign of effective inventory control, strong sales results, and cheaper holding expenses. Higher holding costs and possible write-offs may result from overstocking, obsolescence, or poorer sales performance, all of which can be indicated by a lower inventory turnover ratio. The turnover ratio can be raised by using efficient techniques including demand forecasting, Just-in-Time (JIT) inventory, and frequent inventory checks.

#### **Inventory Conversion Period**

The average number of days it takes a business to turn its inventory into sales is measured by the Inventory Conversion Period (ICP), often referred to as Days Inventory Outstanding (DIO). It offers perceptions on how effectively a business handles its stock and how rapidly it rotates stock over a specified time frame. A company's inventory control proficiency is measured by ICP. A lower ICP suggests

more effective sales and inventory management procedures since it denotes a quicker turnover of goods. Organizations can detect inefficiencies in their inventory management procedures by tracking ICP, which can assist in lowering holding expenses like obsolescence, insurance, and storage. Shorter inventory turnover periods (ICPs) increase cash flow since they free up money for earlier reinvestment in the company or other profitable endeavors. ICP helps businesses maximize their operations by offering insights on the efficacy of manufacturing, sales, and procurement methods.

### **Current Ratio**

A company's short-term liquidity and capacity to meet immediate obligations are indicated by its current ratio, which is the ratio of its current assets to its current liabilities. By displaying the amount of liquidity available to fund inventory purchases, manage working capital, and satisfy immediate operational needs, the current ratio, as an independent variable, can have an impact on inventory management procedures. Assessing the connection between risk and liquidity to see if greater liquidity lowers risk in the financial system. Examining the relationship between effective inventory management techniques and the current ratio as well as the reverse. The current ratio can be used to assess a company's ability to pay off short-term debt, which can have an impact on how working capital and short-term investments are managed.

### **Quick Ratio**

The ability of a business to satisfy its short-term obligations using its most liquid assets (apart from inventories) is gauged by the quick ratio, commonly referred to as the acid-test ratio. The quick ratio is an independent variable that can impact inventory management strategies by emphasizing the company's ability to manage inventory levels and its immediate liquidity position without excessively depending on liquidating inventory to satisfy short-term obligations. Analyzing the relationship between liquidity (as indicated by the Quick Ratio) and the company's resilience to financial duress. Quick Ratio offers information on the liquidity of the business without depending on inventory, making it easier to comprehend how inventory management techniques affect the company's overall financial health.

**Return on Assets**

ROA calculates how well assets are used to produce profits. It shows how well a business uses its resources including inventory to produce revenue. Higher ROA can result from better inventory management techniques that maximize turnover and inventory levels. Analyzing the effects of inventory turnover, ICP, and other inventory management techniques on ROA is helpful. When used as a dependent variable, ROA can reveal important information about how successfully a company's liquidity control and inventory management techniques support overall profitability and shareholder value.

**Return on Equity**

Return on Equity is a metric used to assess a firm's profitability. It shows how much profit a company makes on the capital that shareholders have contributed. It shows how successfully management is generating profit from the company's equity foundation. A greater ROE suggests solid financial health and competent management since it shows the company is more efficient at producing income per unit of stock. A reduced ROE raises the possibility that the business isn't making the best use of its equity to turn a profit. Investigating the effects of liquidity ratios on return on equity (ROE), such as the current ratio and quick ratio, which show how well short-term assets and liabilities are managed. It's crucial to look into a range of variables that affect ROE fluctuations, including revenue growth, cost control, and operational effectiveness.

**Operating Margin**

An organization's operating margin provides insight into the overall profitability of its primary business operations, as well as the efficacy and efficiency of its inventory management procedures. After deducting operating expenses, operating income is the portion of profits that originate from core operations. It is relevant to inventory management since it covers expenses for handling, storing, and buying raw materials as well as inventory control systems. An organization with a larger operating margin typically manages its inventory more profitably, resulting in reduced expenses overall and more profitability from core businesses. A reduced operating margin is indicative of inventory management inefficiencies, which raise operating costs and impair profitability. Examples of these inefficiencies include high holding charges, stock outs, or overstock scenarios.

## **CHAPTER IV**

### **RESULT AND DISCUSSION**

This first section of this chapter, on descriptive statistics, gives a summary of the key characteristics of the research variables. The correlation analysis in the second section illustrates the degree of association between the research variables, and the regression findings of the models created in the preceding chapter are shown in the third section.

#### **4.1 Results**

This section examines the form and trend of the dependent variables, such as return on equity, return on assets, and operating margin, of the sampled manufacturing companies from 2013/2014 to 2022/23, as well as the independent variables, such as inventory turnover ratio, inventory conversion period, current ratio, and quick ratio.. The use of inventory management is influenced by the characteristics of the company and the risk tolerance of the management. Businesses, both industrial and non-manufacturing, use a range of organizational structures. The random sample approach is used to select the top three manufacturing enterprises from the overall population that are relevant for the investigation.

##### **4.1.1 Financial Analysis**

###### **4.1.1.1 Inventory Turnover Ratio**

For manufacturers, the Inventory Turnover Ratio is an essential indicator that shows how well inventory management procedures are working. Businesses can increase operational efficiency, cut expenses, and boost profitability by concentrating on increasing turnover rates through practical tactics like JIT, ABC analysis, EOQ, and utilizing cutting-edge inventory management systems. In the highly competitive manufacturing industry, sustaining an ideal turnover ratio presents several obstacles that must be recognized and resolved for sustained success.

Table 2

*Inventory Turnover Ratio of all selected Companies*

Name of the companies	UNL	SNL	DNL
2013/2014	4.93	2.66	0.53
2014/2015	10.21	0.68	0.89
2015/2016	6.63	0.74	7.22
2016/2017	9.41	2.88	6.45
2017/2018	5.11	1.19	5.65
2018/2019	4.23	2.44	5.25
2019/2020	11.22	3.18	3.77
2020/2021	12.45	3.89	4.65
2021/2022	12.68	1.42	4.13
2022/2023	6.89	3.51	2.72
Average	8.38	2.36	4.23
<b>Total observation(N)</b>			<b>30</b>

20

*Source: Appendix V, VI*

The Table 2 shows the inventory turnover ratio of all three companies (UNL, SNL & DNL) during period of 10 fiscal years. The average proportion of the selected companies is mentioned in the above table varying from 2.36 times to 8.38 times. The UNL ranges from 4.93 to 12.68 per year. With a ratio of 4.93 to 4023, it shows a fluctuating trend from 2013/14 to 2018/19. Once more, there is an increasing trend from the ratio of ranging 11.22 to 12.68 from 2019/2020 to 2021/22. Likewise there is decrease in the ratio, which goes from 12.68 to 6.89 from 2021/2022 to 2022–2023. There are both ups and downs trend in SNL. Every fiscal year, the SNL fluctuates between 2.66 and 3.51. With the exception of the years 2017/18 to 2020/21, when it is in increasing trend 1.19 to 3.89, it follows an upward (increasing) pattern except for declined year. The DNL range shows a fluctuating pattern, ranging from 0.53 to 2.72. It has increased rapidly in 2015/2016 from 2013/14 being 0.53 and 2014/15 being 0.89

to 7.22. The ratio improved only on 2015/2016, 2016/2017, 2017/2018 fiscal year having ratio 7.22, 6.45 & 5.65, after which it began to decrease and increase, reaching a ratio of 2.72 in 2022/2023.

#### 4.1.1.2 Inventory Conversion Period

One of the most important metrics for assessing how well a company manages its inventory is the Inventory Conversion Period (ICP). It has a big impact on both the financial stability and overall operational performance. Businesses may boost cash flow, save expenses, and increase profitability by comprehending and optimizing ICP. This will ultimately improve their financial performance and market competitiveness. The percentage of sales to accounts receivable shown below.

Table 3

#### *Inventory Conversion Period of all selected Companies*

Name of the companies	UNL	SNL	DNL
2013/2014	33.34	11.25	368.15
2014/2015	36.31	12.5	232.56
2015/2016	84.11	5.58	212.06
2016/2017	25.38	6.89	188.56
2017/2018	59.86	13.68	152.89
2018/2019	36.55	5.39	57.65
2019/2020	33.32	38.3	325.52
2020/2021	28.45	65	422.84
2021/2022	56.42	82.6	348.42
2022/2023	41.23	98.3	309.99
Average	43.58	33.95	261.86
<b>Total observation(N)</b>			<b>30</b>

20  
Source: Appendix II, V

Table 3 presents the inventory conversion period of selected organizations. The range of the average ratio are 43.58, 33.95 and 261.86 of UNL, SNL and DNL respectively. The ICP of UNL and SNL are shorter whereas DNL is found longer indicating the chance of insolvency. Both UNL and SNL had lower ICP which is good for the organization. The inventory conversion period of UNL is in increasing and decreasing trend ranging from 33.34 to 41.23 days. The SNL ICP is fluctuating between 11.25 to 98.3 days. Similarly, the ratio of DNL is in fluctuating trend ranging from 368.15 to 309.99 days. The lowest ICP of UNL is 25.38 in fiscal year 2016/17 and highest is 84.11 in year 2015/16. The SNL have lower ICP in 2018/19 as 5.39 and highest 98.3 in year 2022/23. Similarly, DNL have lowest and highest value 57.68 & 422.84 in year 2018/19 and 2020/21 respectively. A lower ICP suggested higher levels of enterprise liquidity, which in turn meant lower borrowing costs, more chances to take advantage of price breaks when buying raw materials with cash, and more ability to finance corporate growth. Businesses can increase overall profitability and operational efficiency by making well-informed decisions about inventory levels, production schedules, and sales tactics by tracking and optimizing the ICP.

#### **4.1.1.3 Liquidity Position**

The ability to pay bills is sourced from the liquidity position. Its working capital policy determines this. The firm's liquidity position is low when it pursues an aggressive strategy and high when it pursues a conservative one. It displays the company's immediate financial health. These ratios—the current ratio and quick ratio—can be used to examine these companies' liquidity condition.

##### **a. Current Ratio**

It is the relationship that exists between current assets and current liabilities. The gross short-term liquidity of the company is computed using the current ratio. Current assets are those that can be easily converted into cash in less than a year. Current obligations are debts that need to be repaid right away, usually in less than a year. A good current ratio in the context of inventory management indicates that a business has enough current assets to pay for its short-term commitments, which includes inventory. To avoid adversely affecting liquidity, it's crucial to find a balance between keeping just enough inventory to satisfy consumer demand and avoiding investing an excessive amount of money on unsold goods. The current ratio for the related companies during the study period is computed in the table below.

Table 4

*Current Ratio of all selected Companies*

Name of the companies	UNL	SNL	DNL
2013/2014	0.79	0.86	2.36
2014/2015	1.87	0.46	1.63
2015/2016	0.73	0.88	2.57
2016/2017	0.68	0.64	3.73
2017/2018	0.75	0.42	4.67
2018/2019	0.65	0.47	1.72
2019/2020	0.93	0.56	4.53
2020/2021	0.84	0.38	2.16
2021/2022	0.56	0.35	1.38
2022/2023	0.89	1.08	1.23
Average	0.86	0.61	2.59
<b>Total Observation (N)</b>			<b>30</b>

20  
 Source: Appendix V, VII, IV

Table 4 shows that the average ratios of UNL, SNL, and DNL are 0.86, 0.61, and 2.59, respectively. The average current ratio of chosen UNL and SNL company is less than 2:1, except just the case of DNL, which is perfect according to the principle, which states that a current ratio can be regarded perfect if it is 2:1 or above for each individual organization. Over the study period, there is a lot of variation in the current ratio. The range for UNL was 0.79 to 0.89 times, for SNL it was 0.86 to 1.08 times, and for DNL it was 2.36 to 1.23 times. Among them, DNL's present ratio position appears to be significantly better than that of the others, which is increasing. The SNL current ratio constantly shows an upward and downward trend, and it goes below of the required 2:1 ratio. While the UNL current ratio is more stable than the SNL ratio, it however varies, showing a growing and declining tendency.

### b. Quick Ratio

The ratio measures immediate solvency in total values. It may not reflect the true liquidity position of the company because it excludes prepaid expenses and less liquid assets like inventories. Thus, the Quick Ratio has been employed to assess the net-term liquidity status of a subset of listed corporations. The table below displays the calculated quick ratios for a selection of listed corporations.

Table 5

*Quick Ratio of all selected Companies*

Name of the companies	UNL	SNL	DNL
2013/2014	0.09	0.42	0.98
2014/2015	0.16	0.28	1.12
2015/2016	0.26	0.72	1.81
2016/2017	0.28	0.19	1.97
2017/2018	0.26	0.22	3.62
2018/2019	0.35	0.27	1.47
2019/2020	0.38	0.16	4.91
2020/2021	0.43	-0.25	1.23
2021/2022	0.52	0.53	1.89
2022/2023	0.46	0.34	2.76
Average	0.51	0.28	2.18
<b>Total Observation (N)</b>			<b>30</b>

20

*Source: Appendix V, IV*

The Table 5 presents the year-over-year quick ratio for every company in less than the required 1:1 ratio except for DNL having average ratio 2.18. Organizations' quick ratios vary as well. Even though UNL's quick ratio is below the normal 1:1 ratio, it is still on the rise and getting closer to the standard, which is at 0.51. The overall observation ratio is irregular ranging from 0.42 to 0.34, with SNL having the highest ratio in the fiscal year 2015/16 at 0.72. In the same way, DNL has a decreasing and increasing pattern, with its highest ratio being in the 2019/20 year at 4.91. UNL and SNL organizations'

quick ratios are below the standard 1:1 ratio, even if the majority of them are trending upward. Therefore, organizations need to look at how its inventory management has been carried out to maintain CA and CL.

#### 4.1.1.4 Return on Assets (ROA)

Return on Assets (ROA) calculates the proportion of ROA applied to all of these selected companies' activities. With respect to total assets, it provides the profit earning efficiency of the selected manufacturing firms. The following table computes the return on assets ratio.

Table 6

*Return on Assets (ROA) of all selected Manufacturing Firms*

Name of the companies	UNL	SNL	DNL
2013/2014	-0.51	-2.8	1.7
2014/2015	-0.32	-0.7	1.9
2015/2016	-0.41	-1.2	0.23
2016/2017	-0.44	-2.7	0.98
2017/2018	-0.42	-1.28	0.46
2018/2019	-0.28	-1.52	0.29
2019/2020	-0.38	-2.17	0.65
2020/2021	-0.29	-1.6	0.36
2021/2022	1.28	4.6	0.46
2022/2023	2.36	1.9	0.38
Average	-0.19	-0.74	0.74
<b>Total Observation (N)</b>			<b>30</b>

*Source: Appendix VIII*

From the Table 7, it shows the significant variations in the selected organizations' average return on total assets. The average range of UNL, SNL and DNL are -0.19, -0.74 and 0.74 respectively. DNL has been found to have the highest average ratio, whereas UNL has the lowest, with significant fluctuations in its ratio. With a ratio of 1.7% in 2013/14, DNL has the greatest ratio while SNL has the lowest, at -0.7% in 2014/15. UNL has been found to have average ratio -0.19, it has very low fluctuation

as compared to SNL and DNL with a ratio ranging from -0.51 to 2.36%. All of the companies' returns are very low, except only the case of DNL, which indicates efficient asset utilization.

#### 4.1.1.5 Return on Equity (ROE)

Return on equity (ROE) is a measure of financial performance calculated by dividing net income by shareholder's equity. It shows how well a business uses the money that its investors have contributed to make profits. The following table computes the return on equity ratio.

Table 7

*Return on Equity (ROE) of all selected Manufacturing Firms*

Name of the companies	UNL	SNL	DNL
2013/2014	9.6	-10.7	3.8
2014/2015	3.6	-2.0	4.4
2015/2016	3.2	8.4	7.8
2016/2017	8.7	6.3	14.1
2017/2018	14.3	5.7	5.8
2018/2019	2.7	3.8	7.8
2019/2020	6.9	7.9	9.5
2020/2021	6.4	-4.8	3.9
2021/2022	2.6	8.3	2.7
2022/2023	3.6	3.2	4.5
Average	5.92	6.31	6.43
<b>Total Observation (N)</b>	<b>30</b>		

*Source: Appendix IX*

From the Table 7, it displays the notable fluctuations in the average return on equity of the chosen organization. It falls between 5.92% and 6.43%. It was discovered that DNL has the greatest average ratio and that UNL has the lowest, with no apparent differences in either ratio when compared to the others. UNL has the highest ratio, 14.3% in

2017/18, while SNL has the lowest, -10.7% in 2013/14. With an average ratio of 8.3%, SNL has been observed to fluctuate significantly when compared to UNL and DNL, neither of which is higher nor lower than the other. With the exception of SNL, all of the companies had excellent returns, indicating inefficient use of equity. High ROE ratios are required by investors as they show that businesses are making good use of their capital. Though they needed to be compared to other businesses' ratios in the sector, higher ratios were nearly always preferable to lower ratios.

#### 4.1.1.6 Operating Margin (OM)

Operating Margin (OM) is a measure of how well a business can turn a profit from its main business operations. It indicates how effectively income is converted into profit when variable expenses of production, including labor and raw materials, are taken into account, but before taxes and interest. The following table computes the operating margin

Table 8

*Operating Margin (OM) of all selected Manufacturing Firms*

Name of the companies	UNL	SNL	DNL
2013/2014	0.61	-0.71	-0.8
2014/2015	1.66	-2.01	-0.51
2015/2016	1.82	0.42	-0.68
2016/2017	0.73	0.52	-0.56
2017/2018	-0.48	0.74	0.93
2018/2019	0.72	-0.82	0.87
2019/2020	0.96	-0.79	0.52
2020/2021	0.98	1.81	0.98
2021/2022	0.97	0.34	0.75
2022/2023	1.32	0.44	-0.98
Average	0.93	-0.05	0.06
<b>Total Observation (N)</b>	<b>30</b>		

*Source: Appendix IX*

Table 8 shows the operating margin of all selected companies. The average proportion of UNL, SNL and DNL are 0.93, -0.05 and 0.06 respectively. The ratio of UNL range from 0.06 to 1.32. It has negative OM in fiscal year 2017/18 having -0.48 ratio. The SNL has the most negative ratio in comparison to other organization. It range from -0.71 to 0.44. Similarly, DNL too have negative OM but in comparison to SNL it has better ratio. The operating loss should be more severe if the negative percentage was bigger. Operating expenses were to be covered by cash reserves, proceeds from the sale of assets, or additional funding when an organization's daily operating expenditures exceeded its sales.

#### 4.1.2 Statistical Analysis

##### 4.1.2.1 Descriptive Analysis

Descriptive analysis is the process of using data to identify, highlight, or summarize information in a way that makes sense and allows for the identification of patterns that meet all the criteria for the data. Doing a statistical analysis of the data is one of the most important tasks. Descriptive statistics for the years 2013–2022 and 2022–2023 have been used to describe the characteristics of a few manufacturing company factors. The descriptive statistics used in this inquiry were the mean, standard deviation, and lowest and highest values relating to the variables under consideration. The dependent and independent variables are described in detail below, with percentages presented as they relate to the year.

Table 9

*Descriptive statistics analysis of independent and dependent variables*

	N	Minimum	Maximum	Mean	Std. D
ITR	30	0.79	9.81	3.76	1.48
ICP	30	28.96	308.9	126.86	72.2
Current Ratio	30	0.74	2.65	1.32	0.63
Quick Ratio	30	0.18	2.44	0.84	0.57
ROA	30	0.39	2.03	1.60	1.27
ROE	30	-0.59	0.68	0.28	1.08
OM	30	-0.12	0.53	0.23	0.17

*Source: IBM SPSS 26*

The Table 9 shows descriptive statistics that have been generated using SPSS. There are 30 observations in the collection of data. Return on Equity (ROE), Return on Assets (ROA) and Operating margin (OM) are the measures used for evaluating the dependent variable. While ROE evaluates management effectiveness in terms of equity, ROA evaluates management effectiveness in terms of utilizing assets and OM evaluates management effectiveness in terms of operational efficiency and profitability of a company. The ROA ranges from 0.39 at the minimum to 2.03 at the maximum. In the meantime, 1.60 is the mean return. This indicates that each of the three manufacturing companies that were selected generated an average return on assets of about 16%. On the other hand, the independent variables are the measures of inventory management and they include Inventory Turnover Ratio, Inventory Conversion Period, Current Ratio and Quick Ratio.

The ITR, with a mean of 3.76 and a standard deviation of 1.48, measures the company's capacity to turn inventories into finished products. The values range from 0.79 to 9.81, respectively, at the maximum and minimum. The mean was 3.76 and the standard deviation was 1.48. The maximum and minimum values for the ICP are 28.96 and 308.9, respectively. Lastly, the standard deviations of the liquidity ratios for CR and QR are 0.63 and 0.57, respectively, and their means are 1.32 and 0.84, respectively. According to the data, ROE and ROA on average showed a significant return on the total assets invested. In comparison to ROA, OM was often determined to be lower. The overall liquidity position was average.

#### **4.1.2.2 Correlation Coefficient Analysis**

Correlation matrix shows the correlation coefficient between variables and that is the way to summarize the data. Following calculations, the Correlation Coefficients are shown in Table 10. The degree of a relationship between two variables is known as correlation. A weak, or low, correlation indicates that there is little to no relation between the variables, whereas a strong, or high, correlation indicates that two or more variables have a significant relationship. The range of correlation coefficients is -1.00 to +1.00. A perfect negative correlation is represented by a number of -1.00, whereas a complete positive correlation is represented by a value of +1.00. A result of 0.00 indicates that the variables under analysis have no relationship.

Table 10  
*Correlation Matrix of Dependent and Independent Variables*

	ITR	ICP	CR	QR	ROA	ROE	OM
ITR	1						
ICP	-.282	1					
Current Ratio	.407	.451	1				
Quick Ratio	.487	.383	.96**	1			
ROA	.063	-.193*	.656	.787**	1		
ROE	.045**	-.721	.645	.219	.154	1	
OM	.436	-.478	.162	.296	-.390	.079*	1

\*\* Correlation is significant at the 0.01 level (2-tailed)

\*. Correlation is significant at the 0.05 level (2-tailed)

Source; IBM SPSS 26

An understanding of how well an organization manages its inventory and how that management impacts profitability can be gained by examining the correlation between a number of financial ratios, including the inventory turnover ratio, inventory conversion period, quick ratio, current ratio, return on assets (ROA), return on equity (ROE) and operating margin (OM). Table 10 shows the correlation data, which were obtained using SPSS, to verify if there is significant or no significant link between the variables.

ROA (0.063) and the inventory turnover ratio (ITR) have a strong correlation. According to this, ROA will improve by 0.063 for each unit increase in ITR. This implies that businesses often have higher returns on assets when they have higher inventory turnover ratios. The statistical analysis reveals a substantial association ( $r = .045$ ) between ITR and ROE. It shows that an increase of 1 unit in ITR will lead into a 0.45 increase in ROE. This indicates that businesses often have higher returns on equity when they have higher inventory turnover percentages. Effective inventory management, as demonstrated by a high ITR, lowers the expenses associated with keeping inventory on hand, improves cash flow, and increases profitability all of which have an impact with ROE.

There is no significant relationship between ITR and ICP. The value is -0.282 which means they are inversely related. Also, ICP is inversely related to ROA, ROE and OM having values of -0.193, -0.721 and -0.478 respectively. It indicates that, increase in 1

unit of ICP value decreases the value of ROA, ROE and OM. Businesses that have shorter ICPs typically have better ROA, ROE, and operating margins, which suggests that they are better at turning inventory into sales and making money off of their equity and assets.

Similarly, there is significant relationship between inventory turnover ratio, current ratio & quick ratio and positive relationship in respect to ROA, ROE & OM having values of 0.063, 0.656, 0.787 and 0.045, 0.645, 0.219 and 0.436, 0.162, 0.296, respectively.

Effective inventory management can lead to improved inventory turnover and a short inventory conversion period, which can raise ROA, ROE, and OM. However, the link between quick ratio, current ratio, ROA, and ROE may vary based on particular conditions and industry dynamics. In order to assess the overall effectiveness of inventory management and its impact on ROA, ROE, and OM, consideration must be given to each of these ratios. Increasing inventory turnover may have a beneficial effect on profitability if ITR has a significant positive coefficient. Similarly, it suggests that keeping good liquidity ratios may help to increase operating profits if CR and QR have sizable positive coefficients.

#### **4.1.2.3 Regression**

According to the model described in chapter three, multiple linear regression analysis has been performed to test the statistical significance and robustness of the results. Basically, it looks at the anticipated relationships between several organization-specific performance indicators and the profitability of a selected group of manufacturing organizations from FY 2013/14 to FY 2022/2023 using regression results from multiple model circumstances. The table shows the regression analysis of the relationship between the dependent and independent variables based on 30 observations by using a linear regression model.

#### **Regression Model Summary**

The following table presents the model summary of dependent variables among independent variables taken under the study. It compares the sign with the prior expectation which also helps in regression analysis.

#### **a. Regression Analysis of Dependent variable (ROA) and Independent Variables (ITR, ICP, CR and QR)**

Data on ROA, ITR, ICP, CR, and QR for the chosen organizations have been gathered in order to do a regression analysis using ROA (Return on Assets) as the dependent variable and ITR (Interest Turnover Ratio), ICP (Inventory Conversion Period), CR (Current Ratio), and QR (Quick Ratio) as the independent variables. Multiple linear regression is the suitable regression model that has been applied.

$$ROA = \beta_0 + \beta_1 \cdot ITR + \beta_2 \cdot ICP + \beta_3 \cdot CR + \beta_4 \cdot QR + \epsilon$$

Here,  $\beta_0$  is the intercept, and  $\beta_1, \beta_2, \beta_3, \beta_4$  are the coefficients for the independent variables.  $\epsilon$  represents the error term.

Table 11

*Regression Model Summary I-Return on Assets & Independent Variables*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.943 <sup>a</sup>	.891	.675	.419

a. Predictors: (Constant), Inventory Turnover Ratio, Inventory conversion Period, Liquidity Ratio (Current Ratio and Quick Ratio)

b. Dependent Variable: Return on Assets

*Source: IBM SPSS 26*

Table 11 presents the regression analysis of the dependent ROA and independent variables Inventory Turnover Ratio, Inventory Conversion Period, and Liquidity Ratio (Current and Quick Ratio). The dependent variable, ROA, and the collection of independent factors have a high positive association, as evidenced by the R-value of 0.943. It had indicated that the model was a strong predictor. R<sup>2</sup> is 0.891 a widely recognized measure that quantifies the extent to which the independent variables account for the variation in the dependent variable. The model R square value indicated that 89 percentages of the variation in the dependent variable had been explained by the independent variables. According to this study's findings, inventory management (including the inventory turnover ratio, inventory conversion period, current ratio, and quick ratio) may account for 89.1% of the variation in dependency. Aside from this, adjusted R<sup>2</sup> is quite comparable to R<sup>2</sup>. It suggests that including an additional

independent variable improves in clarifying why there are variations in the decline of ROA. The standard error is 0.419, a lower number. It implies an improved fit as the result.

**b. Regression Analysis of Dependent variable (ROE) and Independent Variables (ITR, ICP, CR and QR)**

Table 12

*Regression Model Summary II- Return on Equity & Independent Variables*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.891 <sup>a</sup>	.830	.415	0.362

a. Predictors: (Constant), Inventory Turnover Ratio, Inventory Conversion Period, Liquidity Ratio (Current Ratio and Quick Ratio)

b. Dependent Variable: Return on Equity

*Source: IBM SPSS 26*

Table 12 shows the regression study between the dependent ROE and independent variables Inventory Turnover Ratio, Inventory Conversion Period, Current and Quick Ratio. The R-value of 0.891 demonstrated a significant positive correlation between the dependent variable (ROE) and the collection of independent factors. 83 percent of the variation in the dependent variable could be explained by the independent variables, according to the model R square value of 0.830. The model's great predictive power was revealed by this. The proposition is made that introducing a further independent variable could help explain the reasons behind the fluctuations in ROE impairment. 83% of the variation in reliance may be attributed to inventory management, which includes the current ratio, quick ratio, inventory turnover ratio, and inventory conversion period. The standard error is 0.362, which is a lesser number. It implies an improved fit as the result. The efficiency of the regression model in explaining and predicting changes in dependent variables (ROE) in connection to independent variables is shown by all of these findings.

**c. Regression Analysis of Dependent variable (OM) and Independent Variables (ITR, ICP, CR and QR)**

Table 13

*Regression Model Summary III- Operating Margin & Independent Variables*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.890 <sup>a</sup>	.794	.382	0.48

b. Predictors: (Constant), Inventory Turnover Ratio, Inventory Conversion Period, Liquidity Ratio (Current Ratio and Quick Ratio)

b. Dependent Variable: Operating Margin

*Source: IBM SPSS 26*

Table 13 shows the regression study between the dependent OM and independent variables Inventory Turnover Ratio, Inventory Conversion Period, Current and Quick Ratio. The dependent variable (OM) and the set of independent factors showed a significant positive association, as indicated by the R-value of 0.890. The model R square value of 0.794 indicates that 79% of the variation in the dependent variable could be explained by the independent variables. This demonstrated the high predictive potential of the model. An additional independent variable is suggested as a potential means of providing insight into the causes of the variations in ROE impairment. Inventory management (i.e., inventory turnover ratio, inventory conversion period, quick ratio, and current ratio) can be held responsible for 79% of the variation in dependency. This is less than the standard error, which comes out at 0.48. As a result, it suggests a better fit. All of these results demonstrate how well the regression model works to explain and forecast changes in dependent variables (OM) in relation to independent factors.

**Regression Coefficients of Independent Variables (ITR, ICP, CR & QR) with Return on Assets**

In regression analysis, the regression coefficients represent the estimated effect of each independent variable on the dependent variable (Return on Assets, in this case) while holding other variables constant. Let's denote the independent variables as follows:

- ITR: Inventory Turnover Ratio
- ICP: Inventory Conversion Period
- CR: Current Ratio
- QR: Quick Ratio

Holding all other factors constant, the regression coefficients for each independent variable show how the ROA changes in response to a one-unit change in that independent variable.

Table 14

*Regression Coefficients of Independent Variables with Return on Assets*

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Coefficients		
Constant	12.607	77.459		2.163	.000
ITR	.019	0.055	.473	.233	.008
ICP	-.025	7.159	.025	.041	.065
CR	.046	6.040	.587	.706	.000
QR	.225	.044	1.042	.575	.04

*Source: IBM SPSS 26*

In table 14, the regression coefficient of inventory turnover ratio in the regression coefficient analysis is 0.019 which indicates that if credit increased by one unit, the average influence on Return on Assets (ROA) will increase by 0.019 units. The corresponding p-value is 0.08 which is less than 0.05. Hence there is a significant relationship between ITR and ROA.

The regression coefficient of inventory conversion period (ICP) in the regression coefficient analysis is -0.025 which indicated that if inventory conversion period increases by one unit the average influence on return on assets will decrease by 0.025 units. Corresponding p-value of inventory conversion period is 0.065 which is more than 0.05

level of significance so it indicates that there is no significance impact of inventory conversion period on return on assets.

The regression coefficient of CR in the regression coefficient analysis is 0.046. It suggests that an increase in the Current Ratio variable is associated with an increase in the dependent variable, which indicates that if CR increased by one unit, the average influence on ROA will increase by 0.046 units. The corresponding p-value is 0.00 which is less than 0.05, hence there is significant relationship between CR and Return on Assets.

The regression coefficient of Quick Ratio in the regression coefficient analysis is 0.225. It suggests that an increase in the Current Ratio variable is associated with an increase in the dependent variable, which indicates that if QR increased by one unit, the average influence on ROA will increase by 0.225 units. The corresponding p-value is 0.00 which is less than 0.05, hence there is significant relationship between Quick ratio (QR) and Return on Assets (ROA)

### **Regression Coefficients of Independent Variables (ITR, ICP, CR & QR) with Return on Equity**

Table 15

*Regression Coefficients of Independent Variables with Return on Equity*

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
Constant	.81	.96		.187	.000
ITR	.073	.661	-.0136	.193	.047
ICP	-.021	0.624	.126	.225	.840
CR	.093	18.245	.468	.600	.023
QR	.028	.133	.366	.215	.633

*Source: IBM SPSS 26*

Table 15 shows that the analysis's regression coefficient of ITR is 0.073, meaning that for every unit increase in ITR, the average impact on ROE will also increase by 0.073 units. The relationship between ITR and the dependent variable ROE is statistically

significant at the 0.047 significance level, according to the corresponding p-value of 0.047, which is less than 0.05.

According to the regression coefficient analysis, the inventory conversion period regression coefficient is -0.021, meaning that for every unit increase in the inventory conversion period, the average impact on return on assets will decrease by 0.021 units. The inventory conversion period has no significant impact on return on equity, as indicated by the corresponding p-value of 0.840, which is more than the 0.05 level of significance.

The regression coefficient of CR in the regression coefficient analysis is 0.093. It suggests that an increase in the Current Ratio variable is associated with an increase in the dependent variable, which indicates that if CR increased by one unit, the average influence on ROE will increase by 0.093 units. The corresponding p-value is 0.023 which is less than 0.05, hence there is significant relationship between CR and Return on Equity.

The regression coefficient of Quick Ratio in the analysis is 0.028, indicating that increasing QR by one unit increases the average influence on ROE by 0.0298 units. Given that the corresponding p-value is 0.633, which is more than 0.05, it may be concluded that, at the 0.05 significance level, there may not be a statistically significant association between QR and the dependent variable ROE. It's significant to take into account additional variables that can affect the relationship.

### **Regression Coefficients of Independent Variables (ITR, ICP, CR & QR) with Operating Margin**

Regression analysis uses coefficients to show the degree and direction of relationships between independent variables and operating margin. Examples of these variables are inventory turnover ratio, inventory conversion period, current ratio, and quick ratio.

Table 16

*Regression Coefficients of Independent Variables with Operating Margin*

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
Constant	.91	.86		.172	.000
ITR	.063	.661	-.0136	.193	.041
ICP	-.035	0.524	.126	.225	.730
CR	.082	16.452	.488	.600	.033
QR	.037	.143	.326	.215	.083

Source: IBM SPSS 26

Table 16 shows that the analysis's regression coefficient of ITR is 0.063, meaning that for every unit increase in ITR, the average impact on OM will also increase by 0.063 units. The relationship between ITR and the dependent variable OM is statistically significant at the 0.041 significance level, according to the corresponding p-value of 0.041, which is less than 0.05.

According to the regression coefficient analysis, the inventory conversion period regression coefficient is -0.035, meaning that for every unit increase in the inventory conversion period, the average impact on operating margin will decrease by 0.035 units. The inventory conversion period has no significant impact on operating margin, as indicated by the corresponding p-value of 0.730, which is more than the 0.05 level of significance.

The regression coefficient of CR in the regression coefficient analysis is 0.082. It suggests that an increase in the Current Ratio variable is associated with an increase in the dependent variable, which indicates that if CR increased by one unit, the average influence on OM will increase by 0.082 units. The corresponding p-value is 0.033 which is less than 0.05, hence there is significant relationship between CR and Operating Margin.

The regression coefficient of Quick Ratio in the analysis is 0.037, indicating that increasing QR by one unit increases the average influence on OM by 0.037 units. Given that the corresponding p-value is 0.083, which is more than 0.05, it may be concluded that, at the 0.05 significance level, there may not be a statistically significant association

between QR and the dependent variable OM. When evaluating these relationships, it's important to take industry standards and unique company circumstances into account, too, as different industries and business models can have quite different ideas about what makes a "good" Quick Ratio.

### Summary of Results of Hypothesis Testing

Table 17

#### *Summary of Results of Hypothesis Testing*

Hypotheses	p-value	Remarks
H <sub>0</sub> : There is no significant relationship between inventory turnover ratio, inventory management & organization performance.	0.001	Rejected
H <sub>1</sub> : There is significant relationship between inventory conversion period, inventory management & performance of firm.	0.65	Rejected
H <sub>2</sub> : There is significant relationship between liquidity ratio, inventory management & performance of firm.	0.04	Accepted

## 4.2 Discussion

The report "Inventory Management Practice and Firm Performance" observed the relation between a company's total financial performance and the way it manages its inventory. Three manufacturers are taken as an example. Carrying out a regression analysis with ROA, ROE, and OM as the dependent variable to determine the association between inventory management measures (such ITR and ICP) and financial ratios (like CR and QR). This research provides insight into how well a business maintains its inventory and how that affects profitability. ROA, ROE and OM were the major variables used in the reviewed literature to measure the financial performance. The selected independent variables and its prior relationship with dependent variables were used in the study based on previous research papers findings. In contrast, the following ratios are determined as independent variables: Inventory conversion period, current ratio, quick ratio, and inventory turnover ratio. The study is carried out on selected three Nepalese manufacturing company over the period of 2013/14 to 2022/23.

The average Inventory Turnover Ratio (ITR) proposition of the selected companies UNL, SNL and DNL are 8.38, 2.36 and 4.23 respectively. All companies have different increasing, decreasing and fluctuating trends in their ratio. All three companies have met the inventory management standards whereas UNL has the best ITR and SNL has a low ITR ratio among sample companies. The ROA average of all Companies for 10 years data are -0.19, -0.74 and 0.74 respectively for UNL, SNL and DNL. Similarly, the average figure of ROE for UNL, SNL and DNL are 5.92, 6.31 & 6.43 respectively. Also, OM average of all selected company UNL, SNL and DNL are 0.93, -0.05 and 0.06 respectively. The dependent variables ROA, ROE and OM are positively correlated with the inventory turnover ratio (ITR) with value 0.063, 0.045 & 0.436. Furthermore, the analysis of regression coefficients indicates a significant correlation among ROA, ROE, OM and ITR. Based on the study's results, UNL, SNL, and DNL all meet acceptable inventory management standards. When all other factors are held constant, the positive and statistically significant coefficient for inventory turnover ratio (ITR) indicates that rising ROA, ROE and OM is correlated with rising ITR. Based on these findings;  $H_0$  hypothesis —There is no significant relationship between inventory turnover ratio, inventory management & performance of firms|| is rejected. One of the most important metrics for evaluating how well a company manages its inventory is the inventory turnover ratio. Businesses can increase profitability and liquidity, save expenses, and improve operational efficiency by keeping an ideal turnover ratio.

The average ratio of ICP of UNL, SNL and DNL are 43.58, 33.95 & 261.86 respectively. Among these selected companies it is noticed that DNL has less volatile inventory conversion periods than that of UNL and SNL. There is an inverse or no significant association between the inventory conversion period and the dependent variables (ROA, ROE and OM) having value as -0.193, -0.721 & -0.478. The manufacturing company can increase their profitability by decreasing the ICP. As there is inverse relationship between ICP and inventory management, the  $H_1$  hypothesis which has been set as “There is significant relationship between ICP and inventory management performance of firm” has been rejected. A shorter ICP, which is a sign of effective inventory management, can have a favorable effect on supplier relations. Better forecasting and planning are made possible, which may result in lower costs, better terms on credit, or better supplier performance. Understanding ICP also aids in

scheduling and production planning. An excessively long ICP could be a sign of surplus inventory or production inefficiencies that require attention.

For UNL, SNL, and DNL, the average CR values are 0.86, 0.61, and 2.59 and the average QR values are 0.51, 0.28, and 2.18. The correlation between liquidity position and ROA, ROE, and OM is positive, with values of 0.656, 0.787 and 0.645, 0.219, and 0.162, 0.296. The quick ratio and current ratio are used to measure the liquidity position. Because they offer the liquidity and financial flexibility required to maintain business operations, control cash flow volatility, and seize development opportunities, liquid assets are essential to supporting inventory management. The Quick Ratio and Current Ratio, as independent variables, provide important information about the liquidity and financial health of a company. They aid in determining how efficiently a company manages its assets and liabilities, as well as their impact on broader financial performance indicators.

## **CHAPTER –V**

### **SUMMARY AND CONCLUSION**

The previous section's data analysis was finished in line with the objectives of this study. This chapter presents a summary of the findings, makes interpretations, and wraps up the investigation. Furthermore, it draws conclusions and deductions from the data that allow generalizations to be made. The contribution of the study was discussed in this chapter. A few recommendations have also been made for the study's stakeholders.

#### **5.1 Summary**

The study aims to analyze the position of inventory management of UNL, SNL and DNL. Additionally, other particular goals of the variables maintained by UNL, SNL, and DNL, such as inventory turnover ratio, inventory conversion ratio, current ratio, quick ratio, ROA, ROE, and OM, are to determine the effect of inventory management on the business performance of the chosen manufacturing company. For this research, relevant theses, books, journals, unpublished articles, published articles, linked websites, etc. have all been reviewed. In order to reduce the possibility of repetition, a thorough bibliography was kept up to date and relevant literature, journals, books, articles, past theses, and prior research on the topic were examined.

The research design used in the study is both descriptive and causal comparative. Three manufacturing companies—Unilever Nepal Ltd., Surya Nepal Ltd., and Dabur Nepal Ltd. are selected as a sample of the entire population. This dissertation uses websites, online media, and annual reports from manufacturing companies as a source of secondary data. Additionally, in order to accomplish the goals of the study project, only secondary data has been gathered, examined, and evaluated. The primary source of secondary data was the concerned manufacturing company's annual reports. Periodic data were gathered during the fiscal years 2013–14 and 2022–23. The study comprised data from a variety of sources that are carefully and thoroughly recorded, presented in the right forms as tables, then analyzed and interpreted using the relevant mathematical, statistical, and financial methods. Inventory turnover ratios, current ratios, quick ratios, and inventory conversion periods are depicted as independent research variables. On

the other hand, operating margin, return on equity, and return on assets are illustrations of dependent study variables.

## **5.2 Conclusion**

The study's conclusions are as follows, based on the objective analysis of data and discussion of results:

The current ratio, quick ratio, inventory turnover, and inventory conversion period are all determined to be at an appropriate level. In comparison with the other two organization's (UNL and SNL), DNL has handled its current assets and current liabilities. The UNL and SNL current ratios demonstrated their inability to satisfy their commitment to repay the short-term liability with short-term assets. Comparatively speaking to UNL and SNL, DNL has kept its short-term components. Enough liquidity must be maintained, however having too much liquidity may not always result in increased profitability.

Regarding the Dependent variables (return on assets, return on equity and operating margin) where, independent variable (ITR, ICP, CR and OR), the result from the correlation matrix show that there is positive relation of dependent variables in respect to independent variables inventory turnover, quick and current ratio and it is found there is negative relation of inventory conversion period (independent variables) with the dependent variables return on assets, return on equity and operating margin.

Effective inventory management and improved financial performance are significantly correlated. Companies can improve their financial performance by optimizing their inventory management procedures. ROA, ROE, and OM can all be positively impacted by tactics including cutting down on the inventory conversion duration, increasing inventory turnover ratios, and keeping appropriate liquidity levels. Furthermore, carrying costs can be reduced and processes can be streamlined by utilizing technology and putting in place an effective inventory control system.

This study emphasizes how crucial it is to implement optimization techniques in order to maximize the positive correlation between financial performance and inventory management procedures. Enterprises may generate sustainable development and

capture unrealized value by guaranteeing appropriate liquidity levels, optimizing inventory conversion periods, and improving inventory turnover ratios.

The study's conclusions have a big impact on how managers make decisions. To maintain a balance between inventory levels and financial performance, managers should give top priority to the optimization of inventory management procedures. Businesses can reduce risks, enhance cash flow, and eventually increase profitability by implementing proactive inventory management techniques. To sum up, a company's ability to make money depends heavily on its ability to manage its inventory. Organizations may improve their profitability, attain sustainable growth, and sustain their competitiveness in the current dynamic business landscape by optimizing inventory processes and striking a balance between efficiency and liquidity.

### **5.3 Implications**

By the end of the study, a study without useful suggestions would be an incomplete phenomenal. Thus, in order to maximize their competitiveness through effective management, high-quality products, flexible market demand fulfillment, and improved organizational performance, PE managers are expected to view inventory management procedures as a key enterprise goal. Additional research can be conducted to examine additional elements that could impact an organization's profitability, such as staff performance, holding and carrying costs, policies employed by businesses, etc. To attain maximum profitability, all three of the selected companies: UNL, SNL, and DNL should effectively manage their working capital. These businesses' profitability would be impacted if they didn't keep the maximum amount of current assets to cover their short-term maturities and everyday business processes. It is recommended that organizations in Nepal implement efficient inventory management techniques, such as material requirement planning.

Effective strategic plans and guidelines for inventory and current asset management should be developed by Nepali manufacturing company management. PE management in Nepal should concentrate on expanding their businesses since expanding businesses can boost OM, profitability, and size. It should be mentioned that in order to increase profitability and lower the inventory costs related to keeping surplus goods in the warehouses, businesses' inventory systems need to maintain proper inventory levels.

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## Appendix I

### Total Assets

Year	SNL	UNL	DNL
2013/14	856320708	28541561653	5739430737
2014/15	921556924	2935651032	5252712461
2015/16	959253312	3046441090	5793945016
2016/17	980125287	3321828409	6835354908
2017/18	1017923667	3203041197	6960091971
2018/19	1190744447	3857187905	10516288848
2019/20	1403641355	3723421864	11152228589
2020/21	1995616245	4753226147	10876679267
2021/22	2309654983	5804683495	11235028941
2022/23	3192388522	6495108404	13433505962

## Appendix II

### Sales

Year	SNL	UNL	DNL
2013/14	1530508718	34266622626	4595658141
2014/15	1523646000	3781234987	5281658141
2015/16	1654977243	3946575648	6398229089
2016/17	1347871152	4442374517	7696782805
2017/18	1373294000	4868313101	9083454385
2018/19	2452452726	5754061451	9506740405
2019/20	3179540869	5547221625	6865166384
2020/21	2404628250	5730723792	8261507604
2021/22	3699668410	7333614727	12494945922
2022/23	4059119963	8480357126	12619245618

### Appendix III

#### Fixed Assets

Year	SNL	UNL	DNL
2013/14	531645399	368182222	3563910179
2014/15	559084776	391426127	3627104915
2015/16	602745462	489845292	3723755128
2016/17	629564824	581813667	3945801849
2017/18	657338300	656554281	6321102516
2018/19	645519569	985825433	7574155058
2019/20	643629352	1209723889	7663507959
2020/21	598438122	1080380306	7215128703
2021/22	606738510	1614605602	7007391670
2022/23	631120858	1697472987	6945121639

### Appendix IV

#### Account Payable

Year	SNL	UNL	DNL
2013/14	17753640	483100000	224354812
2014/15	144443669	502900000	138010223
2015/16	134918801	297066288	125043153
2016/17	53786409	680278067	141516551
2017/18	127346757	605258341	318395799
2018/19	403175744	1163265370	194405540
2019/20	911576994	846751848	221507342
2020/21	517130075	982151912	496232874
2021/22	1150583354	1358646159	583098211
2022/23	1962176573	1663743317	779497088

## Appendix V

### Account Receivable

Year	SNL	UNL	DNL
2013/14	7169831	401000000	1005089423
2014/15	230517057	553600000	1486170768
2015/16	121362499	902020708	1721951651
2016/17	139456389	1019448347	2249426036
2017/18	43147483	976914723	645401102
2018/19	63065724	1364297764	1980868172
2019/20	113601123	1588638265	1184806157
2020/21	43167987	1891681597	688496990
2021/22	78285481	1809768433	1144431039
2022/23	115303794	1809482624	1025403486

## Appendix VI

### Cost of Goods Sold

Year	SNL	UNL	DNL
2013/14	60716414	1456238194	3749858176
2014/15	968739260	1755361668	4467712157
2015/16	857354441	1979411692	4865368161
2016/17	1200989061	2391981811	5296092044
2017/18	1365441473	2558943560	5922771578
2018/19	1555816139	3175014884	6497475845
2019/20	1169574868	3000617161	5094806091
2020/21	1474723249	3147372749	5934889789
2021/22	1572365334	4154843871	9064202503
2022/23	1201150397	42782917764	9125619722

## Appendix VII

### Inventory

Year	SNL	UNL	DNL
2013/14	22387272	393700000	1098841012
2014/15	203852923	416800000	1496878060
2015/16	177885174	674690691	1598616515
2016/17	277692556	620025639	1516851758
2017/18	383999572	751736499	1636745333
2018/19	301632908	742865664	1379124602
2019/20	426104882	626120697	1572951713
2020/21	164953755	842542953	1585860277
2021/22	207327472	1123329423	2014699607
2022/23	447224251	963303341	2459100160

## Appendix VIII

### ROA

Year	SNL	UNL	DNL
2013/14	1.23	0.319354013	2.257442557
2014/15	1.34	3.049140488	1.484489387
2015/16	1.27	3.168386578	7.487741682
2016/17	1.18	2.866392835	10.28272772
2017/18	1.24	3.120089573	14.94727428
2018/19	1.38	2.762095916	7.028874669
2019/20	1.23	0.961495273	-0.554640191
2020/21	1.45	1.811143128	4.403259407
2021/22	1.33	2.65644207	7.325252906
2022/23	1.18	2.824158072	7.281121099

## Appendix IX

### ROE

Year	SNL	UNL	DNL
2013/14	1.45	27.4829299	9.359120019
2014/15	1.69	27.51831616	5.632616901
2015/16	1.63	29.05719944	24.33983542
2016/17	1.46	29.72695187	29.37041624
2017/18	1.58	31.60179079	30.26887565
2018/19	1.77	27.62095916	18.36896985
2019/20	1.52	9.614952726	-1.594398076
2020/21	1.71	18.11144271	11.04007588
2021/22	1.5	26.56442087	15.86977697
2022/23	1.27	28.24158072	15.81056347

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ix Abstract The purpose of this study, "Inventory management performance," aims to fill the educational gap about manufacturing enterprises' inventory management in Nepal. Because there aren't many inventory management research publications in the Nepalese context, this study serves as a basis for further investigation. The secondary data used in the data analysis were taken from the annual reports of three manufacturing companies covering the ten-year period from 2013/14 to 2022/23. The study's primary goal is to analyses Nepalese inventory management practices and firm performance. The purpose of this study's data presentation and analysis is to assess the inventory management situation as it relates to the financial reports covering the fiscal years 2013 through 2023. Analysis of inventory management in relation to the organization's ROA, ROE, and OM position has been undertaken. This study looks at the effects of several inventory metrics, such as the inventory turnover ratio, inventory conversion period, current ratio, and quick ratio, on a manufacturing company in Nepal. The metrics return on equity, return on assets, and operating margin are used to