

## A STUDY ON ESSENTIALS OF INVENTORY MANAGEMENT

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### ABSTRACT

The project work entitled Inventory Management includes detail study about inventory, its importance and effectively it should be managed for smooth operations of business. Inventories are assets of the firm and require investment and hence involve the commitment of firm's resources.

Every firm is required to manage the inventories in such a way as to get the best returns. The objective of inventory management is to determine the optimum level of the inventory that is the level at which the interest of all the departments are taken care of.

The inventory management seeks to maximize the wealth of the share holders by minimizing the cost of procuring and maintaining.

The objective behind the inventory management is maintaining sufficient stock of raw materials ensuring continuous supply to production process for uninterrupted production schedule and minimizing the total annual cost of maintaining inventories.

Inventories are assets of the firm and hence involve the commitment of firm's resources; managers must ensure that the firm maintains inventories at the correct level.

### I. INTRODUCTION

#### INVENTORY MANAGEMENT

Inventory can be referred to as sum of the value of raw materials fuels and lubricants, spare parts, maintenance consumables, semi processed materials and finished goods, stock at any given point of time.

In large companies inventory place a most significant part of the current assets. The business has about 15 to 30% of inventories in total assets.

Inventory is composed of assets that will be sold in future in the normal course of business operations. The assets which firms stores as inventory is anticipation of need are raw materials, work in progress and finished goods.

#### MEANING OF INVENTORY MANAGEMENT:

Inventory management consists of maintaining for a given financial investment an adequate of something in order to meet and accepted pattern of demand. Inventory considers control over costs of inventory on one hand an handle the size of inventory on other hand.

Controlling investments in inventories constitute crucial part in current assets.

An efficient inventory controlling system will decide,

What to purchase

When to purchase

How to purchase

Size of purchase

And from where to purchase (Suppliers)

The main purpose of inventory management is to ensure

- ❖ Required quantity of availability of raw materials
- ❖ Minimize the investments in inventories
- ❖ Maintain reasonable stock levels not excess or not under stocks

### **INVENTORY CONTROL:**

Inventory control is the system devised and adopted for controlling investments in inventory. It involves inventory planning and decision making with regard to the quantity and time of purchase, fixation of stock levels, maintenance of stock records and continuous stock – taking.

Stock, stock, beautiful stock

Piles on the fixtures and more in the dock

Some of it ancient and some of it new

Alas, and tomorrow another lot's due.

The couplet beautifully sums up the predicament of all those who are connected with the stock (inventory). What is this inventory? What are its functions? What can be done to minimize this inventory? These and other relevant issues have been discussed in this chapter.

Every enterprise needs inventory for smooth running of its activities. It serves as a link between production and distribution process. There is, generally, a time lag between the recognition of a need and its fulfillment. The greater the time lag, the higher requirements for inventory. It also provides a cushion for future price fluctuations.

In a complex industry like **Coca Cola**, it studied clearly of how the things are being performed and what is the real impact of these on industry and how effectively the inventory is utilized is interested to be known by researcher because of its great significance in the research.

### **NATURE OF INVENTORY**

Inventory can be referred to as sum of the value of raw materials, fuels and lubricants, spare parts, maintenance consumables, semi processed materials and finished goods, stock at any given point of time.

In large companies inventory place a most significant part of the current assets. The business has about 15 to 30% of inventories in total assets.

Inventory is composed of assets that will be sold in future in the normal course of business operations.

### **OBJECTIVE**

Inventory control includes not only of the physical stocks but also of the funds invested on it.

That twin objectives of inventory control are,

- To maintain a balanced inventory.
- To keep the amount invested in inventory as low as possible without hampering either flow of the production or deliveries of finished goods.
- To avoid both under stocking and over stocking of inventory.
- To eliminate duplication in ordering or replenishing stocks. This is possible with the help of centralized purchasing.
- To ensure continuous supply of materials, spares and finished goods so that production should not suffer and any time and customers demand should also be met.
- To design proper structure for inventory management. A clear cut accountability should be fixed at various levels of the organizations.
- To ensure right quality goods at reasonable prices. Suitable quality standards will ensure proper quality of stocks. The price analysis, the cost analysis will ensure paying of proper prices.
- To facilitate furnishing of data for short term and long term planning and control of inventory.

### **IMPORTANCE OF THE STUDY**

- There is increased in the salaries in all most in every market leading to competition in aspects of price, promotion etc., which help to increase the standard of living of people.
- The manufacturers of Coca cola providing drinks and they are distributing various products through wide network of dealers.

- Coca cola are doing its business from decades and it is continuously contributing to the national economy.
- In even Industry now a days there is no special interest for particularly department like production or manufacturing but know a day's total quality management plays a vital for the company's success.
- Distribution channel which plays a vital role for the company success. Distribution channels are link between the company and consumers.

#### **NEED OF THE STUDY**

- Every industry on average spends 70% on raw materials. Therefore there is need to know the raw material cost and also there is a great importance to understand the inventory management system of this industry.
- The study helps various departments to take steps to control the inventory process.
- Materials are equivalent to cash and they make up an important part of the total cost. It is essential that materials should be properly safeguarded and correctly accounted.
- Proper control of material can make a substantial contribution to the efficiency of a business.
- The success of a business concern largely depends upon efficient purchasing, storage, consumption and accounting.

#### **SCOPE OF THE STUDY**

- The scope of study is limited to collecting the financial data published in the annual reports of the company with reference to the objectives stated above.
- An analysis of the data with a view to suggest favorable solutions to the various problems related to Inventory Control Management.
- This particular topic is selected to the Inventory Control Management is recent years. The study is conducted to evaluate the performance of the company with reference to inventory control management.
- The project is aimed at studying by means of developing effective 'Inventory Control Management.
- The study is conducted for a period of 6years i.e., 2020-21 to 2024-25.

#### **OBJECTIVES OF THE STUDY**

The main objective of the project work is to study and analyze and preparation Inventory Management in Coca cola.

#### **Secondary objectives are:**

- To understand the concept of inventory management
- To understand the purchasing procedure of the inventories
- To understand the procedure of classification of inventories.
- To understand the procedure of codification of inventories

## **II. RESEARCH METHODOLOGY**

For, the purpose of the study, the data collected from primary and Secondary has sanitized edited and presented in the form of tables and statements. The analysis of the data has been made with the help of certain mathematical techniques like percentages etc. Where ever feasible and appropriate graphs and diagrams are used.

#### **Types of data:**

1. Primary data
2. Secondary data

#### **Primary Data:**

The source of data which is not readily available but collected through questionnaire and personal interviews.



### **Secondary Data:**

The source of data which is readily available and collected through reports, journals books and periodicals and websites.

### **Source of data:**

The primary source for the project is secondary data which is collected from reports of the company, magazines, & websites.

### **Tools Applied:**

For analysis purpose following techniques are applied

1. Inventory levels
2. Ratio Analysis
3. EOQ Methods

### **LIMITATIONS OF THE STUDY**

- The study period is limited to 45 days.
- The study is limited unto the date and information provided by COCA COLA Industries Ltd and its annual reports
- The report will not provide exact Budgetary System status and position in Coca cola; it may vary from time to time and situation to situation.
- This report is not helpful in investing in COCA COLA either through disinvestments or capital market
- The accounting procedure and other accounting principles are limited by the company changes in them may vary the actual and budget performance.

### **III. REVIEW OF LITERATURE**

#### **TITLE: LINKING INDUSTRIAL AGGLOMERATION AND MANUFACTURERS INVENTORY PERFORMANCE: THE MODERATING ROLE OF FIRM SIZE AND ENTERPRISE STATUS IN THE SUPPLY CHAIN**

**AUTHOR: Xinyu Wang, Yu Lin, Yingjie Shi**

#### **Abstract**

From the intra- and inter-regional dimensions, this paper investigates the linkage between industrial agglomeration and inventory performance, and further demonstrates the moderating role of firm size and enterprise status in the supply chain on this linkage.

Using a large panel dataset of Chinese manufacturers in the Yangtze River Delta for the period from 2008 to 2013, this study employs the method of spatial econometric analysis via a spatial Durbin model (SDM) to examine the effects of industrial agglomeration on inventory performance. Meanwhile, the moderation model is applied to examine the moderating role of two firm-level heterogeneity factors.

#### **TITLE: INVENTORY MANAGEMENT, MANAGERIAL COMPETENCE AND FINANCIAL PERFORMANCE OF SMALL BUSINESSES**

**AUTHOR: Laura A. Orobia, Joweria Nakibuuka, Juma Bananuka, Richard Akisimire**

#### **Abstract**

The purpose of this study is twofold (1) to establish the relationship between inventory management, managerial competence and financial performance and (2) to test whether inventory management mediates the relationship between managerial competence and financial performance.

We employed cross-sectional and correlational research designs. A questionnaire survey of 304 small businesses in Uganda was utilized. Hypotheses were tested using a bootstrap analysis technique with the aid of Analysis of Moments Structures (AMOS) software.



**TITLE: IMPLEMENTING AN EFFECTIVE INVENTORY MANAGEMENT SYSTEM**

**AUTHOR: Thomas C. Harrington, Douglas M. Lambert, Monica P. Vance**

**Abstract**

Inventory control problems often result in record and physical count discrepancies which may ultimately lead to higher than preferred inventory levels. Conversely, accurate inventory records result in lower inventory investment and are the foundation for forecasting, ordering, tracking, vendor evaluation, and dead stock administration programmes. Guidelines, based on general systems theory, to identify the presence of inventory control problems in both physical operations and information systems areas are presented. Next, procedures to correct control problems are discussed. These include the formation of a permanent taskforce, corporate-wide education on the importance of record accuracy, and the development of a general management plan based on sound principles for effective inventory control. Recent experiences within a telecommunications company having inventory control problems are used as a case example to illustrate specific points.

**TITLE: A BIBLIOMETRIC ANALYSIS OF INVENTORY MANAGEMENT RESEARCH BASED ON KNOWLEDGE MAPPING**

**AUTHOR: Yong Ye, Yuanqin Ge**

**Abstract**

The research mainly aims at the hotspot of inventory management by knowledge mapping and provides a visualization reference in this research field.

First, inventory management journals during 1986 to 2017 were selected as the research object and text formatting in the Web of Science (WOS) database is exported. Then inventory management knowledge mapping is done and clustering keywords are extracted by using CiteSpace and VOSviewer software. Based on co-word analysis, the three special clusters are exported: inventory optimization strategy, inventory pricing and inventory technology. Besides, the clustering structure and time evolution are analysed. Finally, bibliographic item co-occurrence matrix builder (BICOMB) was used to extract the “journal” and “researchers” keywords in the inventory management research fields. Setting three parameters such as the cited half-life, centrality, frequency and keywords for data mining, it can infer the trend keywords of future research.

**TITLE: NETWORKED INVENTORY MANAGEMENT INFORMATION SYSTEMS: MATERIALIZING SUPPLY CHAIN MANAGEMENT**

**AUTHOR: Martin Verwijmeren, Piet van der Vlist, Karel van Donselaar**

**Abstract**

Aims to explain the driving forces for networked inventory management. Discusses major developments with respect to customer requirements, networked organizations and networked inventory management. Presents high level specifications of networked inventory management information systems (NIMISs). Reviews some decision systems for inventory management, and compares traditional inventory management to networked inventory management. Uses these insights to outline NIMISs for several types of inventory management decision systems. Summarizes the results of the study, and provides an outlook on further research.

**IV.DATA ANALYSIS AND INTERPRETATION**  
**DETERMINATION OF STOCK LEVELS**

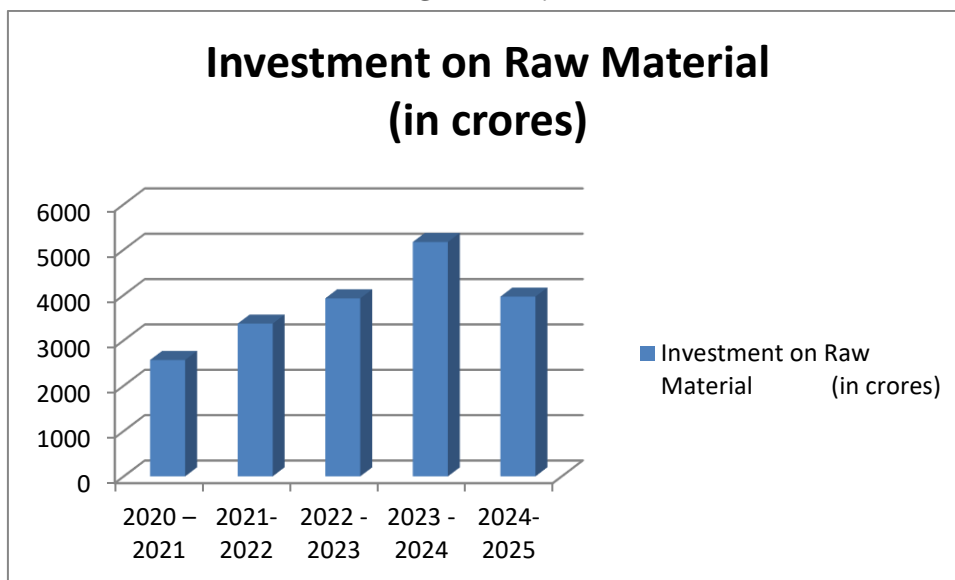
The investment on raw materials over a period of 5 years from 2020 to 2025 is presented in the following table.

**1. Investment on Raw Materials**

**TABLE 4.1**

Year	Investment on Raw Material (in crores)
2020 – 2021	2566.82
2021- 2022	3368.75
2022 - 2023	3925.71
2023 - 2024	5168.75
2024- 2025	3964.26

**GRAPH 4.1**



**Interpretation**

- From the above table it can be understood that the inventory of was recorded at 3964.26 during the year 2024 – 25 and it is increased to 5168.75 during the year 2023 – 24.
- It shows that there is on decrease in the inventory to the more extent of 3964.26.
- The average inventory of COCA COLA was recorded at Rs.3925.71.

**2. Trend Analysis**

Trend analysis technique is applied to know the growth rate in investment of raw material of COCA COLA over the review period which is shown in the following table.

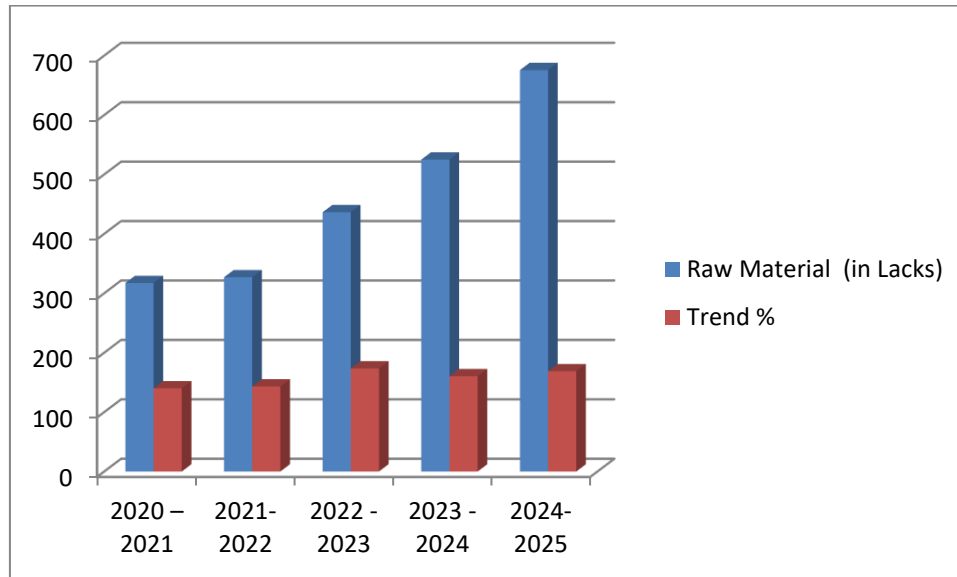
**Trend Analysis**

**TABLE 4.2**

Year	Raw Material (in Lacks)	Trend %
2020 – 2021	317.14	140

2021- 2022	326.83	143.0684
2022 - 2023	436.40	173.5251
2023 - 2024	524.93	160.2864
2024- 2025	675.57	168.6972

**GRAPH 4.2**



**Interpretation**

The investment on inventory has increased in the year 2024 – 25. And the last year investment has declared continuously. The trends in inventories show that inventory have been more in the year 2021–22 and then it has shown a downward trend and again it increased to some extent. The investment in inventories has shown fluctuating trend is initial years and then it rose to 173.52 % and again showing fluctuating trend.

**3. Inventory Turnover Ratio**

This ratio indicates the number of times the stock has been turned over during the period & evaluates the efficiency with which a firm is able to manage its inventory.

**Cost of goods sold**

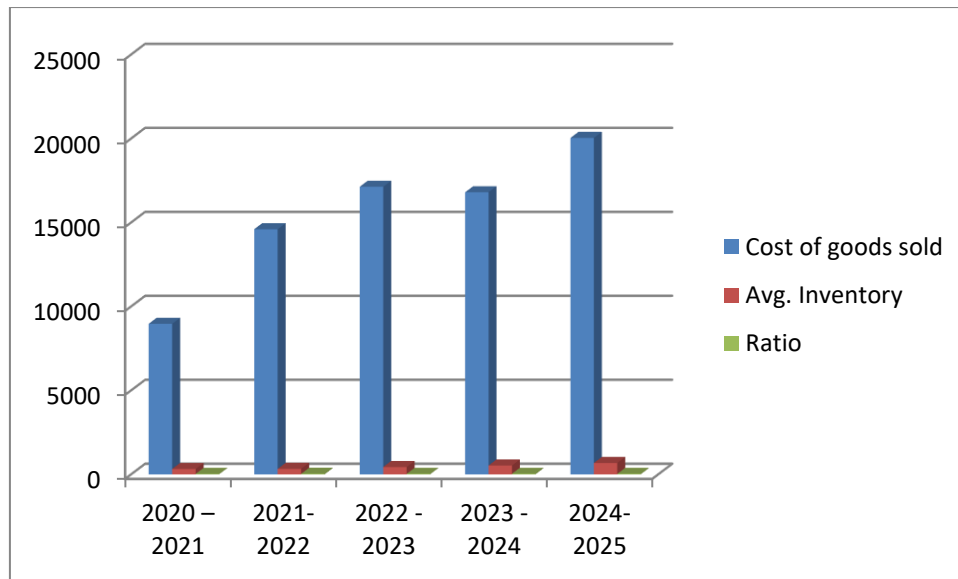
$$\text{Inventor turn over ration} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

**Inventory turnover ratio:**

**TABLE 4.3**

Year	Cost of goods sold	Avg. Inventory	Ratio
2020 – 2021	8963.14	317.14	28.2658467
2021- 2022	14594.45	326.83	32.4157819
2022 - 2023	17124.39	436.40	29.9825619
2023 - 2024	16796.90	524.93	31.9983617
2024- 2025	20032.81	675.57	29.6531966

**GRAPH 4.3**



**Interpretation**

From the above table it can be observed that inventory turnover ratio is 28.26 in the year 2020-21 and it gradually increased to 29.65 during 2024 – 2025. In the year 2020 – 21 it is clear that the ratio is very less i.e., his stock is not turned into sales quickly.

As compared to all the years the ratio is very less. The average inventory turnover ratio was recorded at 8.5 times during the review period.

**4. Inventory conversion period**

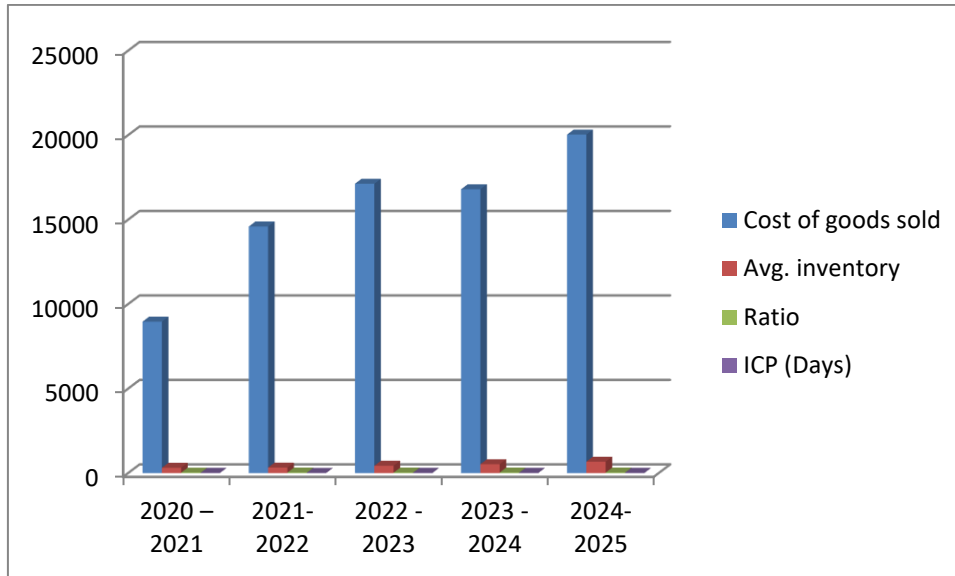
It may also be of interest to see average time taken for clearing the stocks. This can be possible by calculating inventory conversion period. This period is calculated by dividing the number of the days by inventory turns over.

**Inventory conversion period: (in crores)**

**TABLE 4.4**

Year	Cost of goods sold	Avg. inventory	Ratio	ICP (Days)
2020 – 2021	8963.14	317.14	28.2658467	16.7362185
2021- 2022	14594.45	326.83	32.4157819	15.1457016
2022 - 2023	17124.39	436.40	29.9825619	16.0069793
2023 - 2024	16796.90	524.93	31.9983617	15.250576
2024- 2025	20032.81	675.57	29.6531966	16.1403437

**GRAPH 4.4**



**Interpretation**

The inventory conversion period was 232 days during the year, which indicates that the stock has been very quickly converted into sales which mean the company is managing the inventory efficiently.

**5. Percentage of Inventory over current assets:**

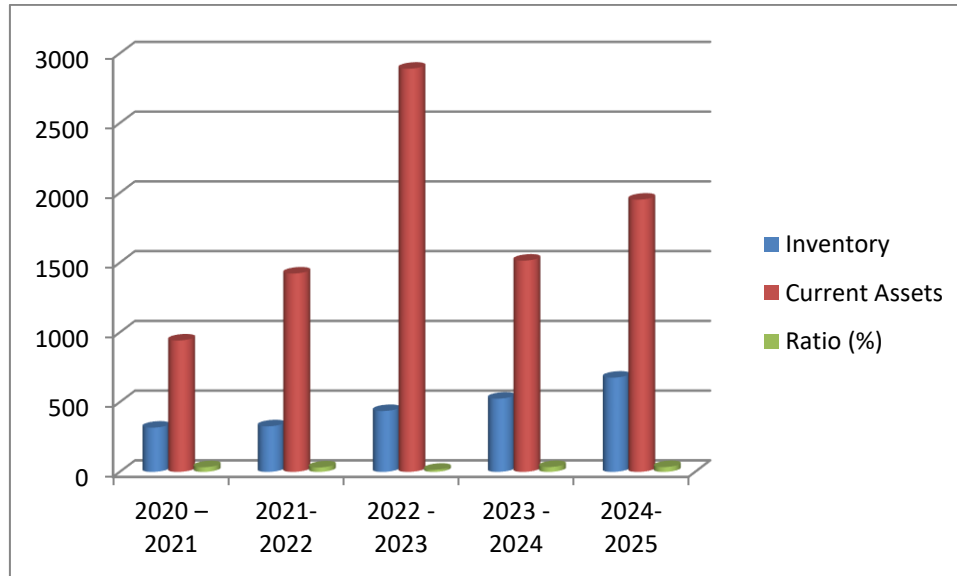
$$\text{Inventory over current assets ratio} = \frac{\text{Inventory}}{\text{Current assets}} \times 140$$

**Percentage of Inventory Over current assets:**

**TABLE 4.5**

Year	Inventory	Current Assets	Ratio (%)
2020 – 2021	317.14	942.00	33.6624204
2021- 2022	326.83	1422.14	31.9750719
2022 - 2023	436.40	2890.46	15.1379429
2023 - 2024	524.93	1514.52	34.7516127
2024- 2025	675.57	1951.69	34.6146161

**GRAPH 4.5**



### Interpretation

- From the above table it can be understood that the % of inventory over current assets ratio was showing an inclining trend for two years 2020 – 2025.
- However from the year 2023 – 24 it is showing an increasing trend.
- The lowest inventory over current assets ratio was recorded at 15% during the year 2022– 23 and the highest inventory over current assets ratio we recorded at 34.75 % during 2023-2024.
- The average inventory over current assets ratio was recorded at 33 %.

### V. FINDINGS

- The production during 2020-2021 was 14345.01 and 16048.30 respectively which is higher as compared to 2024-25 which is 23586.80 and 25252.98.
- Investment on raw material in 2019-2020 is 5168.75 Cr which is very high as compared to 2024-25 which is only 3964.26 Cr.
- The inventory turnover ratio shows that the stock has been converted into sales is only 1.02 times.
- In the year 2021-22 the stock was cleared within 15.02 days whereas it took 16.73 days in the year 2020-2021 which took more days for clearing stock.
- Year 2021-22 is not showing sample profits. This is because of Iron prices have been continuously under pressure due to persistent mismatch between supply and demand.
- In purchase department for want of any item it should go through several processes. This may include receiving indents, floating enquiries, preparation of order processing form, preparation of purchase order and order follow up inform the supplier. Most of the time was spent in accounts payable.

### VI. SUGGESTIONS

- Though the production is higher in the year 2020-2021 and the sales were very high i.e., as per inventory conversion period it took 15.02 days.
- The investment on raw material should be made as per the requirement. Unnecessary investment may block up the funds.
- Neither too high nor too low inventory turnover ratios may reduce profit and liquidity position of the industry. So, proper balance should be made to increase profits and to ensure liquidity.
- The raw material should be acquired from the right source at right quality and at right cost.



- The process that was being used by Coca Cola with the purchasing department should undergo changes, so that, it seeks enhance the celerity of the delivery of a product without compromising its quality by improving the utilization of materials, labour and equipment.
  - To reduce the work, the purchasing department may enter the purchasing order into database and did not send a copy to anyone. When the merchandise arrived, the receiving clerk would enter the database and determine whether the order agreed with the electronic purchase order.
- If it did, payment was authorized to be made at the appropriate Time. If it didn't match, the order would be returned until if it is agreed by the Coca cola.

## **VII. CONCLUSION**

In the present days scenario inventory management is playing a crucial part in the organization. The system of inventory management in Coca Cola very effective. The organization is basically and assembling unit and thus inventory place a most significant role in the decision making process. From the various calculations and figures relating to inventory management it is clear that the inventory classification of A items are maintain for days, as a result it reduce investment in raw material, reducing the lead time and also the large quantity discount because the stock are kept for days.

In the classification of ABC items procedure is following in Coca Cola has launched the different type of card system for class C items.

Class A & B items are consider under the just in time philosophy as the procurement time has been reduced up to greater extent by the proper co-ordination of buyer and supplier.

There is great improvement in the inventory turnover ratio from 3 years. It is increased from 5.38 to 7.296% this position indicates that the stocks are fast moving and get converted into sales quickly in Coca Cola. Finally we conclude that Coca Cola the inventory system is very good with high techniques.

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### **WEB SITES:**

- [www.cocacola.com](http://www.cocacola.com)
- [www.scribd.com](http://www.scribd.com)