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Need of Effective Utilization of Material Management on Construction Site

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Abstract - The management and control of inventory is a problem common to all organizations in any sector of the economy. The wealth of shareholders also lies in the warehouse. More than 60% of working capital is normally being invested in the inventory. There can be disadvantages in holding either too much or too little inventory. Therefore inventory management is primarily concerned with obtaining correct balance between two extremes.

Inventory management involves the development and administration of policies, system and procedures which will minimizes total cost relative to inventory decisions and related functions such as customer service requirement, production scheduling, purchasing etc.., Viewed in that perspective, inventory management has a broad scope and affects a great or number of activities in an Organization. For the past few years the concept of inventory system has gained more importance in our country. It is due to intense competition in the market, which has forced organizations to search for proper inventory control technique to reduce investment in inventories and thereby reducing overall cost.

In this study the study of current inventory system is carried out and by combining the different inventory system the one new inventory system developed .By comparing the cost benefit analysis between current inventory control system and new inventory system by taking suitable actual case study will be carried out

Keywords - Construction, material management inventory cost Inventory system

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INTRODUCTION

Materials management in any project has the primary objective of Supply, storage and control of the incoming materials with the aim of ensuring that the maximum value is obtained from the expenditure incurred on the same.

Materials management is an integrated function, embracing procurement and distribution of raw materials, finished products, consumable stores, plant and equipment, spares, maintenance of stores and spares through proper planning, programming, transportation and disposal of scrap and surplus.

The typical objective of the materials management can contribute to the achievement of some overall objectives of the enterprise. If the contribution is made directly by materials function they are called as primary objectives and if the contribution is indirect and results from the assistance of materials department to other department in achieving its objectives it is said to be secondary

LITERATURE REVIEW

Inventory management (2014) G.Brindha Author has presented a paper on Inventory management which gives an idea about importance and investment in inventories in working capital. This paper highlights different inventory control techniques like ABC, FSN, HML, VED, SOS, SDE and their applicability. This paper gives an idea about basic costs involved in inventory management and the system to control them. Also paper highlights the problem of management and control of inventories in any sector. It is necessary for the company to maintain the balance between inventories. Basically, Inventory management includes development, administration, systems and procedures related to the inventories to reduce inventory cost. It is found that inventory system has gaining importance due to competition in the market. Many companies are searching for inventory control methods to avoid unnecessary investment in the inventories.

Inventory Management –A Case Study (2014) Chitra Author has discussed industry practices in inventory management and performance of the company regarding inventory management. EOQ analysis is done on the materials which shows that material management team should pay attention to

the growth pattern of usage of materials. The sequence chart of EOQ for every material was developed to check the demand for materials. So it was suggested that growth pattern of inventory usage should take into consideration while ordering the inventory. In this, The ABC analysis technique for the inventory control system was first carried out to identify the most important products and then the economic order quantity of each product is developed. The paper concluded that proper inventory management is useful to determine the optimum level of inventory and only effective inventory management will provide the solution to the problem of safety stock and lead time. Author emphasis on the use of EOQ in the respective company for inventory control as it was seen best suitable to maintain an optimum level of materials in the store.

Inventory management and its controlling techniques at Wheels India limited (2012) N. Padmavathy [3], Author investigated the inventory position of wheels India Pvt, Chennai for five years .Previously the studies were made at this company but only a few factors were taken into consideration such as annual reports and the analysis were made accordingly. But In this paper, the study of inventory management and its control techniques deals with annual reports as well as store ledger of the company but also with the stores ledger of the company. With the help of store ledger, the study was made on each item and results obtained for each item separately. The investigation is done using ABC analysis, Economic Order Quantity. The Author suggested that more priority should be given to class 'A' materials by keeping track on them. Also, the company should pay attention to such materials whose Economic Order Quantity is high. Such study helps to maintain the efficiency level of inventory management of the organization. The study reveals that the inventory management is a complex action because of the large amount of material that is being used. The company must follow some technique to control the inventory. It is better for the company to reduce the inventory level as it blocks the capitals. The efficiency level of inventory management has revealed here. The recommendations and suggestions were given to improve the level of the inventories in wheels India limited.

An ABC Analysis for the Multiple –Products Inventory Management–Case study of Scooters India Limited (2013) Pramod Kumar Author discusses the inventory control techniques for a small manufacturing company. The analysis carried out at Scooters India limited Lucknow to discuss the production control technique by using the ABC analysis to propose a better material management system that would affect the company's profit. The data was collected through interview with store manager, production, purchasing, and inventory department of the company. Also, data was obtained from annual reports, sales reports, purchasing reports of the company. The analysis shows that company is following ABC analysis for multiple products. It was observed that an inventory model based on sales, lead times and holding costs has not been established. Previously the company has problems in procurement and handling of raw materials not for finished products. The study thus suggested recommendations to improve certain things in the company such as Review of stock levels, Cycle Counting and identifying the potential of consignment.

Study on Stock Management practices in construction Companies (2013) Arunprakash N. and Nandhini N [Authors have addresses the inventory control techniques adopted by construction companies. The study is carried out using annual reports and stock sheets of the company. ABC and FSN analysis are highlighted in this paper. The questionnaire survey was carried out to check the inventory management systems of various companies. Questionnaire study reveals that most of the companies use stock management to control project cost and stock flow. Maintaining receipts for the stock is the only record to check the inventory. They also transfer the stock and use the stock in other activity when there is stock overflow. The company itself uses most of the stock. Most of the companies keep the material access as centralized. The Case study was carried out in a village in which classification was achieved by using ABC and FSN analysis .The paper concluded that almost 60% companies use ABC analysis for inventory control. It is found that every organization considers about the safety stock in the planning. All companies believe that stock management and proper documentation will help to gain profit.

Analysis of Inventory control techniques; A Comparative study (2013) Tom Jose V and Akhilesh Jayakumar Authors addresses the problem of inventory management of the company which is the manufacturer of washing machines. ABC, FSN, EOQ analysis carried out to understand the inventory management of company including safety stock available. The analysis shows that organization does not follow EOQ for purchasing so the inventory management is not satisfactory. From the calculation of safety stock, it was found that how much safety stock company has. From ABC analysis it is found that company maintains its inventories based on its value. According to analysis, it was found that there are no Non-Moving items. Also, it was seen that fast moving materials are low as compared to slow moving materials which may be blocking the capital.

A simple classifier for multiple criteria ABC analysis (2007)Wan Lung Ng Author has proposed a method to classify materials when multiple criteria are considered. In this paper, a simple model for multiple criteria inventory classification is proposed. The model converts all criteria measures of an inventory item into a scaler score. The calculation based on the calculated scores using ABC principle is then applied. A new weighted linear model is presented in this paper which will be helpful to

calculate a score for each item. This model is very helpful to inventory managers as it classifies without using linear optimizer. One of the limitations of ranking is the number of criteria. When the number of criteria is small, a specification of ranking is not required. When a number of criteria is large, it is not an easy task for the decision maker to rank all criteria.

ABC inventory classification based on multicriteria optimization (2007) YE weilong In this paper, Author has proposed an inventory classification method based on multicriteria optimization. In classical ABC classification, annual consumption is taken into consideration and other criteria are not taken into consideration. The method takes the decision makers preferences into account and determines the weights of the criteria by genetic algorithm. At last, the multicriteria inventory classification problem converts to single criteria inventory classification problem and the classical ABC classification can be used. Simulation experiments show that the proposed method and genetic algorithm are feasible and effective. In this paper decision makers only choose one item as their most preferred item. Through the modification of the genetic algorithm in this paper, the multicriteria inventory classification can be easily extended to the case where decision makers may choose multiple items as their preferences.

Inventory control using FSN analysis–A case study on a manufacturing Industry (2015) Shibamay Mitra, Authors applied the inventory control technique on Electric multiple unit (EMU) manufacturing industry. As we know, In any manufacturing industry, the materials are not required all the time. Some materials are quite regularly required, yet some others are very occasionally and some materials are never.FSN analysis groups them intro fast moving, slow moving and non-moving groups. So here FSN analysis is performed based on the turnover ratio. The graphs are plotted for each material depending upon the % annual demand versus % cumulative annual usage. Some graphs were showing little deviation from other graphs. It is found that very low percentage materials are in fast moving class. Non-moving items are more and thus they are blocking the capital. In order to maintain the stock of inventory periodic and continues review techniques can be used.Also,it is important to determine the level(maximum or minimum) at which a particular items stock needs to be maintained. They found that the priorities of the items change according to different inventory analysis techniques. It's up to management which process to follow taking into consideration their budget, supply demand inventory carrying capacity.

Inventory control using ABC and HML analysis –A case study on a manufacturing industry (2013) Shibmay Mitra, In this paper,inventory control technique were applied on Electric multiple unit (EMU) manufacturing industry. Here H.M.L. and ABC analysis are performed depending upon unit price and annual consumption respectively. From the graphs, it has been observed that the graph showing the ABC analysis process of the under frame shows a little bit of deviation compared to the other graphs due to a fewer number of items of the under frame assembly.

CONCLUDING REMARK

1. All the Inventory Control Methods have different parameters and applicability.
2. Most effectively used analysis in the industry is ABC analysis which considers only annual consumption.
3. FSN analysis fails in case of raw materials as they may be issued for production and eventually the produced items may remain in store giving a wrong idea of consumption.
4. HML analysis cannot be used unless they really have an effect on the total inventory cost, in the sense that some high price items may have very low consumption rate.
5. VED analysis only considers about the criticality of materials neglecting other factors.
6. Considering only the cost and ignoring all other factors can cause loss to the company. So by combining all this method and forming matrix might help to improve the working of inventory management and reduce inventory cost.

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