FINAL PROJECT

"Inventory Management Tools/Techniques And Their Implication On The Operations Performance Of Textile Industry''

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In partial fulfilment for the award of the degree of

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Submitted by

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CERTIFICATE

This is to certify that **"Gunjan Tapase"** has submitted the project report titled **"Inventory Management Tools/Techniques And Their Implication On The Operations Performance Of Textile Industry'',** towards partial fulfillment of **MASTER OF BUSINESS ADMINISTRATION** degree examination. This has not been submitted for any other examination and does not form part of any other course undergone by the candidate.

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Place: - Nagpur

Date: - …/…/2021

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I would like to thank all those who helped me in making this project complete and successful.

Gunjan Tapase

Place: Nagpur

Date: …/…/2022

DECLARATION

I here-by declare that the project with title "**Inventory Management Tools/Techniques And Their Implication On The Operations Performance Of Textile Industry**" has been completed by me in partial fulfillment of MASTER OF BUSINESS ADMINISTRATION degree examination as prescribed by DMSR - G.

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Gunjan Tapase

Place: Nagpur

Date: …/…/2022

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CHAPTER-1

INTRODUCTION

INTRODUCTION

The very old concept of supply chain management is concerned with the utilization and optimization of the resources within a firm. With the development of supply chain management, many approaches have been come during the last decade. Inventory management is an important factor in supply chain management. it includes a balance between customer services, or product availability, and the cost of inventory. the concept that high storage is useless, widely accepted and firms now concentrate on improving inventory efficiency.

The term inventory refers to the raw materials used in production as well as the goods produced that are available for sale. A company's inventory represents one of the most important assets it has because the turnover of inventory represents one of the primary sources of revenue generation and subsequent earnings for the company's shareholders. There are three types of inventories, including raw materials, work-in-progress, and finished goods. It is categorized as a current asset on a company's balance sheet.

Inventory is a very important asset for any company. It is defined as the array of goods used in production or finished goods held by a company during its normal course of business. There are three general categories of inventory, including raw materials (any supplies that are used to produce finished goods), work-in-progress (WIP), and finished goods or those that are ready for sale.

Inventory management will take care of not just controlling the amount of stock that you have but the time necessary for replenishment of stock, assets management, carrying costs of inventory, forecasting, visibility, physical scope for inventory, the return of faulty goods valuation, and future price forecasting.

When you take care to protect that all these details are taken care of, your inventory will always be balanced and you will never run out of stock. inventory turnover is considered one pf the most important outlook of business as it is responsible for generation cash, and thus profits.

A business inventory is nothing but the raw materials, parts and finished goods kept on site or in its warehouse. Inventory can also be kept in consignment, which is when a third -party holds inventory is described as an asset on a business unit the goods have been sold. inventory is described as an asset on a business balanced sheet., and it is a buffer between the manufacturing and order fulfilment stages. Once inventory has been disposed, or used in the manufacturing process, the cost of carrying it flows into the cost of the goods in then accounting statement.

There are three different types of inventories that can be followed;

(1) Raw material

(2) Work -in- progress

(3) Finished goods

(4) MRO goods

(5) Safety stock

- **Raw material** is the starting material that fuel the manufacturing process. Raw material is things as the metal used by the steel or auto companies, or the food and spices used by food processors, cotton used by textile companies.
- **Work – in-progress** is anything that has been relatively processed, but is not yet a finished good. This would involve an automobile that has not been completely assembled or raw dough in bread or cake making factory, among other things.

- **Finished goods** have off through all manufacturing steps and are ready to be sold to wholesalers, distributors, or consumers. for ex: finished auto mobiles, computers or television and the loaf of bread you buy at the local grocery shop.
- **Maintenance, repair and operation**. this is a part-way through the use to support the manufacturing process.
- **Safety stock** is the additional inventory you keep in store to deal with supplier shortages or surges in demand.

Business perceives that holding a large amount of inventory for a long period of time is not good business practices. It can guide to spoilage or obsolescence's and can be quite costly. Of course, it is not good grip too little inventory either, since the business could miss out on some potential market share and sales. Keeping a balance is the key and has open on the role of inventory management within the manufacturing industry, with the just-in-time (JIT) inventory system being one preferred way of managing inventory level.

Inventory management related to the comparison between replenishment time, carrying cost of inventory, asset management, inventory forecasting, valuation, visibility, future inventory prices forecasting, physical storage, available physical space, quality management, restoring, returns and defective goods, and demand forecasting. Comparing these competing necessity leads to optimal inventory levels, which is ongoing process as the business needs shift and react to the wider environment.

Inventory management contain a retailer looking in to acquire and keep a proper merchandise selection while ordering, shipping, handling, and related costs are kept in check. These include the monitoring of material moved into and out of stockroom locations and the reconciling of the inventory balances.

It also may involve ABC analysis, lot tracking, cycle counting support, etc. managing the inventories distribution system, functions to balance the necessity for product availability against the demand for minimizing the stock holding and handling costs.

PUROPSE OF INVENTORIES:

If supply was able to meet the demand, there would be very little need for inventory. goods can be made as demand on the same rate the list is not required. But unfortunately, this does not happen often in the real world of manufacturing

All the firms maintain supply of inventory for the following reasons:

(1) To maintain the supply of material in a workstation comes in flexibility in the operation of the centre. for example, because there is a cost of setting up each new product it allows list management to reduce the number of setups. The freedom of workstation is desirable even on assembly line. Will the time be taken to operate the same would be naturally different from one unit to another? there for Apollo of many parts with in the workstation is desirable so that the low performance time can compensate for longer performance time. This way the average output can be quite stable.

(2) To meet the difference in product demand. If the demand for the product is properly known, then it can be possible (although not necessarily economically) to meet the demand. of the product. Generally, however the demand is not fully known as satisfy or buffer stock should be maintained to absorb the diversity.

(3) To allow flexibility in the product schedule. A stock of good relieves the pressure on the production system to take out the goods. This causes a longer lead, which always production planning for smooth follow and low-cost operation through low-cost production. for example, high set up cost, once set in favour of creating large number of units.

(4) Providing protection for variation in raw material delivery time. When order are made for the content vendor their maybe a delayed due to several reasons, normal variation in the shipping time, the lack of material in the vendors plant causes the backlog, on satisfied strikes in the vendors plant and one of the shipping companies, a loss of shipments or incorrect or defective material.

(5) To require advantage of economic order size. There is an order, labour, phone call typing, postage, and so on. Therefore, the larger the order, the lesser order is needed. In addition, the shipping cost is favourable to the large order the larger the shipment the lower the cost for unit.

FUNCTIONS OF INVENTORIES IN MANUFACTURING PROCESS:

In batch manufacturing or very much, the main purpose of the good is to reduce the supply and demand. Thus, the purpose of inventory is to work as the buffer:

- Between customer's demand and finish good.
- Between the availability of finish goods and components.
- Between the requirements for an operation or output for the preceding operation.
- Between parts and material to start production and supply of material.

Based on the above, Arnold (1991: 144) works according to the classified task list as follows:

(1) Expectancy inventory:

These inventories have been created before a peak season, a promotion program, a holiday closure, or possibly a strike thread. They are designed to help in production of the level and reduce the cost of changing the production rate.

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(2) Fluctuation list:

The list is organised to cover a random unexpected fluctuation in the supply and demand or lead time. If forecasts have higher demand or lead time, the stock out will be done. Safety stock is done to avoid the possibility of stock out. Its purpose is to prevent interruption in manufacturing or distribution of customer.

(3) Lot size inventory:

Items purchased or manufactured in excess quantities make inventory of very large size. To reduce the cost of shipping clerical and set up cost, item will be ordered in in items or batches to get a discount, and in case where there are used or sold, it is impossible to make or buy item at the same rate.

(4) Transport inventory:

Inventory are due to the time required to move stock from one place to another, such as from the plant to the distribution centre or the customers. They are sometimes known as plumbing or movement list.

BUSINESS INVENTORY:

Reason for keeping stock:

This square measure 5 basic reason for keeping a list:

- **Time**: the time present in the supply chain is available for the suppliers to the user in each stage, it is necessary that you maintain something when the in order to use this lead time. However, in practice, inventory has to be maintained for consumption during the "lead time change". Lead time can already be addressed by ordering for several days.
- **Seasonal demand**: Demand keeps changing from time to time but the manufacturer's capacity is fixed. This can accumulate stock; for example, consider how the consumption of good in the holiday can accumulate Raj stock in anticipation for future consumption.
- **Uncertainty:** Inventories maintain in buffet for being meet the uncertainties in demand, supply and movement of goods.
- **Economics of scale:** "Ideal condition for 1 unit at one place where a user need it, when it need it in case of principle logistic many cost have to be raised. So, the bulk bring in buying movement and storage economics does inventory.
- **Praise in value**: In some situations, am stocks receive necessary value when it is kept for consumption for some time to read you do desire standard also production, for example employees' beer in the wine making industry.

TYPES OF INVENTORY SYSTEM:

While many different types of inventory systems are available, they can be classified into two main types:

- Continuous inventory systems
- Periodic inventory systems

As their name show, the main differences between the two types of inventory systems is how many times inventory is tracked.

Continuous inventory systems constantly update the records. They often track when the material is received, sold or taken from place to place. The main advantages of using are that provide up-to-date records that always reflect the level of the stock. However, these types of systems require specialized equipment and software, which come with high cost of implementation. If there are many places or warehouse in your email business, then keep thus in mind because the number of places also increases the cost.

Periodic inventory systems depend on physical calculation of the goods at the start and end of the time period. as a result, mistakes can be made by employees, because the count is done manually. In addition, regular business activities usually have to be stopped during counting, resulting in loss of revenue to the company. For inventory count, businesses need to spend additional costs in labour costs, which is why this kind of system id better, suited for small businesses with limited inventory.

FRAMEWORK FOR INVENTORY MODEL:

The general structure if the inventory model consists of five components-----

1 Demand

2 Order quantity

3 Lead time

4 Safety stocks

5 The cost of inventory possession

a) Demand

Demand inventory is an essential component of management. inventory decisions are always made in terms of future demand. Decisions are made when the manger is certain about the needs in his department and again when the certainty is not ensured. The latter situation tells nothing about the possibility of future levels.

b) Order Quantity

After determining the quantity to purchase, the buyer should decide how much to buy. Most physical requirements continue to meet the requirements, cumulative or total requirements. Such a system of necessity is a better guide than day-to-day requirements. In the purchase ceremony, the word quality has a special meaning is required, in same way a most economical ordering quantity is also required, in this regard, to establish an economic order quantity, two extreme ideas to be faced.

They are-

- To produce a very high quantity of production-oriented solution i.e., to reduce setup and procurement cost.

- Treasurer, controller or accountant-oriented solutions which beloves in very little production to reduce investment in stock.

In the above two extremes, no one poses a better foot, but the answer is found between the two, that is, the combination of the both. The economic order quantity should be set in such way that all the variables cost of inventory can be balanced. The variable costs of the inventory are those which vary with the size of the order quantity.

c) Lead time:

There is always some interval between that time that the content is determined and the order is made and the time when this material is actually manufactured and distributed. This is the interval period prime time. The more time it takes to get the result of the production and vice versa, the more the important time is there. In order to maintain the operation of plants, inventory increases when lead time increases. However, no security stock will be required, if the lead time is zero, because replenishment of the stock can be done immediately without any problem. If lead time is long, it is more difficult to predict usage or consumption, whereas the order is open. if the purchase is zero, then no prophecy will be necessary. However, the difference in lead time can be quite substantial.

d) Safety stock:

In practices, the demand or use is generally not known with certainty. Generally, it fluctuates during certain periods. Typically, the demand for finished goods inventory is subject to the largest fluctuations. On the contrary, yet loss of raw material and the use of the transit list, which both depend on the timing of production, is more use of the transit list, which both depend or insistence, the main time required to receive inventory delivery, one subject to some variation after ordering.

Due to these fluctuations, it is not possible to allow the expected inventory to fall to zero before predicting the new order, as the firm could easily do so when the usage and lead time were known with certainty.

Most companies maintain some margins of security or safety socks to meet the demand at a particular time. In this regard, the order point is a predefined signal that does stock controller will indicate that he should consider the possibility or reorganising stock items in question. It is expressed in unit of material as it is talked and ordered. Whenever, and issue from stock causes the coverage of an item below the predetermined point, the items should be examined. The order point should be chosen at higher level so that the state is sufficient to meet the maximum expectations required on the stock during the period when the replacement in a stock order.

e) Cost of possession of inventory:

It is an acknowledged fact that the invention of inventions involves cost and high cost. According to the Professor Alford and Bangs finding "The annual cost of carrying the production list is approximately 25% of the value of the list." Everett Welch has conjointly found at" The annual opportunity cost of inventory is quite 20% has of the whole inventory worth, some shows vary of 10 to 34% ". Since the cost include keeping many inventions worth, but the main cost involve in the list of occupations are:

- **The cost of capital:** when a firm buys production materials and carries goods, then it leaves available less money available to the firm in the form of working capital for other purposes. To certain weather the planned capital in the list is justified, the ration of sales to the list should be calculated. In order to increase this ratio, the company should reduce inventory or increase sales without increasing the inventory. In this way, the company's income on investment will increase.

Since money tied in inventions represents an invest blockage of capital, therefore, it is logical to change a rate equal to the interest for the company that it can earned if it is invested elsewhere.

- **Insurance cost:** The company main need to pay the insurance fee to ensure it property against possible loss of fire and other forms of damage this insurance cost is 100% variable cost property.
- **Property tax:** This cost me very from state to state and its 100% variable in nature as its tax is Levi's at the valuation value of forms property. The higher the inventory value the higher, the value of the property and the resultant higher, firms are billed.
- **Storage cost:** The most obvious cost is this storage cost, which includes rent for the storage facilities. Salary are personnel and related storage expenditure include storage costs, although the type of stored materials varies, types of storage facilities used and so on.
- **Obsolescence and decline:** It are as expected fact that whenever a discovery occurs, a certain percentage of a given inventory becomes absolute. No matter how the warehouse managers guards against this incident there is always a certain amount of obsolesce and degradation well manage company where ruthlessly washed the surplus inventory and removed it from the warehouse." The general rule is never to keep inventory for those who do not have urgent need". And with the introduction of the new product at an increasing rate, the likelihood of the occurrence of the obsolescence accordingly is increasing. As a result, the larger the inventory, the more damage the source will cause.

- **Acquisition cost:** Most companies do not take inventory because they required protection against stock out but due to the reducing the cost of acquisition. Since ordering and buying the large quantities reduces both purchase cost and order cost. Therefore, it is necessary to know that cost of writing the purchase order, the cost of the stocking material and the available discount for the item being brought.
- **Purchase cost:** when a company buy a large quantity, the supplier will cut their prices because their cost is low when they get a simple big order rather than many small orders. With this, they cannot only reduce their administrative expenses but by generating large scale they can also reduce the unit cost of production.
- **Ordering cost:** In addition, these large orders also reduce most other cost of acquisition, Example Except buying, the cost of obtaining and applying the material, interplant and intra plant transportation, packing and so on. However, the order of the cost with only have value purchase is unimportant. If there are lot of orders then the cost of order is small goods can be quite high.

Inventory management tools and techniques:

1.Reorder alerts

Reorder alerts, or **low inventory alerts**, will appear in your inventory management system to alert the user(s) of when it's time to reorder a certain item. The alert will appear when the product level reaches the predetermined reorder level. The inventory management system is able to do this because it is able to see the amount of each product (even if they are in multiple locations, warehouses, etc.), and see when the overall product level has become "low".

2. Reports

Reports can be created using the report function in an inventory management system. The data and information is pulled from the system's database to create a report with all of the pertinent information necessary. Examples of categories of the types of reports and documents available include

- inventory reports
- sales reports
- purchasing reports

Reports can be standard, meaning they are already available in the inventory management system. Alternatively, reports can be customized, meaning they are a modified or altered version of a standard report or personalized for a business in order to display specific information desired.

3. Dashboards

In an inventory management software system, a **dashboard** is an on-screen graphical display of information. Different information and data, which have been pulled from the system's database, can be viewed from the dashboard. For instance, activate allows users to customize the information that is shown on their dashboard screen.

4.Barcoding and mobile systems

Barcoding and mobile systems are a combination of hardware and software that allow your business to assign, scan, and manage barcodes.

Barcode hardware includes items such as barcode scanners and label printers. **Barcode software** is the system that manages the barcoding and inventory information. To learn more about barcoding hardware and software.

5. System integrations

An inventory management software system is able to integrate with other business management systems, such as accounting software, webstore platforms, and EDI, just to name a few.

INVENTORY ANALYSIS TECHNIQUES:

There are several methods you can use to perform your inventory analysis. The best way to do it depends on your industry and your inventory type. Here are the most common techniques or methods and the industries that use them:

- **ABC Analysis:**

  ABC analysis is an inventory management technique that determines the value of inventory items based on their importance to the business. ABC ranks items on demand, cost and risk data, and inventory mangers group items into classes based on those criteria. This helps business leaders understand which products or services are most critical to the financial success of their organization.

- **VED Analysis:**

  This method is based on how vital it is to have an inventory item in stock. Manufacturing companies use this technique to assess the components and parts they must have on hand. With this analysis, they measure inventory based on:

  - **Vital:** Inventory that must always be in stock at sufficient levels
  - **Essential:** Have at least a small number of these items in inventory
  - **Desirable:** It's not critical to always have these items on hand

- **Material Requirement Planning(MRP):**

  In this method, manufacturers order inventory based on sales forecasts and stock data from various areas of the company. So, a company that manufactures swimwear will order more inventory in the months before demand increases.

- **HML Analysis:**

  Often used in manufacturing, this analysis measures the inventory based on high, medium and low cost.

  The accounting cost of inventory also depends on whether a company uses Last in, First Out (LIFO) or First in First Out (FIFO) accounting. LIFO companies sell the inventory first that they bought last. FIFO companies sell the inventory first that they bought first. In First Expire, First Out (FEFO), expiration dates drive the sales, with companies exhausting the stock with the earliest expiration date first. To learn more about LIFO, FIFO and other cost accounting methods,

- **SDE Analysis:**

  This inventory analysis method considers how scarce an item is and how easily you can acquire it. This technique often involves components that make up a manufactured good. With this analysis, a company measures inventory based on:

  - **Scarce:** A component that is scarce and takes a while to get
  - **Difficult:** A part that is less scarce but still may take several weeks to arrive
  - **Easily Available:** Components that are easy to acquire

- **Economic Order Quantity(EOQ):**

  This method assesses the sales rate for an item, along with its ordering costs and storage costs. Using these three variables, EOQ determines how often and how much the company should order. The goal is to keep the ordering and storage costs as low as possible while still meeting all customer orders.

- **Fast, Slow and Non-moving (FSN):**

  In this approach, the company categorizes inventory into three buckets: fast-moving, slow-moving and non-moving inventory. Managers assess the inventory and make new stock purchases based on the category. Companies using FSN re-order fast-moving inventory most often.

- **Custom Par Levels:**

  This analysis sets an inventory amount at which the company must re-order each item. This technique requires extra work at the beginning of the process but can ensure an organization rarely runs out of stock.

Inventory Management Techniques

Selecting the right inventory management techniques for your business is no easy task. The faster your business grows, the more difficult managing your inventory becomes. That's why setting the right foundation from the start is so critical. In this guide, we outline techniques, processes, and best practices for inventory management.

1. Bulk shipments

This method banks on the notion that it is almost always cheaper to purchase and ship goods in bulk. Bulk shipping is one of the predominant techniques in the industry, which can be applied for goods with high customer demand.

The downside to bulk shipping is that you will need to lay out extra money on warehousing the inventory, which will most likely be offset by the amount of money saved from purchasing products in huge volumes and selling them off fast.

2. ABC inventory management

ABC inventory management is a technique that's based on putting products into categories in order of importance, with A being the most valuable and C being the least. Not all products are of equal value and more attention should be paid to more popular products. Although there are no hard-and-Fast rules, ABC analysis leans on annual consumption units, inventory value, and cost significance. Categories typically look something like:

3. Backordering

Backordering refers to a company's decision to take orders and receive payments for out-of-stock products. It's a dream for most businesses but it can also be a logistical nightmare if you're not prepared.

When there's just one out-of-stock item, it's simply a case of creating a new purchase order for that one item and informing the customer when the backordered item will arrive. When it's tens or even hundreds of different sales a day, problems begin to mount.

Nonetheless, enabling backorders means increased sales, so it's a juggling act that many businesses are willing to take on.

4. Just in Time (JIT)

Just In Time (JIT) inventory management lowers the volume of inventory that a business keeps on hand. It is considered a risky technique because you only purchase inventory a few days before it is needed for distribution or sale.

JIT helps organizations save on inventory holding costs by keeping stock levels low and eliminates situations where deadstock - essentially frozen capital - sits on shelves for months on end.

However, it also requires businesses to be highly agile with the capability to handle a much shorter production cycle.

5. Consignment

Consignment involves a wholesaler placing stock in the hands of a retailer, but retaining ownership until the product is sold, at which point the retailer purchases the consumed stock. Typically, selling on consignment involves a high degree of demand uncertainty from the retailer's point of view and a high degree of confidence from the wholesaler's point of view.

6. Drop shipping and cross-docking

This inventory management technique eliminates the cost of holding inventory altogether. When you have a drop shipping agreement, you can directly transfer customer orders and shipment details to your manufacturer or wholesaler, who then ships the goods.

Similar to drop shipping, cross-docking is a practice where incoming semi-trailer trucks or railroad cars unload materials directly onto outbound trucks, trailers, or rail cars.Essentially, it means you move goods from one transport vehicle directly onto another with minimal or no warehousing. You might need staging areas where inbound items are sorted and stored until the outbound shipment is complete. Also, you will require an extensive fleet and network of transport vehicles for cross-docking to work.

7. Inventory Cycle counting

Cycle counting or involves counting a small amount of inventory on a specific day without having to do an entire manual stocktake. It's a type of sampling that allows you to see how accurately your inventory records match up with what you actually have in stock. This method is a common part of many businesses' inventory management practices, as it ultimately helps ensure that customers can get what they want, when they want it, while keeping inventory holding costs as low as possible.

CURRENT SCENARIO OF TEXTILE INDUSTRY:

India is now a fast-emerging market to reach half the population of middle-income group by 2030. All these factors are smart for the Indian textile business within the long haul. Even if the global economic crisis is worsening day by day, but till economics are rising and growing, the textile industry is developing here in south and South -East Asia, provided it is for competition and innovation.

Indian textile sector is one of the oldest industries in the Indian economy, which comes back in many centuries. During the financial year of 2017 and 18, India ‘s total textile exports to at USD 39.2 billion. The Indian textile industries extremely diverse with hand-wired and hand-woven garments area at one end of the spectrum. Whereas capital is the deep refining area on the other end of the spectrum. Decentralise electricity looms /hosiery and weaving area is the largest component of the textile sector. Close to the ancient culture and traditions of the country in terms of textile (for a raw material like cotton) and textiles the textile industry makes Indian textile sector unique in comparison to the industries of the other country Indian textile industry has ability to produce a white variety of suitable products for the different market in the India and around the world.

As it said, it is not fair to pull all eggs in the basket in the financial sector. Something like this happened in case of Indian textile industry, With the opening of world market and ending cloth quota since 2005, there are negative situation. But, the barrier is always 20-20 The Indian textile industry should focus on all the keys sectors for fibre to fashion and plant for organised development in the supply chain to complete with China and even country such as Pakistan Vietnam and Thailand.

Textile and appeal industry can be broadly divided into two categories yarn and fibre and proceed textile and textiles in November 2017, the domestic textile industries expected to reach US dollar to 21 billion for US dollar 2021 billion while in the financial year in 1919, the cotton production in India has reached 36.1 billion bales. Private consumption is expected to increase in financial year 19. Make strong domestic demand for textile. Increase penetration of organized retail, favourable demographics and increasing level of income are likely to increase demand for clothing textile production is expected to be 40.6 billion square metre in the financial year 2019 India is a second largest business of in textile and wear.

CHAPTER-2

LITERATURE REVIEW

LITERATURE SURVEY:

Literature review was done to identify and study the inventory management practices prevalent in the textile industry in India and outside.

The research (Abuthakeer, Pavithran, Vigneshraj, & Vimalkumar, 2017) aimed at studying the inventory management in a textile industry manufacturing fabric from yarn. The study concluded that in the order cope with the rapidly emerging textile industries in India, it is for the company to adopt modern technology. Apart from enhancing its technical capabilities the industry must also focus on improving its resource utilisation, for economic and sustainability.

The study (Shen, Deng, Lao, & Wu, 2017) aimed at identifying the key factors that influence the inventory

management practices by the manufacturing firms. The recommendations made through the study were

- Hire more supply chain professionals
- Establish strategic suppliers' partnership
- Improve the IT infrastructure
- Improve company regulations and standardize operational processes

The study on 'Management of Inventories in Textile Industry: A Cross Country Research Review' (Shafi, 2014) aimed at studying how inventories in textile sector are managed across the globe

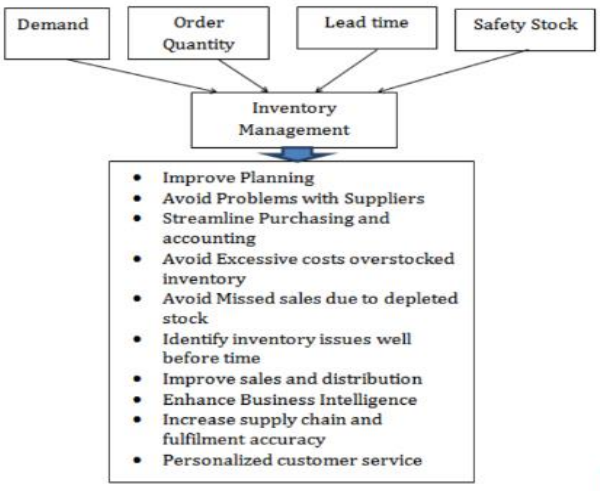
. The literature study showed that textile sector is a growing field all-over. And the textile firms are working on solving the problems on efficient inventory levels.

The study suggests that various aspects of inventory management are yet to be explored. And since the textile sector has gained importance in the recent past, future work needs to be done in the area of inventory management. A Comparative Study of the Inventory Management Tools of Textile Manufacturing Firms

The study (ARO-GORDON & GUPTE, 2016) aimed at investigating the contemporary techniques for inventory management. The results suggested that a proper inventory control system is closely associated with low storage costs, cost-reduction and timely delivery of requisite Goods, products, materials and services to customers and stakeholders, thereby enhancing sustained profitability, competitive ability, and enhanced market diversification prospects. Authors

further suggested that numerical examples of real-world application of inventory management techniques among public and private enterprises must be studied. Few modern inventory management techniques identified were Setting up and monitoring various stock levels, Automated inventory system, Establishing proper purchase procedures, Inventory

Turnover Ratio, ABC inventory classification technique, Just-In-Time inventory management technique, Bulk-purchase approach, Vendor-Managed Inventory (VMI), Out-sourcing inventory control personnel, Lead-time analysis, and Software applications and tracking system. In textile industry (Raparia, 2017), inventory management based on the upstream and downstream activities i.e., to maintain large number of inventories and expend minimum costs in the inventory for profitability. The challenges that the textile industry face with respect to the inventory management are Fluctuating customer preferences, Unrealistic shipping and return policies, Lack of digitization, Wide variety of products.



LITERATURE REVIEW 1:

A. Inventory Management

Every company has its own inventory where each of the company manage inventory in different ways of management. However, the purpose of inventory in the same where the inventory should always be ready to use and the inventory cost should be low inventory management refer to all the activities involved in developing and managing inventory levels either inventory in raw material semifinished material or a good, so adequate supplies should be always be available and form will definitely cost more or less cost are always low, stocks are always low. The role of inventory management is to maintain a desire stock level for each specific product or item, where the inventory planning and control system should be based on product, the product for the consumer and product available in the list. In addition, on the basis of the importance of inventory on the balance sheet of the companies, there is asset on the balance sheet of the inventory company where there has been a substantial increase as many forms play some strategic by reducing their investment in fixed assets, plants, warehouses, office building, equipment and machineries

B. Relationship between inventory management and operational performance

The study (Nerul Nadia Suraidi, January 2016) aimed at company's performance depend on many variables, either sale marketing, good human resource, low production cost, either depend on success list. For this research, it is focused on one of the variables that are inventory management. Inventory management is an important part of inform because the miss management of inventory forces to the form viability, such as a lot of inventory consumer physical space, generate financial burden, and increase is the livelihood of loss, decorations and loss. To achieve the performance of good company the company should be able to make the highest profit at the lowest cost.

LITERATURE REVIEW 2:

Inventory Management Approach

Many problems are coming from inventory management. This can be used to prepare techniques that are relevant to the company's objective. Companies can adopt techniques like to bin systems, where a bin serves to maintain a safety bin when the second bin is used. In another technique called golf classification, the classification of good in according to the nature of the supplier on the other hand ABC analysis ensure that management efforts are Focus where results are likely to be received. VED classifies pair parts as to how they are necessarily and desirable, while SED classification enables top management to sort the materials as they are rare or a difficult to obtain. Most textile companies in Kenya are relying on the traditional technique despite the many benefits arising out of the use of modern inventory management techniques.

Information technology

According to the Carter and price (2010) dependency on information is the key to its performance and survival. In order to effectively manage inventory, information technology is needed to facilitated tracking and recording inventory. Use of computer helps keep proper record and maintain relevant inventory level at a maximum level. Through information technology, features like electronic data interchange (EDI) are used in this system, there may be direct communication between different organisation involve in the operation of inventory. It involves transmitting and receiving data in a structured way by business partners without inventions of people (Jessup 2006).

EDI helps in connection suppliers with those organisations, which makes it possible to order at any time if needed. Through EDI, organisations and supplies computers are made easy to monitor inventory levels and reduce possible delay, where required.

It helps in reducing labour cost, increasing the level of accuracy and reducing labour cost and potential delay due to accelerate communication. Information also includes the use of electronic point of sales (EPOS). The techniques help in scanning and capturing information related to the good sold. This system also facilitated verification and provision of time report regarding sales and other relevant information. It helps in reducing the cost of handling inventory during the sale and provision of instant information which can help in tracking the good being sold and the people in the store. The use of EPOS means the obsolescence is obtained only when obsolescence is necessary to avoid cost and to decline the shares. The implementation is achievement of customer satisfaction and letter financial performance (Kenya November 2016).

LITERATURE REVIEW 3

Introduction

The concept of inventory management has been viewed differently by various authors, academics and researchers of the subject. In an effort to gain inside to an inventory management, it is necessary to know different opinions on these subjects. A major author on production management defines inventory management as a branch of business management, which is related to the development of policies, in which the forms inventory is to be confirmed. Thus, inventory management is a sum total of those activities required for the acquisition, storage, sales, disposers or use of materials.

The approach emphasizes policies and managerial aspects as well as functional aspects of management. Inventory management is also considered.

According to the plan coordination of a series of task which will use the facilities of plant in a financial manner and by regulating the gradual movement of the goods through the purchase of all material from the shipping of finish goods at a predeterminate through their manufacturing cycle. Thus, Inventory management deals with an effective management within the financial discipline of determining policies and procedures for the purchase of commodities and a concern. Inventory control, a part of inventory

management, is a planned method of determining whether to indent, how much to indent, and how much to stock so that cost of procurement and storage is the least possible without adverse effect of production and sale.

This involves planning and programming material purchasing storage disposal of scraps and the use of surplus materials and sub products. Thus, inventory management presently sum total of activities necessary for the acquisition, storage, sale, disposal or use of material. With the definition it can be said that related to the inventory management

- Planning and Programming
- Purchase
- Storages and Care
- Settlement and Surplus stores
- Control and Inventories.

LITERATURE REVIEW 4

In the last decade, invention has been reduced in many firms, but evidence of better form performances mixed. Grablowsky (1984), compared the invention management practices of tiny and huge companies, and concluded the small business form should also use some efficient inventory management techniques for better result. Demeter (2003) found that the inventory improvement only indirectly affects the firm's profitability Gaur ki al (2004) showed that the annual inventory turnover is negatively correlated with the gross margin and the intensity and the sale of capital is positively correlated with the surprise. Chen, et. Al (2005) has found at the list has decreased considerably for 1981 – 2000. They found the unusually high inventory firms.

There was less long-term stock return, fever inventory form shows simples returns, while company holding average inventory show good stock returns. His study uses tab in q as a measurement of inventory management as a number of days in the performance of the measurement of a performance. They also found that the work has gone down significantly in the raw material and the process invention and the finish good lists remains stable during the period. Rumingtong and Netsyn (2005) analyse inventions in American companies for a period of 10 years, and found that in the firm working with more uncertain demand, long lead margin, higher gross margin and less inventory holding cost. Inventory level is high, apart from this, large companies have more profit that scale economic and therefore is a relatively less inventory compared to the smaller companies.

LITERATURE REVIEW 5

Ha, Mewesale FJ, Sichona, RRJ, Akoro -2015, He investigated the position of the inventory in Urafiki Textile Mill Company Limited in Dar-es-Salam, Tanzania and tried to develop the economic order quantity(EOQ) model, which will be used to determine. The number of units of the item and the order of reorder (R) to order at the time, it is the level at which stocks of goods are allow to fall before order other item for the raw material. As a result, for each raw material, the comparison of EOQ is done with actual order quantities so that it can be seen whether there is any correlation between the operating cost reduction or not. His study uses cross section secondary data from Urafiki. They use normal distribution test to come to compare the cost of the operating cost. Excel was used to find out EOQ and reorder points. There result showed that the relation between the EOQ and the amount of quantity order in the Urafik was important in terms of operational cost reduction. Therefore, it is recommended that in order to manage inventory effectively Urafiki need to employee inventory control method like you model to obtain the right order quantity for their raw materials.

Dr.T.S. Devraj-2015, India is a second largest producer of garment and textile after China. It is a world's third largest cotton producing country- after China and USA the second largest cotton consumer after China. The Indian textile industry itself is a diverse and complex and the country itself and its combine this vast variety with uniformly uniform diversity. The basic strength of this industry flows through its strong production based of synthetic, manmade fibre, such as polyester, nylon and acrylic such as a cotton, jute, silk and wool, while range of fibre /yarn. It is a last decade that the growth pattern of the Indian textile industry has been much higher than the previous tickets primarily due to the liberalisation of a business and economic policies initiated by the government in the 1990. Develop in their area in collaboration with the prelims of country protection this of relative is with the cloth make as give rise to unique variety of government exporters in the third world.

Donald S. Alan -1995, There study has change significantly in the last one or two years in the inventory management matter in the United States, which is evident in the low trade- to- sale ratio, almost entire leave. In process, the invention of material and suppliers. The effect of these change inventory management techniques on the business cycle is unclear. All other things are likely inventory management innovation should reduce the possibility of the unexpected accumulation but unless the form understand the demand for future or less the inventory cycle will remain intake and it the reduction in production is required to reduce the inventory, there may be less demand and future inventory build-up as a result of decrease in earnings (Shafi 2014).

CHAPTER-3

RESEACH STUDY

RESEARCH METHODOLOGY

STATEMENT OF PROBLEM

The life blood of any organization, whether private or public productive or service organization is inventory. Because of shortage of materials to meet sudden increase in 6 customers demand, reduction in profit margin, low returns on equity, wastages of materials, pilferage arising due to excess stock and sleep in communication chains that exist in most industries, inventory management has become mandatory on each and every manager responsible for production in an organization. Inventory is one vital resource that any organization requires and just like any other resource that is very scarce and that requires effective management rather than neglect. The cost of acquiring these inventories is also important for the fact that too much of it will mean tying down capital and risk of becoming obsolete while having little could lead to shortage and production bottle neck. How then, to determine adequate quantity of raw material to buy, where to buy on a regular basis devoid of scarcity, the amount to invest on the inventory and projection towards maximizing profit is the concern of the study.

NEED OF STUDY

The need of this quantitative study was to test appropriate theories concerning about inventory management tools and techniques that related to performance of manufacturing industry and to find out problems of stock management within textile manufacturing industry.

This study determines whether the suggestions of a tools / techniques can have an impact on performance and inventory management and whether this addressing these problems. A quantitative research approach using online questionnaires to gather information.

The quantitative research provides textile industry to view how inventory management tools/ techniques allow to improve performance and how the business benefits from this implementation.

OBJECTIVES OF STUDY

The general objective of this research is to examine the inventory management tool/techniques used in the manufacturing industries and study the impact of inventory management tool/ techniques on the operations performance of the firm. The inventory management problems and seek the best recommendation to be practiced by companies to improve their inventory management. Thus, this study specifically attempted to address the following objectives:

- To explore the problem in inventory management in manufacturing industry.
- To identify the tools/ techniques used by manufacturing industry in managing their inventory management.
- To provide recommendation to other companies in order to improve their inventory management.

HYPOTHESIS

H0: There is no relationship between inventory management and performance of Suryaamba Spinning Mills Limited and Sri Bhagirath Textile Limited.

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H1: There is a relationship between inventory management and performance of. Suryaamba Spinning Mills Limited and Sri Bhagirath Textile Limited.

CHAPTER-4

RESEARCH METHODOLOGY

RESEARCH DESIGN

The study adopted an empirical cross-sectional design. But qualitative and quantitative were deployed to address the research objectives. In this design, data is gathered in week. The qualitative research was conducted to understand problem in inventory management by conducting a structured interview. The quantitative research design includes survey research and comparative research. The advantage is based on the fact that a lot of insights is developed regarding the variables under the study and this facilitates of information over the period.

SOURCE OF DATA

- **Primary Data.:**

Primary data was collected from the staff of the Suryammba Mills and Sri Bhagirath Limited by using the close ended self- deigned Questionnaire.

- **Secondary Data:**

It is gathered from the internet, journals, past records and reports.

- **Sampling Design:**

This study focused on two textile firms in Nagpur. With the help of this study, other textile firms can improve their operations performance accordingly.

CHAPTER-5

DATA COLLECTION

DATA COLLCTION

They study utilise primary data. Data was obtained using questionnaires has developed by the researcher. The questionnaire contains questions and statement based on the research objectives. The question will be structured in such a way that there are easy administer and analyse as well as an aided the researcher obtained in the date responses on the survey.

It was divided into four sections: Section A deals with the general information of the respondents and the organisation; Section B addresses the implemented of inventory tools and techniques; Section C deals with the impact of inventory tools and techniques on firm performance and Section D deals with the advance technology resources used by the firm. The target respondents were operation procurement and inventory or store manager or any other person who may have the equivalent position. The questionnaires were dropped and picked up later by the researchers.

CHAPTER-5

ANALYSIS AND INTERPRETATAION OF DATA

DATA ANALYSIS

For qualitative data, we summarised some highlights points to answer the objectives of the study. For quantitative research, information has been analysed using statistical data, such as by interviewing the management person from the organisation and summarising some secondary data from the recourses.

COMPANY: Suryaamba Spinning Mills Limited

- **Year of Establishment:** 1993
- **Nature of Holding:** Private Limited
- **Employee strength in the Organisation:**500
- **Type of Manufacturing:** Yarn Manufacturing (spinning)
- **Annual Turnover:**100-500cr
- **Owner of the company**: MR. Virendra Kumar Agrawal

Company is a testimony to growth driven by adherence to quality and commitment. it was humble unit of 12,678 spindles synthetic spinning capacity has frown many folds over the years. Since then, the company has come a long way doubling its capacity over the years and adding cotton open end yarns in its product portfolio. Today, it is a private limited highly professional organisation, with an ISO9001-2015. Quality Management Certification, wide range of products on offer, global reach and a robust infrastructure to boast of.

The company has added 2000 rotors offering open end yarns that make it 100% Polyester and Viscose spun yarn. It also has synthetic ginning plant with annual capacity of 14400mt tonnes. Going forward, company aims at expanding its reach in various established and emerging global markets.

For achieving this, the company is committed to investing in the key pillars of technological advancements, infrastructural strengths and people skills. We, at company, always look forward to be assistance in providing the best quality products to all our clients and are committed to uploading the integrity of relationship above all.

At Suryammba, customer satisfaction and trust have always been our guiding principles. We strive to deliver as per expectations in quality of our products and adherence to commitments with extreme dedication and diligence.

We are committed to creating a highly energised and positive environment for our people to work and grow in. The company believes in collective growth and our HR polices are designed to encourage our people towards acquiring newer skills and developing them to their full potential. The people at Suryammba have made 'maintaining a high level of quality' their foremost priority and strive for excellence in all they do- a unique combination of professionalism and love for what they do. 40% our total workforce consists of. Women; a testimony to fact that the company endeavours to offer equal growth opportunities to people from all segment's society irrespective caste, creed or gender. All employees enjoy a fabulous inhouse living infrastructure that is administered by a registered cooperative society.

Values of Suryammba Mills:

- Customer services
- Integrity
- Growing together
- Safety
- Social Responsibility

Quality improvement techniques have in place which apply in Operation performance are ISO 9000. are ISO 1400 Total Quality Management and Process Management System

The company look for quality technique in supplies of raw material are ISO 9000 just in time and total quality management. Company have experience of using three basic quality improvement tools that are cause and effect diagram, Check sheet, Control chart out of 7 basic quality tools. Above basic quality improvement tools are used often (several times in a year but less than once a month) in a company.

Problem faced by company to improve quality-

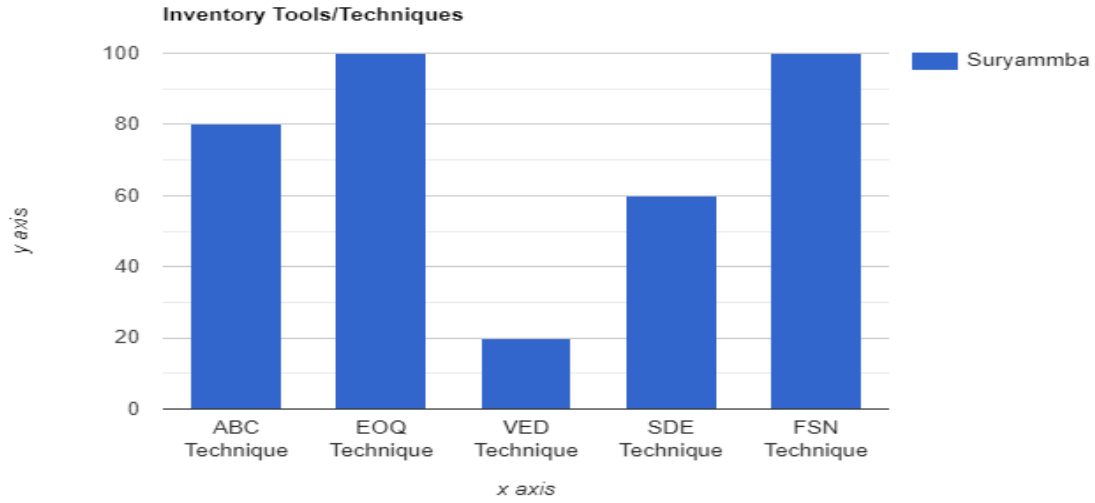
Since company produce commodity product, the end quality of yarn is completely depending on the quality of raw material which made very according to the season and sourcing area

Changing atmosphere affect the quality of raw material (cotton) which directly affect in improving quality of product. Similarly, the different sourcing area of raw material with changing atmosphere creates a problem to improve the quality.

Companies' management team itself also follow some procedure of quality improvement in their work and those procedures are randomly selecting the samples from process and taking credit actions, if required. And regularly cleaning the monitor monitoring the machineries.

- **Rating on inventory management tools is being used by Suryaamba organisation**

  - **Raw Material:**



Inventory tools/techniques used RM by Suryammba

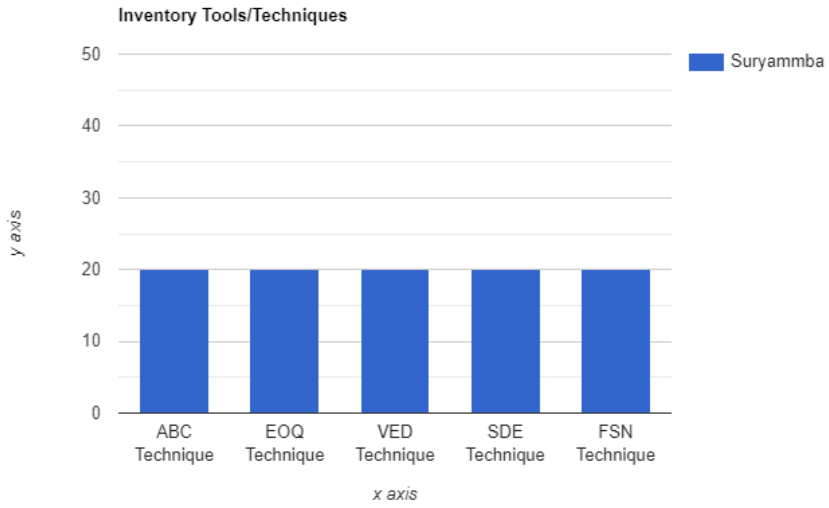
Interpretation:

From the above obtained rating and its graphical representation of Suryaamba, they use 100%EOQ technique and FSN technique which is more effectively work to maintain the raw material. On the other hand,80%ABC inventory technique is implemented for better result.

SED technique is implemented only 60% to keep the stock of raw material in warehouse. But VED technique is unrecognized by Suryaamba as they use its only 20%. Hence, overall average inventory tools and technique are being used by Suryaamba is72%.

On the other hand, they use ERP software and MIS software which helps to maintain the level of raw material according to their lead time assigning to.

❖ **Work in progress:**



Inventory tools/techniques used for WIP by Suryaamba

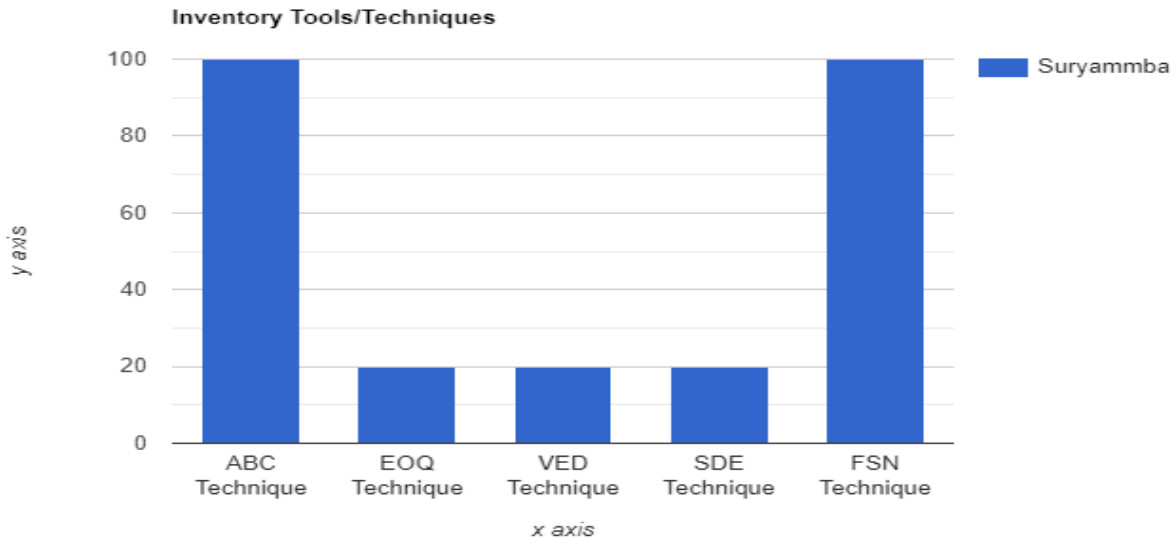
Interpretation:

From the above obtained rating and its graphical representation of Suryaamba, they use least amount of overall inventory tolls and techniques like ABC, VED, SDE, EOQ, FSN technique to manage the WIP inventory i.e., only 20%.

Because it is not necessary to maintain WIP stock which is the ongoing process. Hence, overall average inventory tools and technique are being implemented by company is 20%.

On the other hand, for WIP inventory is not maintained as such but for identifying the colour of yarn, they use different colour bobbins.

❖ **Finish Goods:**



Inventory tools/techniques used for Finish Goods by Suryaamba

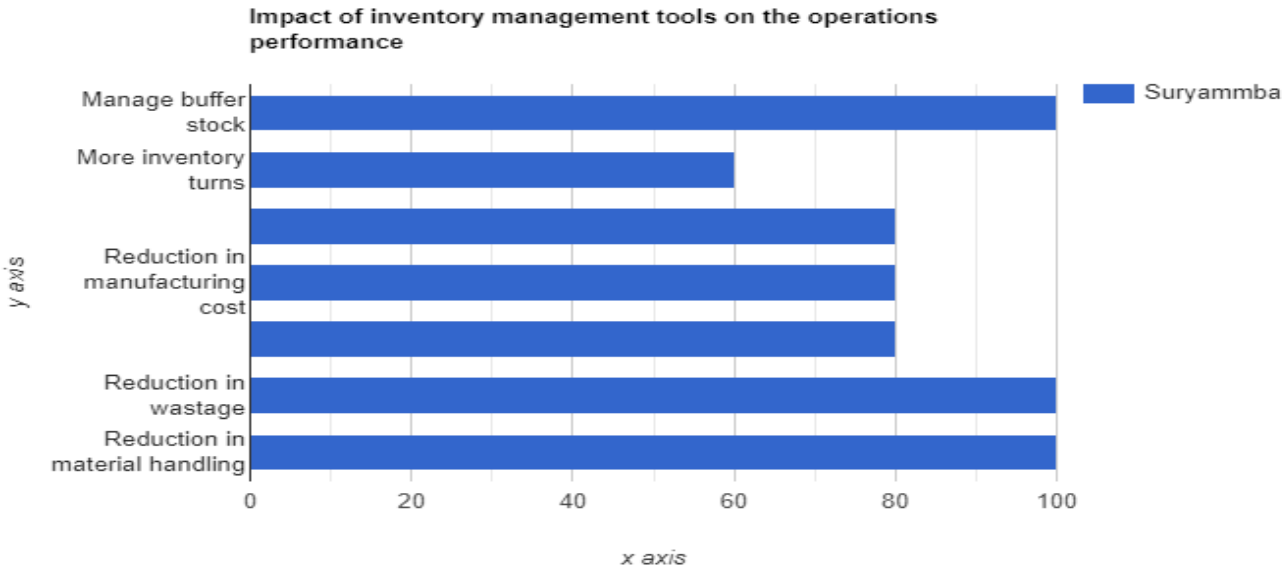
Interpretation:

From the above obtained rating and its graphical representation of Suryaamba, they implanted only 20% EOQ technique, VED technique and SDE technique for keeping stock of finish goods.

Almost 100% inventory techniques like ABC and FSN technique are implemented to manage the finish goods inventory.

Hence, overall average inventory tools and technique are being used by company is 52%.

- **Rating on the Impact of Inventory Management Tools/Techniques on Operations Performance of Suryaamba. Mills**



Impact of Inventory Management Tools/Techniques on Operations Performance

Interpretation:

Above chart show the percentage impact of inventory management tools on the operations performance of the Suryaamba. Mills` It can be seen that there is 100% impact on managing buffer stock, reduction in wastage and reduction in material handling by implementing the inventory tools and techniques on the operations performance.

On the other side, there is 80% impact on the operations performance of reduction in material handling cost, manufacturing cost and manufacturing lead time by implementing the inventory tools and techniques.

Hence, according to the obtained information the average impact of inventory management tools and techniques on operations performance of company is 86%.

Company: Sri Bhagirath Textile Limited

- **Year of Establishment:** 1991
- **Nature of Holding:** Private Limited
- **Employee strength in the Organisation:**550
- **Type of Manufacturing:** fabric Manufacturing (Waving)
- **Annual Turnover:**500cr
- **Owner of the company**: MR. Praveen Rander

Company initially set up as a spinning unit with an installed capacity of 7680 spindles in Nagpur, Maharashtra for manufacturing of cotton and synthetic blend yarn. The company went on continuously modernising and expanding its capacity. Presently the company having an installed capacity of 120000 spindle and 1080 rotors, 544 vortex positions and 514 Air jet looms. It currently manufactures synthetic /cotton blends and 100% cotton and grey fabric.

The Company is one of the largest manufacturers of grey fabric with export constituting more than 40% of its total turnover. It has well established position in the market and has a very favourable reputation as well as capacity to deliver the high volumes of relatively short notice.

The company is committed to operating a successful business by developing, manufacturing marketing and supporting quality Yarn and fabric for the global textile industry. We shall accomplish this by:

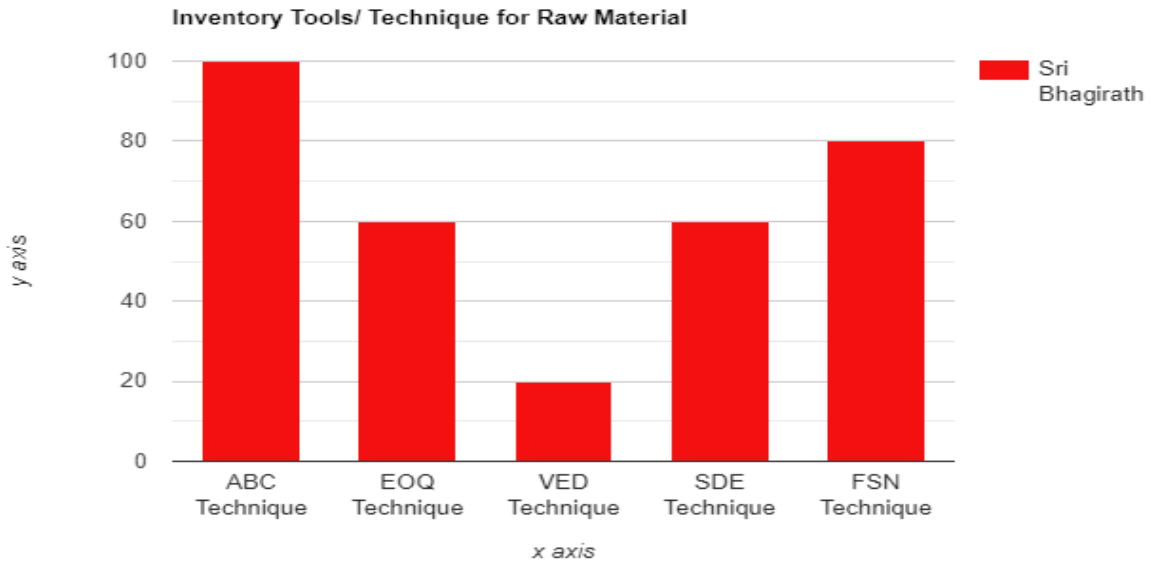
- Developing long term relationship with the supplier and the buyers with an aim to be more reliable supplier in textile value chain
- For their future develop mentation.
- Remain at the forefront in high quality textile product manufacturing.
- To excel in our core area of competence i.e., manufacture of yarn and fabrics to give highest priority to the customer satisfaction.
- To develop new varieties of yarn and fabric.
- To upgrade production facilities and technology continuously.
- To fulfil the aspiration of customers, employees, financers of the society in general.
- To recruit and retain skilled manpower, reward superior performance.
- Socially Responsible Corporation

Quality improvement techniques have in place which are applied in operation performance are ISO 9000, 5S, Total Quality Management and Process Management System. The company look for quality techniques in suppliers of raw material are ISO 9000, just in time and total quality management.

Company have experience of using three basic quality improvement tools that are cause and effect diagram, check sheet, control chart out of seven basic quality tools.

- **Rating on inventory management tools is being used by Sri Bhagirath**

  - **Raw Material:**



Inventory tools/techniques used raw material by Sri Bhagirath

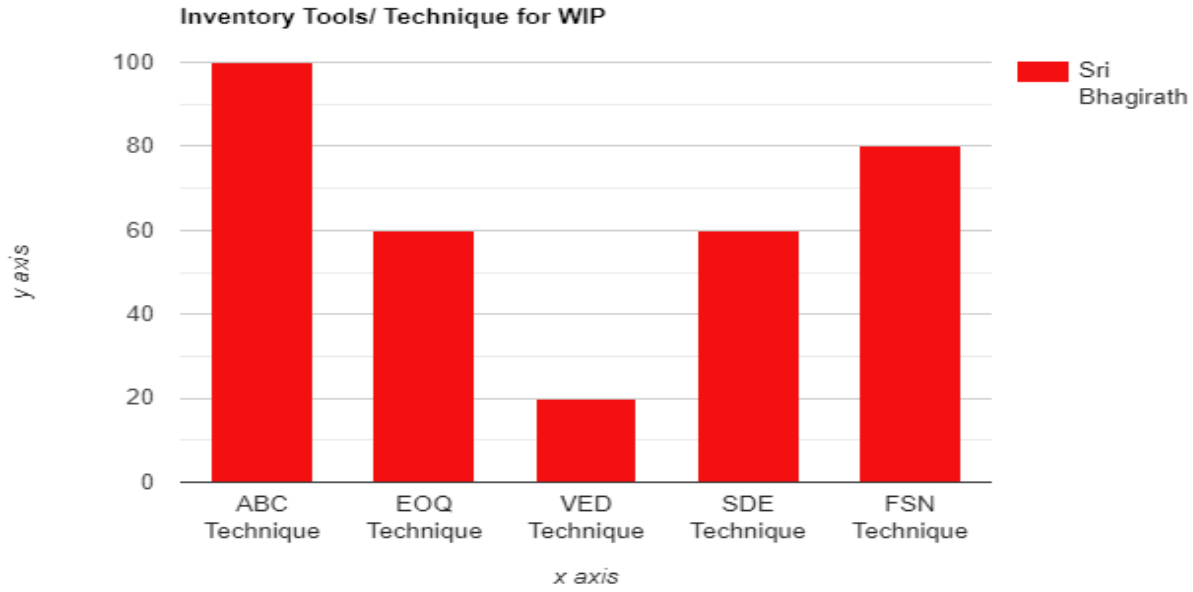
Interpretation:

From the above obtained rating and its graphical representation of company, they implemented least amount i.e.,60%of overall inventory technique viz. VED technique, SDE technique and EOQ technique.

On the other side, FSN and ABC technique are fully implemented to manage raw material stocks in the warehouse. Hence, overall average inventory tools and techniques are being used by companyis64%.

On the other hand, they used ERP software and MIS software which helps to maintain the level of raw material according to their lead time assigning to.

❖ **Work in progress:**



Inventory tools/techniques used for WIP

Interpretation:

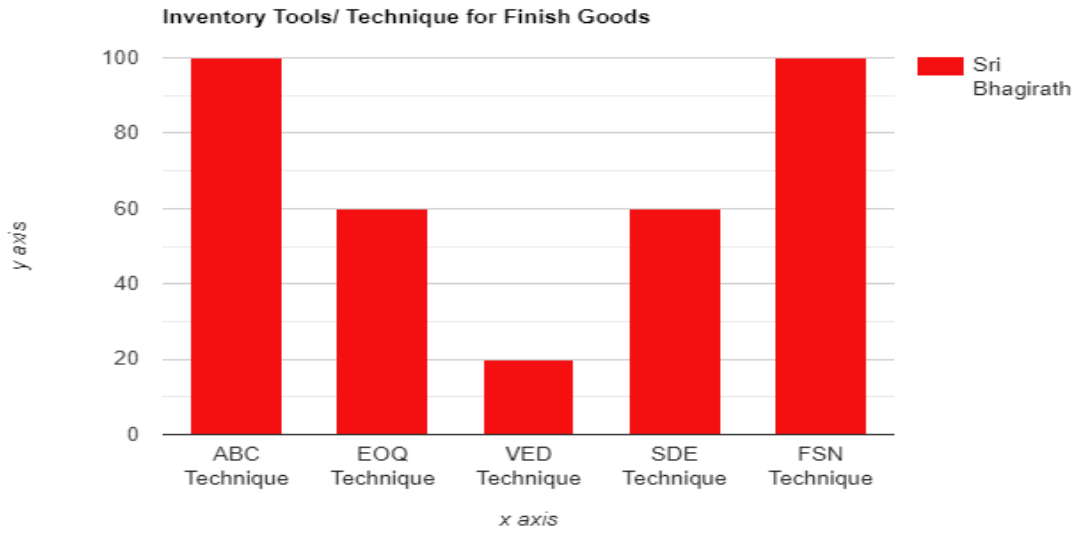
From the above obtained rating and its graphical representation of company, they use least amount of overall inventory technique i.e., VED technique, SDE technique, EOQ technique is 60% implemented to maintain the WIP stock.

FSN and ABC technique are implemented mostly to manage the WIP i.e., 80% and 100% respectively.

Hence, overall average inventory tools and technique are being used by company is 64%.

On the other hand, for WIP inventory is not maintained as such for identifying the colour of yarn, they use different colour bobbins.

❖ **Finish Goods:**



Inventory tools/techniques used for Finish goods

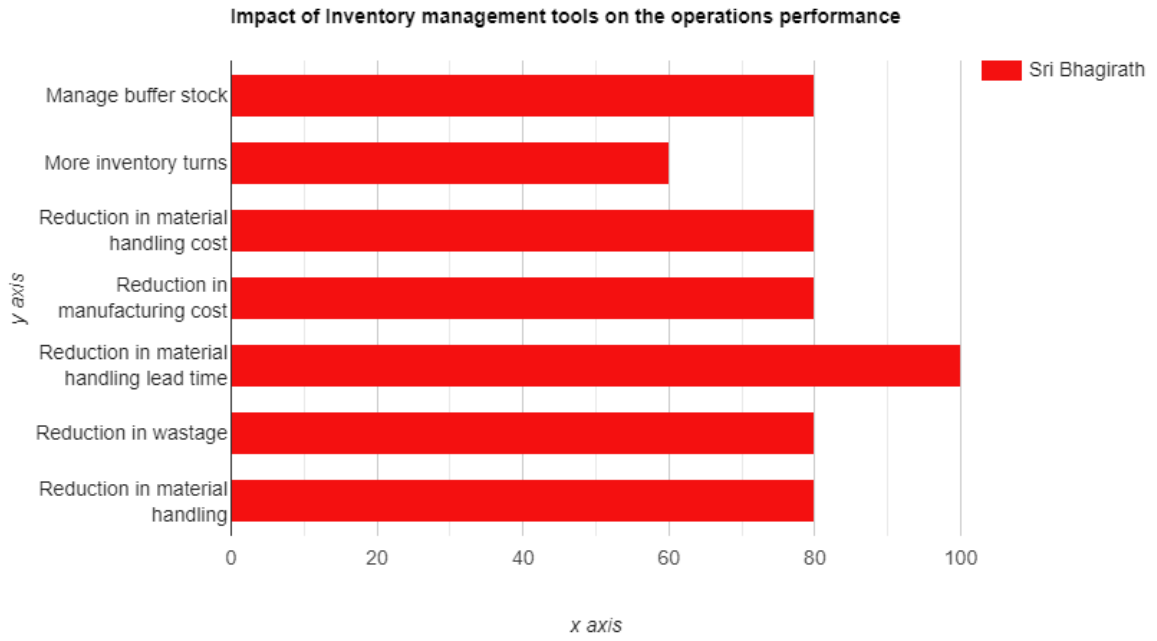
Interpretation:

From the above obtained rating and its graphical representation of company, they implanted overall 60% EOQ and SDE technique to maintain the stock of finish goods.

There is implemented of VED technique about 20% for the stock of finish goods and almost 100%ABC and FSN technique to manage the inventory of finish goods.

Hence, overall average inventory tools and technique are being used by company is 68%.

- **Rating on the impact of inventory management techniques/ tools on operations performance of the company Sri Bhagirath Textile Limited**



Impact of inventory management tool/techniques on operation perforamance

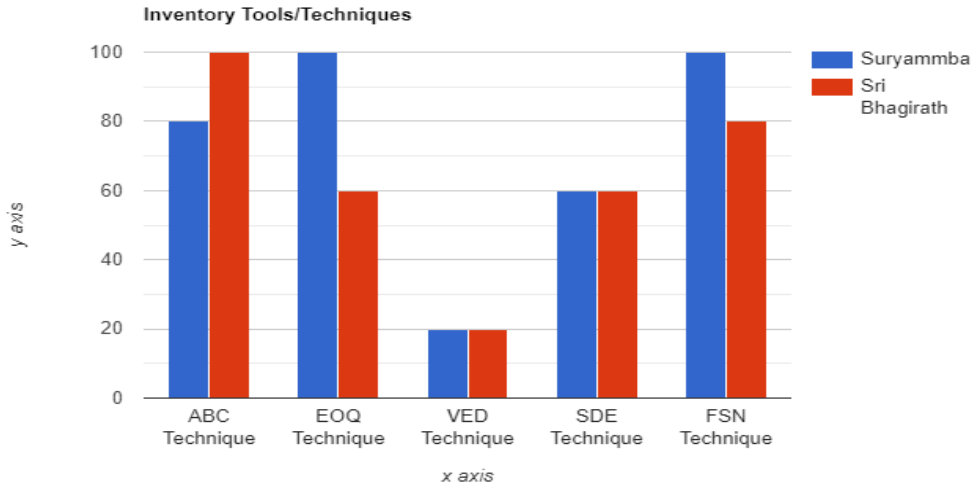
Interpretation:

From the above obtained rating and its graphical representation of company, there is 100% impact on reduction in manufacturing lead time by implementing the inventory tools and techniques. On the other side, there is 80% impact on managing buffer stock, reduction in material handling cost, reduction manufacturing cost and reduction in wastage and reduction in material handling by implementing the inventory tools and technique. Hence, the average impact of inventory management tools and techniques on operations performance of company is 80%.

COMPARATIVE STUDY OF COMPANY SURYAAMBA MILLS AND SRI BHAGIRATH TEXTILE LIMITED

- Rating on inventory tools is being used by both companies.

  - **Raw Material:**



Inventory tools/techniques used RM by both companies

Interpretation:

From the above obtained comparative study of company Suryaamba Mills and Sri Bhagirath textiles, **ABC** techniques is implemented by Suryammba is less than Sri Bhagirath i.e., 80%and 100% respectively.

EOQ Technique is used by Suryaamba as compared to Sri Bhagirath i.e., 100% and 60% respectively.

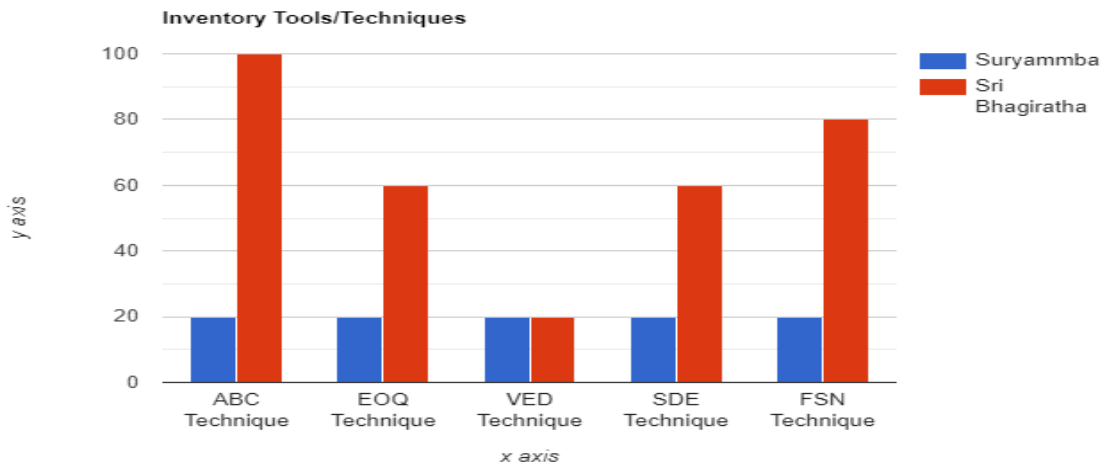
VED Technique is used by Suryaamba as compared to Sri Bhagirath is least used i.e., 20 %

SED Technique is used by Suryaamba as compared to Sri Bhagirath 60% respectively.

FSN Technique is used by Suryaamba is more than Sri Bhagirath i.e., 100% and 80% respectively.

Therefore, the overall average implementation of inventory tools and techniques by Suryammba is 72% and Sri Bhagirath is 64%.

❖ **Work in Progress:**



Inventory tools/ techniques used for WIP by Suryammba and Sri Bhagirath

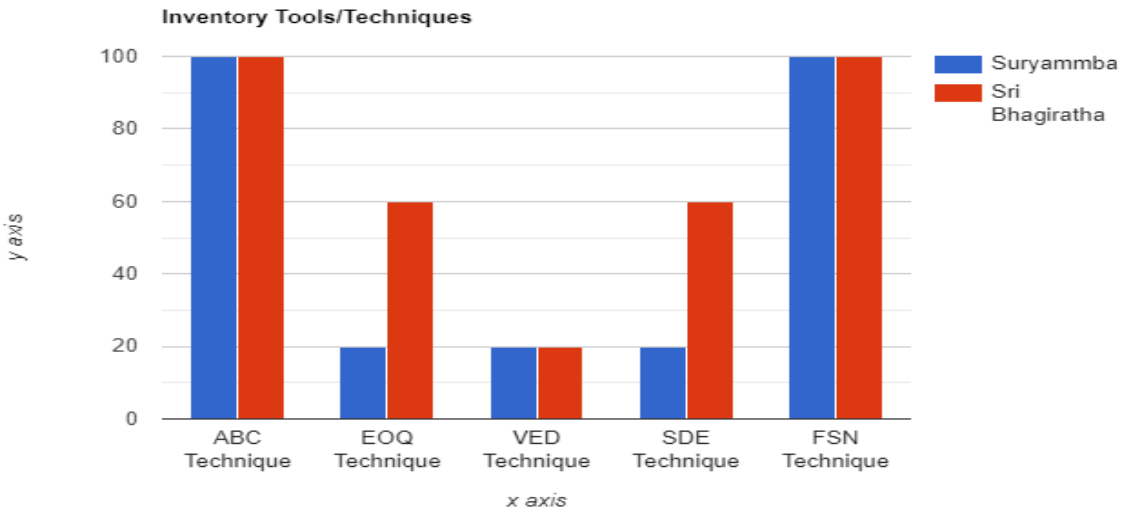
Interpretation:

From the above obtained rating and its graphical representation of company Suryaamba Mills, they implement least amount of overall inventory tools and techniques, ABC technique, VED techniques, SED technique, EOQ and FNS technique to manage the WIP inventory i.e., only 20%.

Other than that Sri Bhagirath implements ABC techniques about 100% amongst all and about 80% FSN technique is implemented to manage the WIP stock. Again, the EOQ and SDE technique both are implemented to 60%.

Sri Bhagirath implements VED techniques wisely i.e., 20%. Hence, overall average inventory tools and techniques are being used by Suryaamba is 20% and Sri Bhagirath is 64%.

❖ **Finish Goods:**



Inventory tools/ techniques used in Finished goods by Suryaamba and Sri Bhagirath

Interpretation:

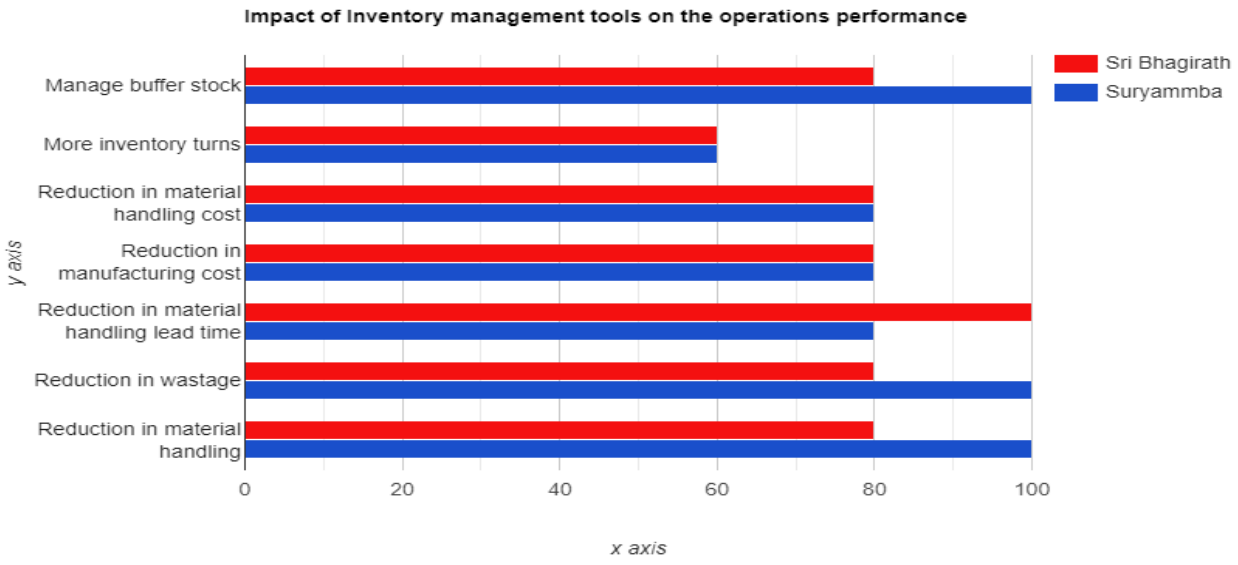
From the above obtained rating and its graphical representation of Suryaamba and Sri Bhagirath, both implements ABC technique and FSN technique fully, i.e., 100%.

Similarly, EOQ technique and SDE technique are implemented by Suryaamba is 60% and by Sri Bhagirath is 20% to keep the stock of finish goods in warehouse respectively.

Suryaamba and Sri Bhagirath, both implements the inventory tools and techniques to manage the inventory of finish goods is only 20%.

Hence, overall average implantation of inventory tools and techniques by Suryaamba is 52% and Sri Bhagirath is 68%.

- **Rating the impact of inventory management tools/ techniques on operations performance of Suryaamba and Sri Bhagirath:**



Impact of Inventory Management tools/techniques on operations performance

Interpretation:

From the above obtained rating and its graphical representation of Suryaamba, the average impact of inventory management tools and techniques on operations performance of Suryaamba is4.3.

From the above obtained rating and its graphical representation of Sri Bhagirath, there is 100% impact of reduction in manufacturing lead time and for Suryaamba there is 100% impact on managing buffer stock, reduction in wastage and reduction in material handling by implementing the inventory tools and techniques on the operations performance. Sri Bhagirath has 80% impact of managing buffer stock, reduction in material handling cost, reduction manufacturing cost, reduction in wastage and reduction material handling and for Suryaamba, 80% impact on reduction in material handling cost, reduction in manufacturing cost and reduction in manufacturing lead time by implementing the inventory tools and techniques on the operations performance.

On the other side, both the companies there is 20% impact on managing inventory turns by implementing the inventory tools and techniques on the operations performance.

Hence, the average impact of inventory management tools and techniques on operations performance of Suryaamba is 82.71% and Sri Bhagirath is 80%.

COMPANY SURYAAMBA:

1. **INVENTORY TECHNIQUES USED FOR RM:**

- ABC Technique
- EOQ Technique
- FSN Technique

2. **INVENTORY TECHNIQUE USED FOR WIP:**

1. ABC Technique used at very low extent to maintain WIP inventory
2. EOQ Technique used at very low extent to maintain WIP inventory
3. FSN Technique used at very low extent to maintain WIP inventory

3 INVENTORY TECHNIQUES USED FOR FINISH GOODS:

- ABC Technique
- FSN Technique

4 Implements JIT for packing material and to so extent of consumable machine parts.

5 Its has delivery lead time of 3 working days.

6 IMPACT ON INVENTORY MANAGEMENT TOOLS. /TECHNIQUES ON OPERATIONS PERFORAMNCE:

- Reduction in material handling
- Reduction in wastage
- Reduction in manufacturing lead time
- Reduction in manufacturing cost
- Reduction in material handling cost
- Manage buffer stock

COMPANY SRI BHAGIRATH:

1. **INVENTORY TECHNIQUES USED FOR RM:**

- ABC Technique
- FSN Technique

3. **INVENTORY TECHNIQUE USED FOR WIP:**

1. ABC Technique
2. FSN Technique
3. **INVENTORY TECHNIQUES USED FOR FINISH GOODS**:

- ABC Technique
- FSN Technique

4. Implements JIT for different kind of material.
5. Its has delivery lead time of 4-5 working days.
6. **IMPACT ON INVENTORY MANAGEMENT TOOLS. /TECHNIQUES ON OPERATIONS PERFORAMNCE:**

- Reduction in material handling
- Reduction in wastage
- Reduction in manufacturing lead time
- Reduction in manufacturing cost
- Reduction in material handling cost
- Manage buffer stock

CHAPTER-6

SUGGESTION AND CONCLUSION

CONCULSION:

- Regarding the first objective, the study found that the company use inventory management tools and information technology to improve the efficiency of the operation performance. The data collection approach gives the light on their traditional method of managing. They also adopted the technological advancement in their traditional work culture which gives the more flexibility to work of the software like MIS software and ERP software etc.
- Further, the study found at the impact of scope inventory tools and technique used by the companies are somewhat effective and some are less effective. Those inventory tools and techniques are not given effective result, should implement in lower extend while other wish give more efficiency and flexibility should implement in the greater extent.
- Using sales force composite better demand forecasting will aid the business in making estimates. It is a technique for projecting sales that is based on the salesperson's projections.

CHAPTER-7

LIMITATIONS

LIMITATAIONS OF STUDY

There were several limitations that faced in completing this study, such as information accuracy; there is certain area were the information is considered private and confidential, lack of prior references sources and lack of skill and experiences

This study is based on primary data taken from authorised person of the company and some amount of secondary data taken from published manuals.

- Primary data collection is very tedious to collect.
- More data collection is not possible due to time constraint.
- Data can be submitted on biased and difference in opinion.
- The study is confined to only two selected company in Nagpur region.
- The present study is mainly based on quantitative and qualitative analysis. It has its own limitations.
- There are different approaches to implement the inventory management tools and techniques which result in increased productivity and the operations performances; in this regard expert views differ from one.

CHAPTER-8

FINDINGS

FINIDNGS OF THE STUDY

- Time was limiting factor.
- Only few inventory tools /techniques analysed (i.e., ABC, VED, FSN, EOQ, SDE) due to limited data.
- The study found at the impact of inventory tools and technique used by the companies are somewhat effective and some are less effective
- To sum up, inventory management is basically defined as the active control program which allows the management of sales, purchases and payments with good inventory management, companies are able to monitor what shipments they have coming and the going out to customer, allowing them to keep just enough inventory in stock to meet demand
- The industry has implemented various technique of control system in controlling raw material in progress and finished goods inventory.
- The former concept has been developed for consume able materials which are required by production section to smoother out of the production activity, while the later system has been used the control high value items closely to maintain relatively low investment in inventory.

CHAPTER-9

SUGGESTIONS

SUGGESTIONS:

- Improve Demand Forecasting will help Company to estimate demand such as using sales force composite. .it is a forecasting technique which based on sales person's estimate of expected sales.
- Improve Scattered Inventory Company is recommended to classify the inventory based on cost which provides Company which product gives high profit. So, the inventory is which product gives high profit. So, the inventory is suggested to be segregated into high, medium and low price before it can be rearrange based on department, brand, merchandise and category
- Inventory Cycle Counting the Company also is suggested to improve cycle The Company also is suggested to improve cycle counting where a small subset of inventory, in a specific location, is counted on a specified day.

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APPENDICES

APPENDICES

Kindly fill up the following information:

(All data obtained in this study will be kept completely confidential)

1. Organisation Name: _____
2. Type of Organisation: _____
3. No. of Employee in Organisation: _____
4. Product Company: _____
5. Manufactured Quantity Turnover: _____
6. Do you have separate inventory department? ☐ Yes ☐ No

   If no, then which department handle an inventory? _____
7. Employee strength in an inventory department? _____
8. Which type of product inventory you manage?

   ☐ Raw Material ☐ WIP ☐ Finish Goods ☐ Others_____
9. Rate on extent to which the following inventory management tools are being used by your organisation:

   For Raw Material:

Sr.No.	Inventory Tools/Techniques	Very low	Low	Moderate	High	Very High
1.	ABC Technique					
2.	EOQ Technique					
3.	VED Technique					
4.	SDE Technique					
5.	FSN Technique					

What are the other techniques used for inventory management?

_____

_____

_____

For WIP Inventory:

Sr.No.	Inventory Tools/Techniques	Very low	Low	Moderate	High	Very High
1.	ABC Technique					
2.	EOQ Technique					
3.	VED Technique					
4.	SDE Technique					
5.	FSN Technique					

What are the other techniques used for inventory management?

_____

_____

_____

For Finish Goods Inventory:

Sr.No.	Inventory Tools/Techniques	Very low	Low	Moderate	High	Very High
1.	ABC Technique					
2.	EOQ Technique					
3.	VED Technique					
4.	SDE Technique					
5.	FSN Technique					

What are the other techniques used for inventory management?

_____

_____

_____

10. Do you implement JIT for any Category of material? ☐ Yes ☐ NO

11. What are the items that require JIT?

_____

12. What is the delivery lead time for JIT items?

_____

_____

13. Rate the impact of Inventory Management tools/ techniques on operation performance of the organisation:

SR. NO.	**Impact of Inventory management tools on the operations performance**	**Very Low**	**Low**	**Moderate**	**High**	**Very High**
1	Reduction in material handling					
2	Reduction in wastage					
3	Reduction in manufacturing lead time					
4	Reduction in manufacturing cost					
5	Reduction in material handling cost					
6	More inventory turns					
7	Manage buffer stock					

14. Do you face any problem to keep inventory? ☐ Yes ☐ No

If Yes, then which type of problem are they?

_____

_____

15. What are the advantages of above-mentioned inventory tools used by your organisation?

16. What are the disadvantages of inventory tools managed by your organisation?

_____

_____

17. What is the role of IT and other advanced techniques in manging the inventory?

_____

_____

18. What are the advantages of IT and other advanced techniques?

_____

_____

19. Any suggestions of you want to give value addition to our study?

_____

_____

We appreciate you valuable time and response.

Thankyou.