A STUDY ON INVENTORY MANAGEMENT" AT MULTITEK AUTO PARTS IN DODDABALLAPUR

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Abstract :

The study on inventory management at Multitek Auto Parts addresses the critical importance of efficient inventory management practices within the automotive parts industry. Multitek Auto Parts, a prominent player in this sector, faces challenges in maintaining an optimal balance between supply and demand while minimizing costs and ensuring customer satisfaction. This research delves into the various strategies employed by Multitek Auto Parts to manage their inventory effectively, considering factors like demand forecasting, procurement methods, stock control techniques, and technology integration. The study not only explores the company's successes and best practices but also highlights potential areas for improvement. By analyzing the inventory management practices at Multitek Auto Parts, this study contributes valuable insights to both academic literature and industry professionals, shedding light on the intricacies of inventory optimization in a competitive automotive parts market.

Introduction:

The efficient management of inventory plays a pivotal role in the success and sustainability of businesses across diverse industries. As markets become increasingly competitive and customer expectations continue to evolve, the strategic handling of inventory has emerged as a crucial determinant of operational effectiveness and financial health. This study delves into the realm of inventory management, aiming to unravel the multifaceted strategies and practices that organizations employ to ensure a delicate balance between supply and demand. By examining the complexities of inventory control, demand forecasting, procurement methods, and technology integration, this research sheds light on the intricate interplay of factors that drive successful inventory management systems. As businesses navigate challenges related to cost efficiency, customer satisfaction, and streamlined operations, the insights gleaned from this study are poised to offer valuable contributions to both academic knowledge and real- world implementation, enhancing our understanding of this cornerstone of modern business practices.

CLASSIFICATION OF MATERIALS

- **Raw materials:** Are the basic material supplies in crude form to be used for production.
- Eg . jute, cotton, steel timber, rubber, coal etc.
- **Elemenents:** Are not raw in nature rather are completed part made built of stock which are gathered to make the completed products. E.g. Tires and tubes in cycle industry, stabilizers in AC and refrigerator making.
- **Tools:** Are the device used in the manufacturing operations. Eg…hammers. Spanners. Drilling, grate cutters etc.
- **spared part:** Are used for the maintaining of unit. Machines and building and forsmooth running of production schedule.
- **Consumables store:** Are the piece used for easy running of the machine,

Literature Review :

Tittle: An integrated approach to redesign inventory control plan of action for achieve property development of small and medium-sized enterprises: Insights from an empirical study in...

Author: Ganesh Narkhede, Neela Ravindra Rajhans

Year: 2022

This research article proposes an effective and proven IM strategy for SMEs to reduce inventory carrying costs and design individual replenishment policies for each product. It usesrank order

clustering (ROC) technique, Wagner–Whitin (W–W) lotsizing algorithm, and quantity discounts to form clusters of different assemblies and aggregate demand. Insights froma case study showed that the proposed integrated IM approach could save a substantial amountof total cost.

Tittle: Inventory Direction Pattern of Blade Business enterprise in India.Author: Y. Maheswari, Dr Nalla Bala Kalyan

Year: 2020

The line of work objective to analyse the listing organization procedure and to differentiate the key factors that collision inventory management practices. It is important for companies to maintaina fair inventory level, and there are various product manage techniques available. Thisarticle aims to revise the techniques utilized in the steel industry and find out methods for the operation of the inventory management process.

Tittle: Integrated Stock Governance Control FrameworkAuthor: H.R. Ganesha1, P.S. Aithal2, & P. Kirubadevi3 Year: 2020

This research analyzed the existing decision-making process and control systems related to inventory management of a select retailer, attempted to design a new framework, and theoretical the same through an experiment to valuate the relation in overall store profitability and inventory-related key performance indicators. It was recovered that most brick-and-mortar retailersin India assume that existing inventory management systems are ideal, software solutions record accurate inventory movement, involving store management team in inventory-related decision making is risky/biased, and loss of sale due to stock-outs is inevitable.

Tittle: Study of the issue of JIT In IM In The Automobile Sector In India

Author: Shreyas Thakre

Year: This paper studied the consequence of Just-In-Time (JIT) on Inventory Management in the automobile sector in India. Factors such as supplier appraisal, supplier performance, re-order point, lead time for deliveries, and JIT knowledge were considered. Soft inquiry method acting were used to gain deeper insights from the management and worker of the stiff regarding implementation and impact of JIT in inventory management. Results showed that implementation of JIT is done in silos and deeper integration needs to be in place. Proper implementation of JIT governed by ERP or DMS leads to reduced costs while managing inventory, efficient workflow and production cycles.

OBJECTIVE'S OF THE STUDY,

- To study the type of inventory techniques followed at MultiTek auto parts.
- To ascertain the economic order quantity for all the materials.
- To analysis the effect of inventory management on profit ability of the firm.

LIMITATIONS OF THE DOCUMENT

- There is not enough time in the study's duration to undertake an exhaustive investigation.
- Specific interference has been extract based on the facts at hand.
- The analysis is solely based on information from the company's financial statements, with references found and theoretical implications reached based upon the information presented.
- Degree of precision of the secondary info governs how exact the results must be to be considered.

RESEARCH METHODOLOGY:

Primary data :

- During the project's time, it became accesible throughh individual touch with business officials.

Secondary data :

- sourcing grade text books and reference books collected for statitics over
  conceptual feature.

- Artefact and magzains

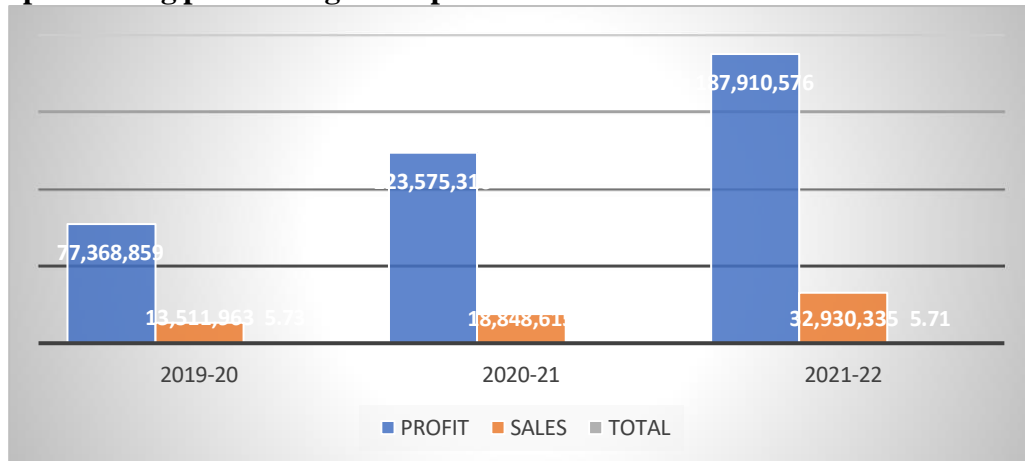- Corporation and other internet sites.

Ratio : Profit Margin

Profit margin is a popular indicator of how profitable a firm or certain commercial activity is .

PM=PROFIT/SALES

Table No - 06

YEAR	2019-20	2020-21	2021-22
PROFIT	77,368,859	12,35,75.316	18,79,10,576
SALES	13,511,963	1,88,48,615	3,29,30,335
TOTAL	5.73	6.56	5.71

Graph showing profit margin Graph No- 06

Interpretation

The company's profit climbed greatly between 2019–20 and 2020–20, and it increased even more between 2021–20 and 2022, demonstrating a strong trend in profitability over time.

The sales for 2021–2022 were 3,29,30,335 (329,303,335). Indicating a strong trend in revenue generation, the company's sales also climbed significantly from 2019–20 to 2020–20 and increased further in 2021–22.

ABC category summary :

(IN THOUSANDS)

Table No - 17

Category	%of items in inventory,	Rupees, in Category	%, of rupees in category
A	15	8583	66.34
B	30	3269	25.27
C	55	1086	8.39
Total	**100**	**12938**	**100**

Graph showing , ABC   category for selected materials, for the year 2021-22

Graph No- 11
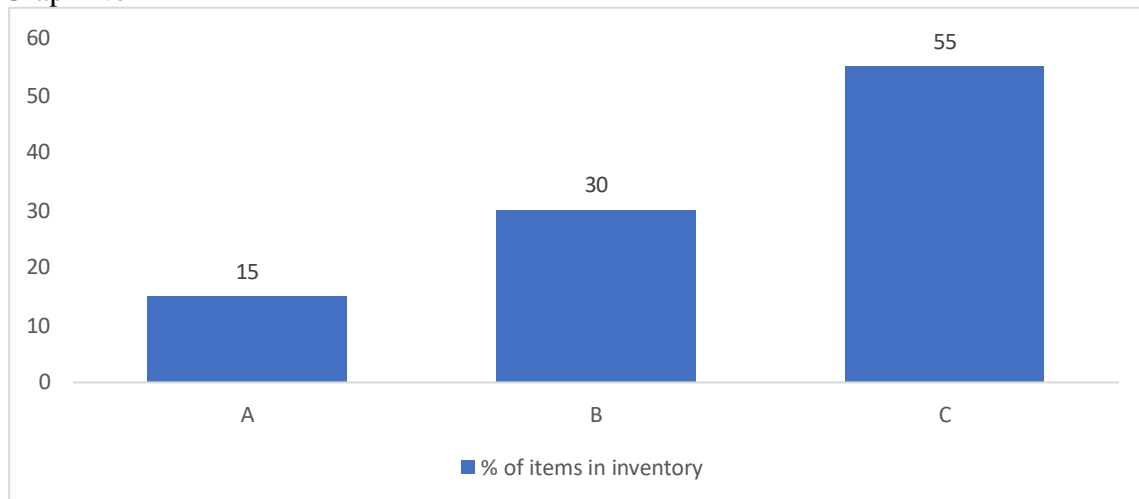
Analysis

Category A has 15% inventory with 8583 rupees, 66.34% rupees in total, 30% inventory with total, and

100% inventory with 12938 rupees.

Interpretation

Category A has the highest percentage of rupee's in the inventory, accounting for 66.34% of the absolute value. This is cod to higher-priced items in this category. Category B has the largest share, accounting for 30,% of the overall items, but has a lower average contribution of 25.27%. Category C has the highest percentage, accounting for 55% of the over all items, but has the lowest contribution at 8.39%. The total inventory value is 12938 rupees, providing insight into the overall composition

One sample Test :

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
MINUSAGE	20	145.5000	93.72272	20.95704
MAXUSAGE	20	330.0000	155.93521	34.86817

One-Sample Test

| | Test Value = 0 | | | | | | |
| | t | df | Significance | | Mean Differenc e | 95% Confidence Interval of the Difference | |
			One-Sided p	Two-Sided p		Lower	Upper
MINUSAG E	6.943	19	<.001	<.001	145.5000 0	101.6364	189.3636
MAXUSAG E	9.464	19	<.001	<.001	330.0000 0	257.0201	402.9799

ANALYSIS

From the to a higher place table we analysi that, the both the significance values are in 1sided P is less than 0.01 & in 2 sided P is less than 0.05 so we are rejecting H0 hypothesis and accepting H1 hypothesis.

INTERPRETATION

From the above table we can analysis that the we are rejecting H0 hypothesis and accepting alternative hypothesis because the value are < 0.01 & <0.05 in both one sided & two sided p so we are rejecting H0 and accepting H1.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	MAXUSAGE	330.0000	20	155.93521	34.86817
	MINSTOCK	133.2500	20	118.43580	26.48305
Pair 2	MAXUSAGE	330.0000	20	155.93521	34.86817
	MAXSTOCK	646.2500	20	492.66161	110.16248

Paired Samples Correlations

		N	Correlation	Significance	
				One-Sided p	Two-Sided p
Pair 1	MAXUSAGE & MINSTOCK	20	.491	.014	.028
Pair 2	MAXUSAGE & MAXSTOCK	20	.437	.027	.054

Paired Samples Test

		Paired Differences							Significance	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
					Lower	Upper				
Pair 1	MAXUSAGE - MINSTOCK	196.75000	142.14776	31.78521	130.22280	263.27720	6.190	19	<.001	<.001
Pair 2	MAXUSAGE - MAXSTOCK	-316.25000	447.01311	99.95517	-525.45858	-107.04142	-3.164	19	.003	.005

Paired sample test :

Paired Samples Effect Sizes

			Standardizer[a]	Point Estimate	95% Confidence Interval	
					Lower	Upper
Pair 1	MAXUSAGE - MINSTOCK	Cohen's d	142.14776	1.384	.756	1.994
		Hedges' correction	148.08442	1.329	.726	1.914
Pair 2		Cohen's d	447.01311	-.707	-1.192	-.208

MAXUSAGE - MAXSTOCK	Hedges' correction	465.682 15	-.679	-1.144	-.200

a. The denominator used in estimating the effect sizes.

Cohen's d uses the sample standard deviation of the mean difference.

Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

Findings

- Multitek uses ABC analysis to categorize materials into three categories: A, B, and C, grounded on their annual usage. Category A contains high-value items that contribute significantly to the total inventory cost, while Category C includes low-value items with a lower impact on inventory costs.

- Category A consists of 15% of the items but accounts for 68.43% of the total inventory value, indicating that a small number of high-value materials are critical for the company's operations.

- Category C, despite representing 55% of the items, contributes only 6.88% to the total inventory value. These low-value items, while numerous, have a minimal impact on inventory costs.

- Multitek calculates EOQ to know the highest orders quantity for each componente that minimizes total inventory costs by balancing ordering and carrying costs.

Suggestions :

- The re-order cost per order can have a important impacts on the EOQ calculation. It's important for the firm to review and negotiate with seller to reduce these costs where possible. Lower re-order costs can lead to a more optimal EOQ, resulting in lower overall inventory expenses.

- The carrying cost per unit of inventory can also influence the EOQ. The company should assess its storage and holdings costs to determine if any adjustments can be made to reduce carrying costs. Efficient inventories managements and space utilization can helps in minimizin these costs.

- Evaluating supplier's basedon their delivery times and LT is essential. A supplier with shorter lead times can result in lower re-order levels and a more responsive inventory system.

Conclusion :

The company's financial and inventory performance over three years (2019-20, 2020-21, and 2021-22) showed significant growth in profits and sales, with a consistent upward trend. The Capital Turnover Ratio improved, indicating better utilization of capital for sales. However, inventory distribution was not evenly distributed across categories, with Category A items accounting for a significant portion of the value and Category C items being numerous but less valuable. Balancing inventory distribution can lead to more efficient management. The EOQ analysis helped determine optimal order quantities for materials, reducing expenses and ensuring smoother production and sales processes. The growth rate from 2020-21 to 2021-22 was slightly lower than the previous year, suggesting the company may need to analyze the reasons and make necessary adjustments for sustainable growth.