

Inventory Management Practices and Supply Chain Performance at Sri Sabari Textiles

Dr. N. Amsaveni¹, Ashok Kumar S²

¹Associate professor, ²Student, Department of MBA, Sri Ramakrishna College of Arts & Science, Coimbatore, India

Abstract-- The study examines the impact of inventory management on supply chain performance at Sri Sabari Textiles, Tamil Nadu. It evaluates existing inventory control practices, forecasting accuracy, and coordination between departments. The research uses primary data from 86 employees analyzed through percentage analysis, chi-square, and correlation tests. The findings reveal that efficient inventory control and digital integration significantly enhance supply chain efficiency and customer satisfaction. In today's competitive business environment, efficient inventory management has become a critical determinant of organizational success, especially in manufacturing sectors such as textiles. This study examines the role of inventory management and its impact on supply chain performance in Sri Sabari Textiles, a company operating in a highly dynamic and demand-sensitive textile market. The research highlights how effective control of raw materials, work-in-progress, and finished goods contributes to reducing operational costs, minimizing production delays, and improving overall customer satisfaction. It also analyzes the integration of inventory management with logistics functions, emphasizing their combined influence on lead time reduction, cost optimization, and service efficiency. Through systematic evaluation of existing inventory practices, challenges, and performance outcomes, the study provides insights into how Sri Sabari Textiles can enhance operational continuity and strengthen its supply chain competitiveness. The findings underscore the need for adopting modern inventory control techniques and a more responsive supply chain framework to meet fluctuating market demands and ensure sustainable growth.

Keywords-- Inventory Management; Supply Chain Performance; Logistics; Textile Industry; Sri Sabari Textiles; Operational Efficiency; Lead Time Reduction; Stock Control; Customer Satisfaction; Cost Optimization.

I. INTRODUCTION

Effective inventory management ensures that materials are available at the right time and quantity, minimizing costs and delays. In the textile sector, this balance between supply and demand is critical due to fluctuating market needs and production cycles. Sri Sabari Textiles plays a vital role in the Tamil Nadu textile industry, where effective stock control, digitalization, and inter-department coordination influence its operational performance.

Logistics management has evolved from a support function to a strategic capability that provides a competitive advantage to organizations. It encompasses the planning, implementation, and control of the efficient flow of goods and information throughout the supply chain. In today's dynamic business environment, customers expect shorter delivery times, lower costs, and higher service quality. Meeting these expectations requires seamless integration between inventory management and logistics operations. The ultimate objective of logistics is to deliver the right product, in the right quantity, at the right place, at the right time, and at the right cost. Inventory is the central element that enables this objective. Too much inventory increases holding and warehousing costs, while too little inventory disrupts production and delays delivery. Therefore, logistics and inventory management must work together to strike a balance between service level and cost efficiency.

II. OBJECTIVES OF THE STUDY

1. To analyze the current inventory management practices at Sri Sabari Textiles.
2. To evaluate the impact of inventory management on production and supply chain efficiency.

III. RESEARCH METHODOLOGY

The research followed a descriptive and analytical design. Primary data were collected from 86 employees using structured questionnaires covering production, logistics, and inventory departments. Secondary data were sourced from company records, journals, and previous studies. Statistical tools such as Percentage Analysis, Chi-square Test, and Correlation Analysis were used to interpret the data.

IV. REVIEW OF LITERATURE

Heizer and Render (2020) highlighted that real-time tracking through ERP and automated systems significantly improves decision-making and reduces errors common in manual methods, thereby enhancing efficiency. Similarly, Gunasekaran et al. (2018) found that technological integration strengthens forecasting, procurement, and distribution, helping textile firms respond quickly to market

demand while reducing operational costs. Chakraborty and Lall (2017) reported that poor inventory practices in Indian textile SMEs lead to production delays and higher expenses, whereas proper inventory control boosts efficiency and competitiveness. Ravindran and Jayaraman (2017) showed that automated warehouses and ERP systems reduce stock discrepancies, increase accuracy, and accelerate order processing. Christopher (2016) emphasized the importance of Just-in-Time (JIT) inventory control in

lowering storage costs, reducing waste, and improving responsiveness in textile production. Slack et al. (2016) also noted that effective inventory management enhances service levels, minimizes wastage, and strengthens supply chain reliability. Additionally, Gopalakrishnan (2015) stressed the importance of accurate inventory forecasting for managing seasonal demand in textile products, which ensures continuous production, timely delivery, and greater customer satisfaction.

V. DATA ANALYSIS AND INTERPRETATION

1. Percentage analysis

a) Table showing the gender of the respondents

S.NO	Gender	Number of Responses	Percentage
1	Male	31	36.05%
2	Female	55	63.95%
3	prefer not to say	0	
	Total	86	100%

Interpretation: The table shows that 63.95% of respondents are female and 36.05% are male, indicating high female participation in the textile workforce. This highlights the inclusive employment trend at Sri Sabari Textiles.

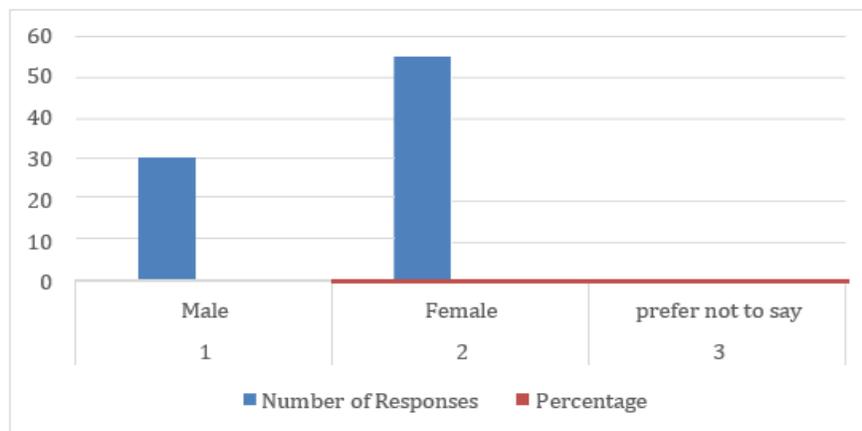


Chart showing the gender of the respondents.

b) Table showing the Age of the respondents

S.NO	Age Group	Number of Responses	Percentage
1	25–35	34	39.53%
2	36–45	30	34.88%
3	46–55	10	11.63%
4	55 above	12	13.96%
	Total	86	100%

Interpretations: Out of 86 respondents, the majority fall in the 25–35 years age group (39.53%), followed by 36–45 years (34.88%).

Smaller proportions belong to the 46–55 years (11.63%) and 55 and above (13.96%) categories.

This shows that most respondents are in the young and middle-aged groups. Such an age distribution suggests an active and energetic workforce.

It also indicates better adaptability and contribution to operational efficiency in Sri Sabari Textiles.

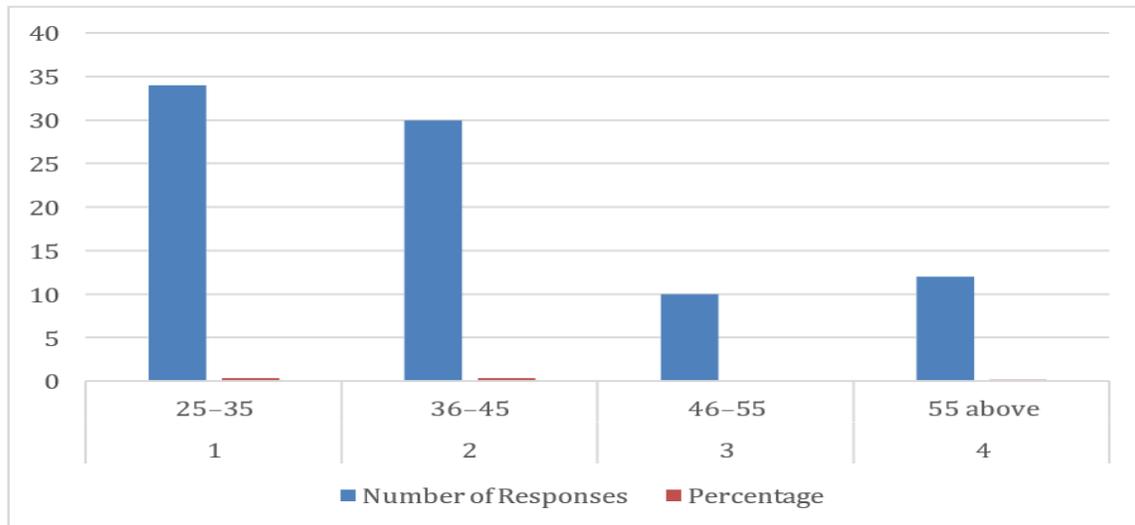


Chart showing the age of the respondents

2. Chi-square Test

Variables	Calculated x value	Table value (0.5 level)	Result
Inventory method Vs challenges	10.56	9.49	significant



Interpretation: Since the calculated χ^2 value (10.56) exceeds the table value (9.49), there is a significant relationship between the type of inventory control method

and the challenges faced. This implies that inventory techniques directly influence operational outcomes.

3. Correlation Analysis

Variables	Correlation(r)	Interpretation
Demand Forecasting & Production Efficiency	0.72	Strong positive correlation

Interpretation: The correlation coefficient ($r = 0.72$) shows a strong positive relationship between accurate demand forecasting and production efficiency. Improved forecasting helps maintain stock balance and reduces lead time.

VI. FINDINGS

- A majority of employees agree that digital tracking improves accuracy and reduces discrepancies.
- Inventory decisions significantly affect supply chain responsiveness.
- The workforce at Sri Sabari Textiles is predominantly female, indicating strong female participation and an inclusive employment structure within the organization.
- The significant Chi-square result confirms that the choice of inventory control method has a direct impact on the challenges faced in inventory management.
- The strong positive correlation between demand forecasting and production efficiency highlights that accurate forecasting plays a crucial role in optimizing production planning and improving overall supply chain performance.

VII. SUGGESTIONS

- Introduce a fully automated ERP system for real-time inventory tracking.
- Provide training programs on demand forecasting and supply coordination.
- Enhance communication between inventory, production, and logistics teams.
- Adopt modern and automated inventory control methods to reduce stock-related challenges.
- Use accurate, data-based forecasting to improve production efficiency and minimize delays.

VIII. CONCLUSION

The study concludes that effective inventory management is crucial for the smooth functioning of supply chain operations. Sri Sabari Textiles maintains fairly good control mechanisms, but technological and training improvements are required for better efficiency. Integration of automation and analytical tools can ensure cost reduction, timely deliveries, and sustainable competitiveness in the textile market.

REFERENCES

- [1] Dr. T.Beena & Dr.N.Amsaveni ,Influence of Online Shopping Determinants on Customer Satisfaction, SHODHSAMHITA, 2277-7067, Volume VIII, Issue 14, 7
- [2] Dr.N.Amsaveni, A study on Investigation on Logistics Management towards Malar Brand Rice at Coimbatore, Humanities Aand Social Science Studies, ISSN 2319-829X, Volume 13, Issue 02 No 33,159-162
- [3] Dr.N.Amsaveni, A study on Supply chain Management of Blue Dart Express Limited with special reference to Salem district, Journal of Indian School of Political Economy, ISSN: 0971-0396, Volume 36, Issue 03, 75-79
- [4] Dr.N.Amsaveni, A study on Export – Import Trade Documentation and Optimising the supply chain efficiency for export operations at bimetal bearing limited, Journal of the Oriental Institute, ISSN: 0030-5324, Volume 72, Issue 05, No.18, 79-86
- [5] Dr. Jayashree R. (2025). A Study on Customer Satisfaction Towards Freight Forwarding at Sea Sand Cargo, International Journal of Creative Research Thoughts (IJCRT), ISSN: 2320-2882, Volume 13, Issue 3, March 2025, Page No: 1948–1956.

LOGISTICS

- [6] DIVYA, D., & SANTHANAKRISHNAN, D. (2024). ARTIFICIAL INTELLIGENCE IN SUSTAINABLE SUPPLY CHAIN MANAGEMENT: A COMPREHENSIVE REVIEW.
- [7] Dr. D Divya, Nithish.P, Sankar M P (2023), A Study on Process Management Based on Supply Chain at Cri Pumps, Shodhsamhita, Volume- VIII, Issue 15, 2022-2023,124- 131
- [8] Dr. D Divya, Nishanth G (2023), A Study of Inventory Management System In Tool craft Engineering Company At Hosur, ANVESAK, : 0378 – 4568, Vol. 52, No.2 (8) July – December 2023, 1-9



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347-6435(Online) Volume 15, Issue 02, February 2026)

- [9] Dr D Santhanakrishnan, (2021) "Choice Criterion of 4pl (Forth Party Logistics) Services in India, ANVESAK UGC Care Group 1 Journal, 0378 – 4568, 77-80
- [10] Dr D Santhanakrishnan, (2019) "A Study on the Survey of Third Party Logistics Services Companies In Tamilnadu", International Journal of Multidisciplinary Research and Modern Education, VOL 5 ,154
- [11] Santhanakrishnan, D. D. (2019). A Study on the Survey of Third Party Logistics Services Companies In Tamilnadu. International Journal of Multidisciplinary Research and Modern Education, 5, 154.
- [12] Santhanakrishnan, D., & Balakrishnan, H. (2016). Selection criteria of third party logistics services. International Journal of Interdisciplinary Research in Arts and Humanities, 1(1), 91-94