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A Study on Material Management Practices and Their Impact on Organizational Development in TVs - Sivakrishna Auto Private Limited

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Abstract - This study investigates the effectiveness of material management practices at TVS - Sivakrishna Auto Private Limited, Madurai. Efficient material management plays a pivotal role in streamlining operations, minimizing wastage, reducing production delays, and enhancing overall productivity. The research explores key areas such as inventory control, procurement processes, and supply chain coordination. Data was collected through observation and internal reports to evaluate current systems and suggest improvements. The study aims to optimize material flow, reduce holding costs, and improve delivery timelines, contributing to better operational efficiency and cost-effectiveness.

The research is conducted in the context of the Indian two-wheeler industry, with a case study of TVS Motor Company and its dealer operations. Data was collected through both primary and secondary sources, including surveys and company reports. The findings reveal that efficient planning and quality control are critical components of materials management.

The study concludes that proper materials management significantly improves organizational performance, reduces operational costs, and enhances customer satisfaction. However, challenges such as technological limitations and poor inventory practices still exist.

Key Words: *Material Management, Inventory Control, Procurement, Operational Efficiency, Automobile Industry, Cost Reduction*

1. INTRODUCTION

Material management is one of the most important functions in manufacturing organizations, especially in the automobile industry where materials contribute nearly 70% of production cost. It involves planning, procurement, storage, movement, and control of materials in the most cost-effective way.

In today's competitive automobile market, effective material management ensures the right quality, right quantity, right time, right source, and right price. Proper material flow improves production continuity, reduces waste, and increases organizational productivity. In the case of TVS Sivakrishna Auto Private Limited, material management plays a major role in maintaining operational efficiency and customer satisfaction.

OBJECTIVES OF THE STUDY

The study was conducted with the following objectives:

1. To analyze material management practices in TVS Sivakrishna Auto Pvt Ltd
2. To study the impact of material management on cost control
3. To identify the role of inventory planning in reducing shortages
4. To examine the relationship between material flow and customer satisfaction
5. To study the contribution of material management to organizational development

2. LITERATURE REVIEW

Previous studies strongly highlight the importance of material management in organizational success. Siddharth Nair, Simran Singh Oberoi, and Shubham Sharma (2016) emphasized uninterrupted supply, waste reduction, and better inventory turnover, while Olusakin S. Akindipe (2016) identified raw material inefficiency as a major production challenge. Pauline Jeruto Keitany, Daniel M. Wanyoike, and Salome Richu (2016) linked inventory participation with improved efficiency and timely delivery.

Ashokkumar (2017) stressed quality control as a means to reduce defects and indirect costs, and Dr. Ngwu Chukwuemeka, Dr. Okolie Kevin C., and Dr. Ezeokonkwo John U. (2017) focused on scheduling and monitoring for productivity improvement. Linton, Klassen, and Jayaraman (2017) highlighted forecasting, supplier relations, and staff skills, whereas Khyomesh V. Patel and Chetna M. Vyas (2018) found that poor coordination causes delays and higher costs. James Monday Unam (2019) established a positive relationship between material management and manufacturing performance.

Patil et al. (2020) explained that planning, procurement, and inventory control reduce cost and improve productivity. Donyavi Sohrab and Flanagan Roger (2021), along with Elijah E. Ogbadu (2021), stressed the role of technology, supplier coordination, and quality materials in improving profitability. Eckert et al. (2022) connected inventory practices with customer satisfaction, while Santu Kar et al. (2023) identified poor delivery and weak communication as major issues affecting cost and schedule performance. Further, Rajeev

(2024) observed weak inventory practices among SMEs, and Muhammad, Razi, and Tarn (2025) highlighted random ordering, low forecasting, and poor system usage as key barriers. Overall, the literature confirms that efficient material management improves cost control, productivity, and organizational development.

3. RESEARCH METHODOLOGY

The study adopts a descriptive research design to analyze the material management practices and their impact on organizational development at TVS Sivakrishna Auto Private Limited, Madurai. The research is based on both primary and secondary data sources. Primary data were collected through structured questionnaires and direct interviews with respondents, while secondary data were gathered from company records, annual reports, journals, and relevant websites. A total sample size of 120 respondents was selected for the study using the convenience sampling technique. For data analysis and interpretation, statistical tools such as percentage analysis, correlation, chi-square, and ANOVA were applied to identify patterns, relationships, and significant differences among the study variables.

Data Collection

Both primary and secondary data sources are utilized for this study.

Primary Data

Primary data was derived from personal interviews, discussions, and questionnaires conducted among employees and managers. It provided first-hand information on costs involved, operational efficiency, and decisions about outsourcing.

Secondary Data

Secondary data is obtained from records of the company, financial reports, academic journals, textbooks, and online sources. These sources help in theoretical understanding and provide historical analysis.

Analysis:

(a) Statistical tools

The commonly used statistical tools for analysis of collected data are:

1. Percentage analysis
2. Correlation
3. Chi Square.

(b) Anova

Analysis of variance, or ANOVA, is a strong statistical technique that is used to show difference between two or more means or components through significance tests.

$$F = \frac{MST}{MSE}$$

4. DATA ANALYSIS AND FINDINGS

(1) Percentage analysis:

This method is used to compare two or more series of data, to describe the relationship or the distribution of two or more series of data. Percentage analysis test is done to find out the percentage of the response of the response of the respondent. In this tool various percentage are identified in the analysis and they are presented by the way of Bar Diagrams in order to have better understanding of the analysis.

$$\text{Percentage of respondents} = \frac{\text{Number of respondents}}{\text{Total respondents}} 100$$

(2) Correlation:

Correlation is computed into what is known as the correlation coefficient, which ranges between -1 and +1. Perfect positive correlation (a correlation co-efficient of +1) implies that as one security moves, either up or down, the other security will move in lockstep, in the same direction. Alternatively, perfect negative correlation means that if one security moves in either direction the security that is perfectly negatively correlated will move in the opposite direction. If the correlation is 0, the movements of the securities are said to have no correlation; they are completely random.

$$r = \frac{\sum XY}{\sqrt{(\sum X^2)(\sum Y^2)}}$$

(3) Chi-square:

Chi-square was done to find out one way analysis between socio demographic variable and various dimensions of the program.

$$\sum = \frac{(O_i - E_i)2}{E_i}$$

O – Observed value
E – Expected value

Findings

The findings reveal that 76.7% of the respondents are male, and 44.2% belong to the age group below 23 years. A majority of 40% hold a diploma qualification, while 70% are married, and 39.2% earn between Rs.15,000 and Rs.20,000. In terms of work profile, 42.5% have 3–5 years of experience, and 53.3% identified planning as the major material management activity. Around 34.2% emphasized material quality, while 29.2% focused on storing and controlling materials. Regarding operational effectiveness, 43.3% were satisfied with effective material usage and quality control checks, and the same proportion agreed that the system is cost-effective and efficient. Further, 38.3% identified waste reduction as a key benefit, while 45% stated that material management helps lower production cost.

5. SUGGESTIONS

1. **Strategic Planning:** In order to increase the quality and time execution of their projects, management should also include materials management in their strategic planning.

2. **Plant Disruptions:** There is a positive and significant correlation between issues in materials management, plant disruptions, and the profitability of manufacturing firms.

3. **Cost Efficiency:** An organization can achieve significant cost savings; improve production efficiency, and increase profitability and competitiveness through effective management of materials.

4. **Staff Training:** There is need to train the staff in the field of material management for the further enhancement. The cost of production or the price of raw materials should always be taken into consideration by organisations before arriving at selling price.

5. **Quality Awareness:** In order to encourage quality awareness, materials management policies should be initiated.

6. LIMITATIONS

The study is subject to certain limitations. The automobile industry requires large capital investment, which can be a major challenge for a developing country like India. In addition, due to limited knowledge and restricted scope in this field, all aspects related to material management practices could not be covered in detail. Further, the automobile industry is characterized by a high degree of technological efficiency, which may require advanced technical analysis beyond the scope of the present study.

7. CONCLUSION

From the result we confirm that Auto motives personnel will be giving more priority to planning stage which could be more effective in reducing the wastages. And the frequently occurred problem is surplus or missing of the materials. To avoid this, inventory should be managed with care. The material which was wasted more in execution stage is reinforcement Auto motives while overlapping with adjacent bars, it is unavoidable but the wastages can be used for making manholes. The material which was wasted more in transportation/receiving stage was Auto motives products. For reducing the wastage sand hooks should be used effectively and place should be made favoured for storage without any trenches nearer to the storage area.

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