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A Study on Inventory Movement of Electronic Products and its Influence on Operations at Redserve Global Solutions Ltd, Chennai

Sindhuja U¹, Dr. Nivetha P²

MBA Student, School of Management Studies, Sathyabama Institute of Science and Technology, Chennai,
Tamil Nadu, India¹

Professor, School of Management Studies, Sathyabama Institute of Science and Technology, Chennai,
Tamil Nadu, India²

ABSTRACT: The control and maintenance of inventory is a problem common to all organizations in any sector of the economy. The problems of inventory do not confine themselves of profit making institutions. The same type of problems is encountered even by social and nonprofit institutions. Inventories are common to agriculture, manufacturers, wholesalers, retailers, hospitals, churches, prisons, zoos, universities, and national, state, and local Governments. Indeed, inventories are also relevant to the family unit in relation to food, clothing, medicines, toiletries, and so forth. On an aggregate national basis, the total investment in inventory represents a sizable portion of the gross national product. At the enterprise level, inventory holding assumes greater importance, as inventories constitute a large proportion of the total assets of many concerns. It requires a substantial investment of capital besides involving costs of storage and handling as well as risk of damage, loss and obsolescence. In order to minimize costs and also to ensure that the capital is not unnecessarily locked up, inventories must be efficiently managed. Errors in inventory management can not be easily rectified, as it is the least liquid among all the current assets. The major problem of inventory control is to maximize profitability by balancing investment cost of materials against what is required to sustain smooth operations.

KEYWORDS: Inventory Movement, Electronic Products, Supply Chain Management, Warehouse Operations, Stock Control

I. INTRODUCTION

The control and maintenance of inventory is a problem common to all organizations in any sector of the economy. The problems of inventory do not confine themselves of profit making institutions. The same type of problems is encountered even by social and nonprofit institutions. Inventories are common to agriculture, manufacturers, wholesalers, retailers, hospitals, churches, prisons, zoos, universities, and national, state, and local Governments. Indeed, inventories are also relevant to the family unit in relation to food, clothing, medicines, toiletries, and so forth. On an aggregate national basis, the total investment in inventory represents a sizable portion of the gross national product. Inventory problems have been encountered by every society, but it was not until the twentieth century that analytical techniques were developed to study them. The term “inventory” implies the aggregate of tangible assets which are finished goods, work-in-progress, and materials and supplies. Since inventories reflect the investment of a firm’s funds, it is necessary to have an efficient management of inventory. A firm, in order to survive, should have requisite level of inventories i.e. neither inadequate nor excessive. Inadequate inventories means interruption of productions and sales operations whereas excessive inventories means accumulation of idle funds and increasing in carrying cost. Therefore, with the help of an efficient inventory management, a proper balance between these two extreme situations should be maintained for the smooth operation of business.

OBJECTIVES OF THE STUDY

- To identify the factors that affects the inventory movement.
- To study the inventory management and optimization decisions practices followed in the company.
- To examine the inventory control techniques being adopted by the selected units.

- To find out the factors influencing inventory optimization decisions in the company.
- To provide suggestions to improve the inventory optimization discuss with suitable parameters.

II. REVIEW OF LITERATURE

Jamal Abdul Nasir bin Syed Mohamad and Nurul Nadia Suraidi (2025), “A Study on Relationship between Inventory Management and Company Performance: A Case Study of Textile Chain Store”. The study aims to explore the problem in inventory management at company. For quantitative research, information has been analyzed using statistical data, such as ratio analysis of data that obtained from financial statement in five years starting from year 2008 until 2012 to see in clear picture how does inventory management affect the company performance. After data were obtained from ratio analysis, the researchers then regressed the relationship to analyze descriptive statistics, and correlation coefficient in order to test the validity and reliability of the data for this study. If the recommendations are applied by the company Xit should be able to improve the inventory management practice and lead to better performance in terms of profits, reducing inventory cost and maximize utilization of resources.

Stephen Aro-Gordon and Jaideep Gupte (2024), “Contemporary Inventory Management Techniques: A Conceptual Investigation”. Thus, the main objective of this study is to explore the development of effective integrated inventory management policy with emphasis on applicability in emerging market economies. The sample size is 220 respondents. The respondents were selected by adopting Non-probability convenient sampling technique. The statistical technique like Chi-square, ANOVA, has been used for the analysis. The study recommended that sustained profitability, cost-reduction, competitive ability, and enhanced capacity-utilization, and market diversification prospects are among the several key benefits of a robust inventory management policy.

Dorothy Oballah, Dr. Esther Waiganjo and Elizabeth Wangu Wachiuri (2023), “Effect of Inventory Management Practices on Organizational Performance in Public Health Institutions in Kenya: A Case Study of Kenyatta National Hospital”. The purpose of this study was to investigate the effect of inventory management practices on organizational performance in public health institutions in Kenya. A descriptive case study design was used. The sample size was 100 respondents. The statistical technique like Percentage Analysis, Chi-Square and Rank analysis was applied for the purpose of data analysis. The study recommended that the management should constantly expose its staff to training in order to improve their skills on inventory management.

III. RESEARCH METHODOLOGY

This study adopts a descriptive research design. The sampling technique involved is Convenient Sampling. Primary data is collected directly from employees through a structured questionnaire. The sample size of the study is 150. Simple percentage analysis, chi square analysis and anova have been used in this study.

IV. DATA ANALYSIS AND INTERPRETATION

OBJECTIVES OF INVENTORY MANAGEMENT AND COST ELEMENT

H_0 = There is no significant association between objectives of inventory management and cost element.

H_1 : There is significant relationship between objectives of inventory management and cost element.

Objectives of Inventory Management	Cost Element			Total
	High	Moderate	Low	
Optimum Utilization of inventory	14	34	4	52
Realization of stock profit	0	32	0	32
Reduced Cost	26	28	0	54
Others	0	12	0	12
Total	40	106	4	150

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36.885 ^a	6	0
Likelihood Ratio	47.402	6	0
Linear-by-Linear Association	2.685	1	0.101
N of Valid Cases	150		

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .32.
 Calculated χ^2 Value: 36.885
 Degree of freedom: 6
 Table Value: Five per cent level: 12.592

INTERPRETATION

Since the calculated χ^2 value (36.885) is greater than the table value (12.592). Therefore it is concluded that there is a significant association between objectives of inventory management and their cost element. Hence, Null hypothesis is rejected.

TYPE OF SYSTEM ORDER IN MATERIAL USED AND COST ELEMENT

H₀ = There is no significant association between type of system order in material and cost element.
 H₁: There is significant relationship between type of system order in material and cost element.

Type of System order in material used	Cost Element			Total
	High	Moderate	Low	
Fixed order quantity system	18	18	4	40
Fixed periodic system	18	50	0	68
Single Order	0	24	0	24
E.O.Q.System	4	14	0	18
Total	40	106	4	150

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.435 ^a	6	.000
Likelihood Ratio	34.761	6	.000
Linear-by-Linear Association	3.686	1	.055
N of Valid Cases	150		

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .48.

Calculated χ^2 Value: 29.435
 Degree of freedom: 6
 Table Value: Five per cent level: 12.592

INTERPRETATION

Since the calculated χ^2 value (29.435) is greater than the table value (12.592). Therefore it is concluded that there is a significant association between type of system order in materials used and their cost element. Hence, Null hypothesis is rejected.

METHODS OF ISSUING MATERIALS AND COST ELEMENT

H₀ = There is no significant association between methods of issuing materials and cost element.

H₁: There is significant relationship between methods of issuing materials and cost element.

Methods of issuing materials	Cost Element			Total
	High	Moderate	Low	
LIFO (Last in First Out)	18	22	0	40
FIFO (First in First Out)	22	58	4	84
HIFO (Highest in First Out)	0	26	0	26
Total	40	106	4	150

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.711 ^a	4	0.001
Likelihood Ratio	27.02	4	0
Linear-by-Linear Association	13.96	1	0
N of Valid Cases	150		

a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is .69.

Calculated χ^2 Value: 19.711

Degree of freedom: 4

Table Value: Five per cent level: 9.488

INTERPRETATION

Since the calculated χ^2 value (19.711) is greater than the table value (9.488).Therefore it is concluded that there is a significant association between methods of using materials and their cost element. Hence, Null hypothesis is rejected.

V. ANOVA TABLE SHOWING THE DIFFERENCE IN MEAN SCORES BETWEEN CONSTRAINTS IN TECHNOLOGY ADAPTATION & GENDER

H₀: There is no significant relationship between the two categories that are gender of the respondents and their constraint in technology adaptation.

H₁: There is significant relationship between gender of the respondents and their constraint in technology adaptation.

Gender	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.524	2	0.262	1.04	0.359
Within Groups	18.142	147	0.252		
Total	18.667	149			

INTERPRETATION

The above table shows that the P value (0.359) is greater than 0.05. So, there is no significant difference in the mean scores of the respondents based on constraint in technology adaptation with respect to gender of the respondents. It is inferred that gender of the respondents does not influence the constraint in technology adaptation.

VI. SUGGESTIONS

- In order to reduce the outlay and to maintain inventories at optimum level so it becomes necessary to implement proper planning among all functional departments.
- If we reduce the receivables time, the operating cycle time will also be reduced.
- Top management needs to take notice of the impact of work in progress inventories on the performance and profits of the firm and exercise proper controlling measures through materials department to keep the work in progress inventories within acceptable levels.
- Management of inventory should preferably be decentralized. As a step towards this, budget on consumable should be allocated to each department.
- A proper management of the human resources is very essential for the effective function of the inventory management. On the job training is essential for these personnel. The inventory personnel should be fully aware of the purchasing system, quality control and marketing.
- It will be advantageous if they are sent through these departments. So as to enable them to pick up sufficient knowledge of the functioning of these departments.
- Scientific management of inventory would be possible only through training of the executives at all levels. The training courses should enable the candidates to acquire general commercial and specialist knowledge complementary to the practical skills and to learn to apply the skills needed in the purchasing and inventory function efficiently.

VII. CONCLUSION

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. Inventory management has to keep accurate records of goods. It is important for keeping cost down. The better inventory management will surely help in solving problems the company would be facing with respect to inventory and will help in reducing huge investment or blocking of money in inventory. Through this study we concluded that companies can follow economic order quantity for optimum purchase and can maintain safety stock for components in order to avoid stock out conditions and helps in continuous production flow. This will reduce the cost and will increase the profit. If we could properly execute and follow the all the techniques of inventory management, we will be able to enhance the profit with minimum cost.

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