

ABC Analysis, an Inventory Management Technique at a Manufacturing Company

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Abstract:

The process of control and management of inventory is a very important factor in the success or failure of any business. Poor or inadequate inventory management can present a serious challenge to the productive capacity of a manufacturing organization. The major objective of this study was to determine of the effectiveness of inventory management in a manufacturing company. This Study was based on both Analytical and Descriptive types. ABC analysis was proportional parts value analysis or demand and supply method or Pareto analysis. The study concluded the materials are classified according to ABC to reduce storage cost. It also helps to rationalize the number of orders and reduce the overall inventory.

Key Words: Inventory, ABC Analysis, Cost

Introduction

The process of control and management of inventory is a very important factor in the success or failure of any business. Poor or inadequate inventory management can present a serious challenge to the productive capacity of a manufacturing organization. In addition to raw materials and finished goods, many companies also maintain items of assets, property, inventories of work in progress, office supplies, business firms and general operation supplies. Inventory has created a great impact on the profitability of the manufacturing firm. Hence ABC Analysis is carried out for a manufacturing company located at Trivandrum, Kerala.

Characteristics

The problem of determining what to order, when to order, how much to order and how much to stock so that costs associated with ordering and holding are optimal without interrupting production or sales, have been one of the major challenges facing

manufacturing industries in the world (Godwin, Harold Chukwumeka and Onwurah (2013), "Inventory Management: Pivotal in Effective and Efficient Organizations").

- The holding of inventory is risky because of the capital investment and the potential for obsolescence.
- Investments for inventory cannot be used to obtain other goods or assets that could improve enterprise performance.
- Funds supporting inventory investment must be borrowed, increasing the firm's interest expense. A second form of risk is the possibility that the product will be pilfered or become obsolete.

ABC Analysis

In supply chain, ABC analysis is an inventory categorization method which consists in dividing items into three categories, A, B and C: A being the most valuable items, C being the least valuable ones. This method aims to draw managers' attention on the critical few (A-items) and not on the trivial many (C-items).

The ABC inventory control technique is based on the principle that a small portion of the items may typically represent the bulk of money value of the total inventory used in the production process, while a relatively large number of items may form a small part of the money value of stores. The money value is ascertained by multiplying the quantity of material of each item by its unit price.

According to this approach to inventory control high value items are more closely controlled than low value items. Each item of inventory is given A, B or C denomination depending upon the amount spent for that particular item. "A" or the highest value items should be under the tight control and under responsibility of the most experienced personnel, while "C" or the lowest value may be under simple physical control.

It may also be clear with the help of

Category	Percentage of total number of items	Percentage of total material cost
A	10	70
B	20	25
C	70	5

the following examples:

- a. "A" Category – 70% of the total material cost value, but it constitutes only 10% of the items or quantity (high value materials).
- b. "B" Category – 25% of the total materials costs constitute 20% of the material items middle value materials.
- c. "C" Category – 70% of the total items it represents only 5% of the total value (low value materials).

Thus this method assumes that smaller number of items in inventory may have larger money value and the larger number of items has smaller money value. ABC analysis is also called proportional parts value analysis or demand and supply method or Pareto analysis.

Advantages of ABC Analysis

- It ensures a closer and a more strict control over such items, which are having a sizable investment in there.
- It releases working capital, which would otherwise have been locked up for a more profitable channel of investment.
- It reduces inventory-carrying cost.
- It enables the relaxation of control for the 'C'

Problem Selection

This particular problem has been taken for study in which the material costs constitute 50% - 75% of the total working capital. The work is carried to reformulate if any changes needed in the present inventory management and control systems in the company.

Research Methodology

This Study based on both Analytical and Descriptive

items and thus makes it possible for a sufficient buffer stock to be created.

- It enables the maintenance of high inventory turnover rate.

The Manufacturing Company

The manufacturing company is the producer of agricultural machineries specifically Power Tillers and Diesel Engines. Its manufacturing facilities include special purpose machines, specially built general purpose machines and imported machines. The inspection facility and testing equipment. The company is Manufacturing and marketing of agriculture machineries like Power Tillers, Tractors, Power Reapers and Diesel Engines etc.

Statement of the Problem

1. Ineffective management of inventory in the manufacturing company.
2. Loss of sales or business of the company as a result of insufficient inventories of finished goods.
3. Low productivity in the manufacturing company as a result of poor inventories model used by the company.
4. Poor management and control of inventories in the manufacturing company.

Objectives

The major objective of this study is to determine of the effectiveness of inventory management in a manufacturing company. The specific objectives of this study are as follows:

1. To perform ABC Analysis in the company.
2. To analyze the Present inventory control technique in practice in the company.
3. To suggest best inventory system best for the organization.

types. Secondary sources include Company Balance sheet, Profit and loss account, Bin cards, Stock Register and Material Price Lists, Material Consumption Register, books, journals and Internet.

Sampling Technique

The sampling technique used is judgment sampling. There are nearly 140 items in the company out of which 20 items are considered for analysis. On judgment all the items above the value of Rs.50, 000 are included in the sample and others are taken on convenience.

ABC Analysis

S.No	Items	Value (in Rs)	Cumulative frequency	Classification
1	BLADE SHAFT	530829	530829	A
2	53 T GEAR	510015.58	1040844.58	A
3	IDEAL GEAR	368908.2	1409752.78	A
4	MAIN HANDLE	359874.9	1769627.68	A
5	42 T GEAR	287228.77	2056856.45	A
6	BALL BEARING 3205	75453.33	2132309.78	B
7	FLY WHEEL	68048.64	2200358.42	B
8	CYLINDER HEAD	66051.37	2266409.79	B
9	32 T GEAR	54800	2321209.79	B
10	SIDE FRAME R	52015	2373224.79	B
11	GOVERNER SLEEVE BODY	48713	2421937.79	B
12	BALANCER DRIVING GEAR	47250.81	2469188.6	B
13	BALL BEARING 5205	44302.5	2513491.1	C
14	BALANCER GEAR UPPER	36762.51	2550253.61	C
15	BALANCER GEAR LOWER	25862	2576115.61	C
16	CAM GEAR	24696.02	2600811.63	C
17	STARTING GEARS	16474.88	2617286.51	C
18	CC COVER	16222.25	2633509.01	C
19	DOG CULTCH	8835.76	2642344.77	C
20	BALANCER IDLE GEAR	1004.02	2613348.79	C

The items under “A” classification is small and is

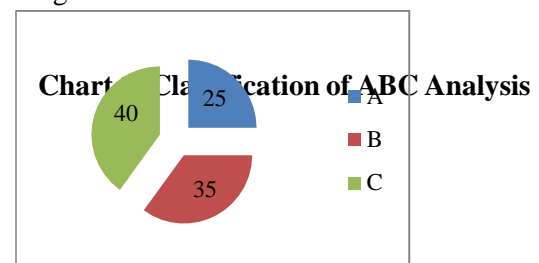
Table: 1

high usage value, whereas items under “B” is of

medium numbers having medium usage value and “C” classification has high number of items and low usage value.

Table 2: Classification of ABC Analysis

Class	No of items	Percentage of total value of items
A	5	25
B	7	35
C	8	40
Total	20	100



Interpretation

- Five items belong to ‘A’ category and account for 78.70% of the consumption value.
- Seven items belong to ‘B’ category and account for 15.58% of the consumption value.
- Eight items belong to ‘C’ category and account for 5.52% of the consumption value.

The materials are classified according to ABC to reduce storage cost. It also helps to rationalize the number of orders and reduce the overall inventory.

Conclusion:- ABC Analysis is an important technique in the hands of mgmt. to increase productivity by minimizing waste and blocking of unnecessary fund in c items and also reduce interest on capital. This technique can used for optimum stock determination for various inventory items like A ,B & C items. ABC means always better control means take more time for controlling of A item compare to B & C Items.ABC techniques can also be used for work in process type of inventory control. Finally by ABC analysis we can increase productivity up to 25%.

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