



ANALYSIS OF INVENTORY CONTROL TECHNIQUES- ABC & VED; A COMPARATIVE STUDY

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ABSTRACT

Every organization needs inventory for smooth running of its activities. It serves as a link between production and distribution processes. The investment in inventories constitutes the most significant part of current assets and working capital in most of the undertakings. Thus, it is very essential to have proper control and management of inventories. The purpose of inventory management is to ensure availability of materials in sufficient quantity as and when required and also to minimize investment in inventories. So, in order to understand the nature of inventory management of the organization, In this study we analysing ABC and VED inventory control techniques for efficient inventory management system.

Introduction:

In any organization the inventory of materials plays vital role in working capital management. A small saving in the inventory will reflect a vital margin in profit of the organization. Inventory control means the availability of right

materials of right quantities coordinated with lead time. Each and every component of inventory is important and managing the inventories to keep in an optimum level is a must. Since inventory is the major part of their cost of production there is a need for inventory control by way of reducing cost and optimum utilization of materials. Though the company is having certain policies regarding this, still it requires through study of their policy and systems to some extent to understand the inventory management

Inventory constitutes the principal items in working capital in the majority of trading industrial companies. In inventory, we include raw material, finished goods, work in progress, supplies and other accessories. To maintain the continuity in the operations of business enterprise, a minimum stock of inventory required. Management of inventory is design to regulate the volume investment in goods on hand, types of goods carried in stock to meet the need of production and sales while at the same time, the

investment in them to kept at reasonable level

Inventory management is the integrated functioning of an organization dealing with supply of materials and allied activities in order to achieve the maximum co-ordination and optimum expenditure on materials. Inventory control is the most important function of inventory management and it forms the nerve center in any inventory management organization. An Inventory Management System is an essential element in an organization. It is comprised of a series of processes, which provide an assessment of the organization's inventory. For example we are considering the inventories in a company which make Industrial Burners in all these analysis.

Objectives of the Study:

- i. To study ABC and VED analysis of inventory
- ii. To suggest ideas to manage the inventory level of the organization.

Review of Literature:

Inventory management is the accurate tracking of all materials in the company's inventory. Inventory refers to the stock pile of the product a firm is offering sale and the components but make up the product. In other words, inventory is composed of asset that will be sold in the normal course of business operation. The assets which firms store as inventory in anticipation of need are raw materials, work-in-progress, finished goods. Carrying cost refers to the total cost of holding inventory. NumeraTahir, Muhammad Abbas Choudhary, "Development of a Decision Support System for Inventory Analysis and Control" (2011) (i) This cost

includes warehousing costs such as rent, utilities and salaries, financial costs such as opportunity cost, and inventory costs related to perishability, shrinkage and insurance. Anwaruddin T., Abdul Q.L., & Ghulam Y.S.,(2000) (vii), presented ABC Analysis to control the inventory costs associated with spare parts store of a service industry and suggested about the past inventory problems are due to the congestion of spare parts and use of inappropriate computer package. Inventory management is the continuing process of planning, organizing and controlling inventory that aims at minimizing the investment in inventory while balancing supply and demand. So Managing of inventory is very important and it is absolutely necessary to manage inventory efficiently in order to avoid unnecessary investment.

Inventory controls Models and Methods by Dieter Bartmann and Martin J. Beckmann(iii)There are various types of inventory control analysis techniques. Here we shall focus on the following:

ABC Analysis (Selective Control):

ABC analysis which is called "Always Better Control" analysis is the first important step in inventory management and it is to adopt a selective approach in laying down the inventory levels and the closeness of the control to be exercised.

This analysis is also called the Pareto analysis after Vilfredo Pareto, the Italian economist. The question 'what the system should concentrate its control efforts on' is normally resolved by applying the ABC concept to inventory management. J. M. Juran has defined this concept as follows:

“In any series of elements to be controlled, a selected small fraction in terms of numbers of elements always accounts for a large fraction in terms of effect. A few percent of the purchase orders account for the bulk of scheduling and delivery date failures. A few percent of the purchase orders account for the bulk of the total effect of all decisions”.

He further goes on to say “It is important to any control system or any management planning that the vital few be separated from trivial many”. This concept is as applicable to inventory as it is to any other areas of management. When applied to inventory control, this principle implies that relatively small percentage of total items in inventory account for the major annual usage in terms of inventory investment. Normally it is found that 20% of the items represent as much as 80% of annual usage. This fact provides a basis for concentration of control on these relatively few items delegating the control of lesser important items to lower levels of management. This principle is applied to inventory control with the help of ABC Analysis.

Category A, represents the most important items, generally consists of 15 to 25 percent of inventory items and accounts for 60 to 75 percent of annual usage value.

Category B, representing items of moderate importance, generally consisted of 20 to 30 percent of the inventory items and accounts for 20 to 30 percent of annual usage value.

Category C, representing items of least importance, generally consists of 40 to 60 percent of inventory items and accounts for 10 to 15 percent of annual usage value.

ABC analysis is calculated on the basis of annual consumption that 6.27% of total value of items comes under ‘A’ Category

and 18.60% of the value of the items under ‘B’ Category and 75.11% of total value of items comes under ‘C’ category.

1. Proportion of value of ‘A’ items to the total value of all items :

$$= (\text{Total value of A items} / \text{Total value of all items}) * 100$$

$$= (3348511/6256573) * 100$$

$$= 53.51\%$$

2. Proportion of value of ‘B’ items to the total value of all items :

$$= (\text{Total value of B items} / \text{Total value of all items}) * 100$$

$$= (1790067/6265573) * 100$$

$$= 28.61\%$$

3. Proportion of value of ‘C’ items to the total value of all items :

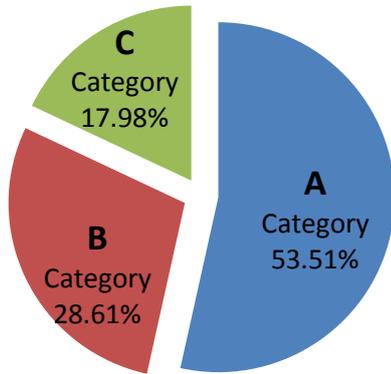
$$= (\text{Total value of C items} / \text{Total value of all items}) * 100$$

$$= (1126995/6265573) * 100$$

$$= 17.98\%$$

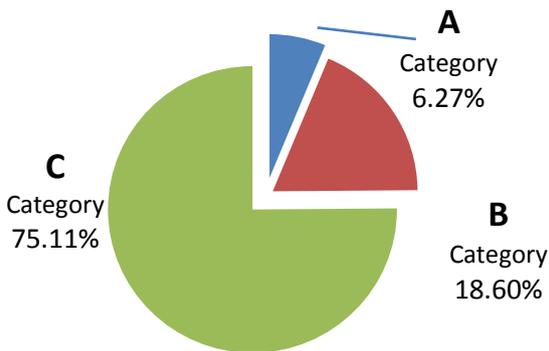
**ABC Analysis
In Vaue of items**

■ A Category ■ B Category ■ C Category



**ABC Analysis
Number of items**

■ A Category ■ B Category ■ C Category



Parameters for considering ABC Analysis:

Category - A - Above Rs.50001/-

Category - B - Above Rs.10001/- to Rs.50000/-

Category - C – Above Rs.0/- to Rs.10000/-

VED Analysis:

It is the process of listing items in three classes. This analysis is important especially when non availability of less

value items can be very critical. This can cause production holdup of entire lines. Where work-in-progress inventory builds up to crores of rupees the classification are done as

V - Vital: Items without which production would come to a halt.

E - Essential: Items without which temporary losses of production or dislocation of production work occurs.

D - Desirable: All other items which are necessary but do not cause any immediate loss in production.

Having classified them, selective control is now exercised over them so that stock outs of vital and essential items are prevented.

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V - Vital: Items without which production would come to a halt.

Number of Vital types of items at company’s workshop/stock is 270 out of 430.

$$\text{Vital (in \%)} = \frac{270}{430} * 100 = 63\%$$

E - Essential: Items without which temporary losses of production or dislocation of production work occurs.

Number of Essential types of items at company’s workshop/stock is 137 out of 430.

$$\text{Essential (in \%)} = \frac{137}{430} * 100$$

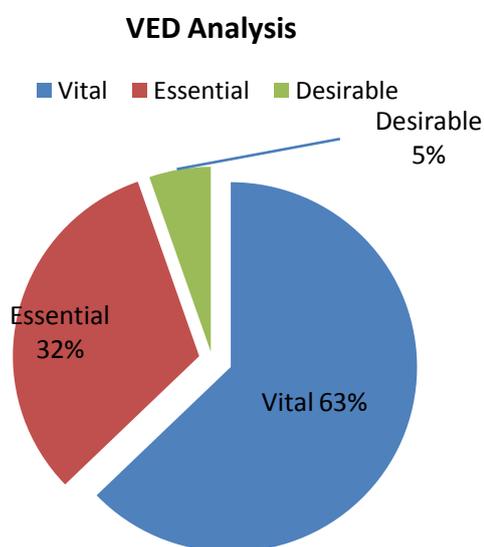
$$= 32\%$$

D - Desirable: All other items which are necessary but do not cause any immediate loss in production.

Number of Desirable types of items at company's workshop/stock is 23 out of 430.

$$\text{Desirable (in \%)} = \frac{23}{430} * 100$$

$$= 5\%$$



Results and Discussion:

ABC Analysis

Class	Class A	Class B	Class C
Item value	58%	28%	18%
Number of item	6%	19%	75%

VED Analysis

Class	Vital	Essential	Desirable
Item value	72%	22%	6%
Number of item	63%	32%	5%

Inventory Analysis and Control has become inevitable for a manufacturing industry. In order to refrain from having an inventory go dead it is of utmost importance to stay abreast with the number and condition of items in that particular inventory. In this regard both periodic and continuous techniques can be used for appraising the status of the stocks. Once the figures are accurately determined it is yet again very important to be able to further determine the level at which a particular item's stock needs to be maintained. For which calculations and analysis are mandatory.

Conclusion:

Inventory problems of too great or too small quantities on hand can cause business failures. If an organization experiences stock-out of a critical inventory item, production halts could result. Inventory management indicates the broad framework of managing inventory. The inventory management technique is more useful in determining the optimum level of Inventory Management. It has become highly developed to meet the rising challenges in most Corporate entities and this is in response to the fact that inventory is an asset of distinct feature.

The study discusses ABC and VED analysis method of inventory control analysis at burner manufacturing industry.

From the above study we have found that the priorities of the items changes according to different inventory analysis techniques.

The management of the company decides which process to follow taking into account their budget, supply, demand, inventory carrying capacity etc.

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