A Study on Inventory Management of Manufacturing Companies

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ABSTRACT:

This study explores the export potential and performance of coconut and its by-products, with a focus on global demand, trade dynamics, and value addition processes. Coconut, often referred to as the "tree of life," offers a wide range of by-products such as coconut oil, desiccated coconut, coir, copra, activated carbon, and coconut water, all of which have seen rising demand in international markets. The research analyzes historical export data, major importing countries, key players in the global market, and government policies that influence trade. Challenges such as price volatility, supply chain inefficiencies, and competition from synthetic alternatives are also examined. The study concludes by suggesting strategies to enhance export competitiveness, including technology adoption, value-added product innovation, and stronger market linkages. This research aims to provide insights for stakeholders to harness the full potential of coconut exports and contribute to sustainable agricultural and economic development.

Key Words: Government trade policies, Supply chain challenges, Sustainable development

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.

Inventory Management Systems:

Inventory is simply stock of physical asserts having some economic value. It is an idle resource as long as it is not used. It may be used as those goods that are stored and used for day to day working of an organization. Centuries ago, inventories were viewed as measures of wealth and power of a country or an individual. In recent past it was also viewed as a measure of business failure. Businessmen therefore, have started to put larger emphasis on the liquidation for fast turnover. Now a day’s due to fast advancement of technologies, inventories are viewed as a large potential risk rather

than a measure of wealth. In this manner it is required to utilize experimental strategies in administration of inventories known as 'Inventory Control'. It is the system of looking after stock things at craved level. Thus, inventory management system is the means by which material of correct quality and quantity is made available as and when required with regard to economy in the shortage costs, set up costs, manufacturing costs, purchase prices and market capital.

Need for Inventory Control:

Transaction motive: Every firm has to preserve some level of inventory to meet the day-to- day transaction of sales, production process, customer demand etc. The finished goods as well as raw material are kept as materials for smooth production process in the firm.

Precautionary motive: A firm should keep some of the inventory for unexpected circumstances like loss due to natural calamities in a specific area, strikes, lay outs etc that may occur so, the firm should have some of the finished goods as well as raw-materials to meet the circumstances.

Speculative motive: The firm may keep some inventory in order to capitalize an opportunity to make profit due to price fluctuations.

II. STATEMENT OF THE PROBLEM

Inventory costs have lot of impact on the profitability of the firm and its success. Inventory management and its optimized decisions are depending on the identification of key success factors and right decisions at right moment. In a dynamic market environment, it is necessary to focus on the decision making and the factors influencing decision making in order to optimize the results of inventory function. The survey approach can bring a light on the variables and these have lot of biased information. Testing of the factors influence on inventory decisions by using scientific methods can 18 help to improve the reliability of the factors taken as key variables in decision making. Hence, the present research is focused on two dimensions namely identification of Factors influencing inventory optimization among Manufacturing companies through a structured questionnaire and grouping them into two sets as internal variables and external variables. Establishing the relationship between grouped factors and the type of organization structure followed and their influence on inventory optimization decisions, Grouped external factor's sensitivity on the inventory optimization decision. Based on this the study is titled as "A study on Inventory Management of Manufacturing Companies in Coimbatore District".

III. REVIEW OF LITERATURE

Jamal Abdul Nasir and Nurul Nadia Suraidi (2024) examined the link between inventory management and company performance in a textile chain store. Using ratio analysis from 2008 to 2012, they applied regression, descriptive statistics, and correlation to assess the impact. The study suggests that improving inventory practices can enhance profits, reduce costs, and optimize resource use.

Stephen Aro-Gordon and Jaideep Gupte (2023) explored modern inventory management techniques, focusing on emerging markets. Using a sample of 220 respondents via convenient sampling, they applied Chi-square and ANOVA for analysis. The study highlights that strong inventory policies can boost profitability, reduce costs, improve efficiency, and support market expansion.

Dorothy Oballah, Dr. Esther Waiganjo, and Elizabeth Wangu Wachiuri (2022) studied how inventory management practices affect performance at Kenyatta National Hospital. Using a descriptive case study with 100 respondents, they applied percentage analysis, Chi-square, and rank analysis. The study recommends regular staff training to enhance inventory management skills.

William Mwangi and Miriam Thogori Nyambura (2019) examined the role of inventory management in the performance of food processing firms in Kenya, focusing on Crown Foods Ltd. Using a descriptive design and stratified random sampling of 110 respondents, data were collected via questionnaires. Descriptive stats and multiple regression were used. The study recommends effective cost control, proper inventory management, and aligning production with demand to boost performance.

Fariza Ahmad Mahyadin and Rushami Zien Yusoff (2015) investigated the relationship between inventory management practices and performance in Malaysian public hospitals. Using testable statements and the Rasch Analysis Model with Winsteps software, the study aimed to assess inventory practice levels. The findings offer guidance for improving performance through proper inventory techniques and help bridge the knowledge gap in this area.

Cynthia Mito Mukopi and Dr. Amuhaya Mike Iravo (2015) analyzed how inventory management impacts the procurement performance of sugar manufacturing firms in Western Kenya. Using a survey design with 200 respondents, data were analyzed with SPSS, ANOVA, and Chi-square tests. The study found that lean inventory systems significantly enhance procurement performance.

Macharia Ngombo Wilson and Dr. Mike A. Iravo (2015) studied the impact of Information Technology on logistics firms' performance in Nairobi County. Data were collected from 10 firms (30% of the population) and analyzed using percentage methods and Chi-square tests. The study found that greater IT usage positively influenced logistics firms' performance.

III. OBJECTIVES OF THE STUDY

- To identify the factors that affect the inventory management.
- To study the inventory management and optimization decisions practices followed among Manufacturing Companies.
- To examine the inventory control techniques being adopted by the selected units.
- To find out the factors influencing inventory optimization decisions among the Manufacturing Companies.
- To provide suggestions to improve the inventory optimization discuss with suitable parameters.

IV. METHODOLOGY OF STUDY

Research design is generally a pure and simplified framework and certain plan for a study that will guide the collection and analysis of data where information needed. The function of the research design is to ensure that the required data is obtained and collected accurately and economically. The sampling technique involved is Convenient Sampling. The study depends on primary data. A pilot study is conducted to validate the questionnaire and to confirm the feasibility of the study. Based on the pilot study, the questionnaire is modified suitably to elicit response from the sample group. Sample of 150 respondents were taken into study, and their data were collected. Samples for the purpose of the study are selected systematically. The data examined in the forms of Pie charts as Percentage Analysis and Statistical Analysis by making use of SPSS software i.e., Chi Square Test and ANOVA in Hypothesis Testing. The study is using a structured predetermined question. It is an objective study. The implications are that these would affect perceptions and expectations.

V. DATA ANALYSIS

TABLE 1. TABLE INDICATING CHI-SQUARE TEST OF AGE AND COST ELEMENT

H0: There is no significant association between Age of the respondents and their cost element.

H1: There is significant relationship between Age of the respondents and their cost element.

Age	**Cost Element**			**Total**
	High	**Moderate**	**Low**	
Below 25 years	4	30	0	34
25 - 40 years	26	54	2	82
40-45 years	10	12	2	24
Above 45 years	0	10	0	10
Total	**40**	**106**	**4**	**150**

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.806[a]	6	.010
Likelihood Ratio	19.928	6	.003
Linear-by-Linear Association	.111	1	.739
N of Valid Cases	150		

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .27.

Calculated $\chi 2$ Value: 16.806 Degree of freedom: 6
Table Value: Five per cent level: 12.592

INTERPRETATION:

Since the calculated $\chi 2$ value (16.806) is greater than the table value (12.592). Therefore, it is concluded that there is a significant association between age of the respondents and their cost element. Hence, Null hypothesis is rejected.

TABLE II. TABLE INDICATING ANOVA THE DIFFERENCE IN MEAN SCORES BETWEEN CONSTRAINTS IN TECHNOLOGY ADAPTATION & PLACE OF RESIDENCE

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

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

Place of Residence	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	0.030	2	0.015	0.035	0.965
Within Groups	30.557	147	0.424		
Total	**30.587**	**149**			

INTERPRETATION:

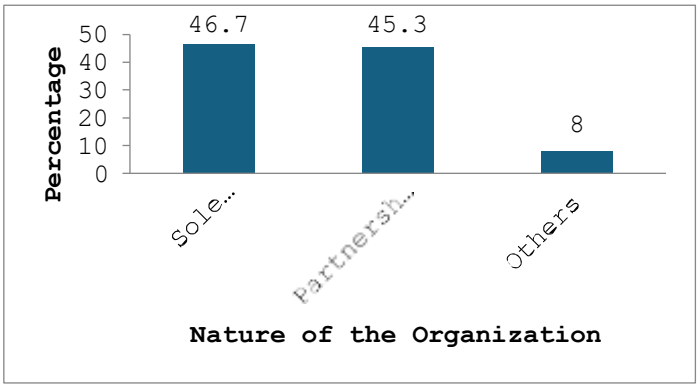
The above table shows that the P value (0.965) is greater than 0.05. So, there is no significant difference in the mean scores of the respondents based on constraint in technology adaptation with respect to place of residence of the respondents. It is inferred that place of residence of the respondents does not influence the constraint in technology adaptation.

TABLE III.TABLE INDICATING NATURE OF THE ORGANIZATION

Nature of the Organization	**No of respondents**	**Percentage**

Sole proprietorship	70	46.7
Partnership	68	45.3
Others	12	8.0
Total	**150**	**100.0**

FIGURE I. CHART REPRESENTING NATURE OF THE ORGANIZATION



INTERPRETATION:

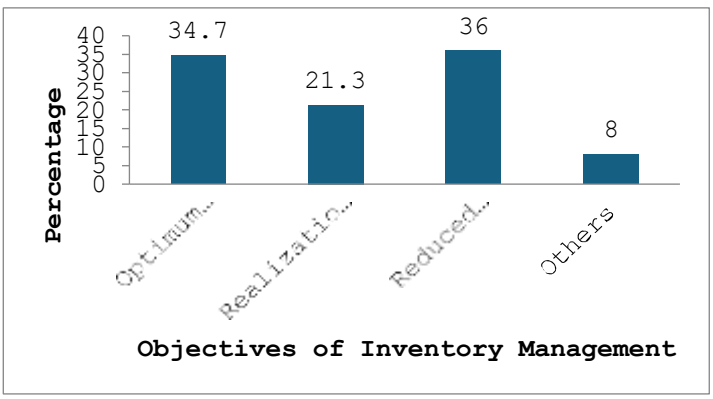
The above table depicts the nature of organisation. Out of 150 respondents, 70 (46.7%) of the respondents are worked in Sole Proprietorship organisation, 68 (45.3%) of the respondents are worked in Partnership of the organization and remaining 12 (8.0%) of the respondents are worked in others.

Majority 70 (46.7%) of the respondents are worked in Sole Partnership of the organisation.

TABLE IV. TABLE INDICATING OBJECTIVES OF INVENTORY MANAGEMENT

Objectives of Inventory Management	**No of respondents**	**Percentage**
Optimum Utilization of inventory	52	34.7
Realization of stock profit	32	21.3
Reduced Cost	54	36.0
Others	12	8.0
Total	**150**	**100.0**

FIGURE II. INDICATING OBJECTIVES OF INVENTORY MANAGEMENT



INTERPRETATION:

The above table reveals that out of 150 respondents, 52 (34.7%) of the respondents are said optimum utilization of inventory objectives, 32 (21.3%) of the respondents are said realization of stock profit, 54 (36.0%) of the respondents are said reduced cost and remaining 12 (8.0%) of the respondents are said other objectives.

Hence, it could be inferred that, 54 (36.0%) of the respondents are said reduced cost.

VI. RECOMMENDATIONS

The suggestions made to the industry are; 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.

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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