

PREDICTIVE ANALYTICS PRACTICES IN THE HANDLOOM SECTOR: AN ORGANIZATIONAL PERSPECTIVE FROM TRIVANDRUM CITY

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Abstract : The analysis of historical organizational data plays an important role in understanding business performance and supporting informed decision-making. The handloom sector operates in a competitive and changing business environment where fluctuations in market demand and consumer preferences can influence organizational sales performance. This study analyzes historical sales trends in the handloom sector with the objective of identifying patterns and changes in organizational sales performance and generating insights that can support future-oriented decision-making and strategic planning. A descriptive research design was adopted for the study, and the analysis was based entirely on secondary data collected from relevant organizational records and published sources. Historical sales data covering the period from 2019–20 to 2024–25 were analyzed using Trend Analysis, taking 2019–20 as the base year. The analysis reveals considerable fluctuations in sales performance during the study period, including a significant decline in 2021–22, followed by a substantial recovery in 2022–23 and a subsequent decline with a slight improvement in 2024–25. The findings indicate that systematic analysis of historical sales trends can provide useful insights into changes in organizational performance and assist management in sales planning, strategic decision-making, and future-oriented organizational development. The study concludes that effective utilization of historical sales information can support better planning and contribute to sustainable performance in the handloom sector.

INTRODUCTION

The analysis of historical organizational data plays an important role in understanding business performance and supporting managerial decision-making. Organizations generate large amounts of data through their day-to-day activities, including sales, production, finance, inventory, and other operational functions. Systematic analysis of such historical data enables organizations to identify changes, patterns, growth, and fluctuations in performance over time. Trend analysis is a useful statistical technique for examining the direction of movement of a variable over a specific period and provides a simple and effective basis for understanding past organizational performance.

Sales performance is one of the key indicators of the financial and operational health of an organization. Changes in sales may reflect variations in market demand, consumer preferences, competition, product characteristics, economic conditions, and organizational strategies. Therefore, examining historical sales data can help organizations understand periods of growth and decline and identify the overall direction of their sales performance. Such information can assist management in making appropriate decisions relating to production, marketing, inventory, resource allocation, and future business planning.

The handloom sector occupies an important position in the textile industry and is associated with traditional skills, cultural heritage, employment generation, and the production of a wide variety of textile products. At the same time, handloom organizations operate in a competitive environment where they may face changing consumer preferences, competition from powerloom and mechanized textile products, fluctuations in demand, and changing market conditions. These factors can influence the sales performance of organizations operating in the sector. Hence, systematic examination of historical sales data can provide useful insights into the performance and changing business conditions of handloom organizations.

Analyzing sales trends over several years allows an organization to identify whether its sales performance is improving, declining, or fluctuating. It also provides a basis for comparing the performance of different years with a selected base year. By identifying significant variations in sales, management can obtain a clearer understanding of past performance and use the information as a foundation for future-oriented planning. Trend analysis therefore serves not only as a method of describing historical performance but also as a useful tool for supporting informed organizational decision-making.

In this context, the present study focuses on the analysis of historical sales trends in the handloom sector. The study examines the movement of sales over the period from 2019–20 to 2024–25, taking 2019–20 as the base year. Trend Analysis is employed to determine the changes in sales performance over the selected period and to identify significant increases, decreases, and fluctuations. The study seeks to generate meaningful insights from historical sales performance that can assist in future-oriented decision-making, strategic planning, and sustainable organizational development in the handloom sector.

REVIEW OF LITERATURE

Swaminathan and Venkitasubramony (2024) conducted a systematic review of demand forecasting techniques used in the fashion industry. The study reviewed 75 research papers and classified forecasting approaches into qualitative, statistical, artificial intelligence, and hybrid techniques. The authors highlighted the increasing use of artificial intelligence and machine learning for fashion-demand forecasting and identified factors such as product characteristics, seasonality, consumer preferences, and data availability as important considerations in forecasting. The study demonstrates the relevance of predictive analytics for organizations operating in textile- and fashion-related markets.

Jebbor, Benmamoun and Hachimi (2024) examined the use of machine learning for forecasting supply-chain disruptions in the textile industry. Their study demonstrated how machine-learning classifiers can be applied to supply-chain data to anticipate potential disruptions. The authors emphasized the importance of developing models according to the specific characteristics of the business domain. This study indicates that predictive analytics can support textile organizations not only in demand forecasting but also in identifying and managing operational and supply-chain risks.

Anitha and Neelakandan (2025) reviewed demand-forecasting models for new fashion products and emphasized the particular difficulties associated with predicting demand when historical information is limited. Their review examined different forecasting approaches and highlighted the importance of selecting appropriate predictive models according to the characteristics of new products and available data. The study provides a useful foundation for understanding how predictive analytics can support organizations in dealing with uncertainty in textile and fashion markets.

Horani et al. (2023) conducted a systematic literature review on the factors influencing business analytics adoption at the organizational level. The study emphasized that the adoption of analytics is influenced by technological, organizational, and environmental considerations. The findings are relevant to the present study because the successful use of predictive analytics depends not only on the availability of analytical techniques but also on organizational readiness, resources, skills, and managerial support.

Architha, Murthy, Sonnad, and Sugandi (2022) examined the temporal variations in the arrivals and prices of silk cocoons in selected markets of Karnataka using secondary data covering the period from 2009–10 to 2018–19. The study employed trend analysis along with other statistical approaches to examine changes in market arrivals and prices over time. The findings highlighted significant temporal variations and provided insights into the movement of prices and market arrivals across the study period. The study demonstrates the usefulness of analyzing historical data to identify trends and fluctuations in textile-related markets. This study is relevant to the present research because it establishes the importance of Trend Analysis and secondary historical data in understanding changes in textile-sector performance and provides a methodological basis for analyzing historical sales trends in the handloom sector.

RESEARCH METHODOLOGY

3.1 Objective of The Study

- To analyze historical trends and patterns in organizational data in the handloom sector, examine the factors influencing organizational performance, and generate data-driven insights to support future-oriented decision-making, strategic planning, and sustainable organizational development.

3.2 Statement of The Problem

The handloom sector operates in a dynamic and competitive business environment where changes in market demand, consumer preferences, competition, and other market conditions can influence organizational sales performance. Organizations generate and maintain historical sales data, which can provide valuable information about their past performance. However, without systematic analysis of historical data, significant trends, patterns, increases, decreases, and fluctuations in sales may not be clearly identified. This can make it difficult for organizations to understand changes in their sales performance and use past information effectively for future planning and decision-making.

Therefore, there is a need to systematically analyze historical sales data to identify the direction and patterns of organizational sales performance in the handloom sector. This study focuses on analyzing historical sales trends in the handloom sector for the period from 2019–20 to 2024–25 using Trend Analysis, with the aim of generating meaningful insights from past sales performance that can support future-oriented decision-making, strategic planning, and sustainable organizational development.

3.3 Scope of The Study

The scope of the study is confined to the analysis of historical organizational data in the handloom sector with the purpose of identifying significant trends, patterns, and changes in selected organizational variables over a specified period. The study focuses on understanding the direction and movement of the selected variables through **Trend Analysis** and interpreting the insights derived from the historical data. The findings of the study are intended to provide a better understanding of past organizational performance and support future-oriented decision-making, strategic planning, and sustainable development in the handloom sector. The study is limited to the secondary data available for the selected organization and study period and does not involve primary data collection from employees, customers, or other stakeholders.

3.4 Research Design

The study adopts a descriptive research design to analyze historical trends and patterns in organizational data within the handloom sector. The design enables the systematic examination of historical data and helps in understanding the movement and changes in organizational performance over the selected study period.

3.5 Source of Data Collection

The study is based entirely on secondary data. The data are collected from relevant organizational records, annual reports, official publications, government reports, and other reliable published sources related to the handloom sector.

3.6 Period of the Study

The study analyzes historical organizational data for the period from 2019–20 to 2024–25. This period is selected to examine the changes and movement in sales performance over time.

3.7 Sampling Technique

Sampling technique is not applicable to the study, as the research is based entirely on secondary data and does not involve the selection of respondents or primary data sources.

3.8 Sample Unit

Sample unit is not applicable, as the study does not involve individual respondents, employees, customers, or other primary data units. The unit of analysis consists of the selected historical organizational data.

3.9 Sample Size

Sample size is not applicable because the study does not involve primary data collection or respondent-based sampling. The analysis covers the available organizational data for the selected study period.

3.10 Tools Used for Data Analysis

- **Trend Analysis** – to identify historical patterns and changes in selected organizational indicators over a period of time.

4. DATA ANALYSIS AND INTERPRETATION

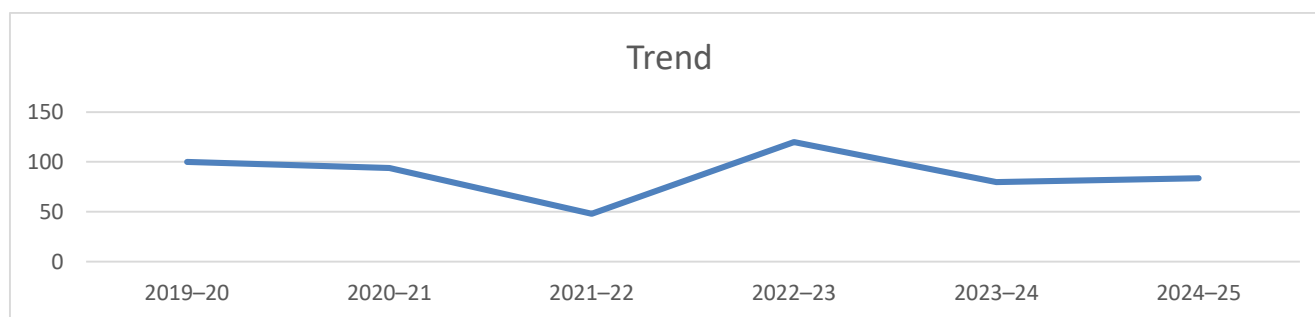
Trend Analysis

Formula: $\text{Trend \%} = (\text{Current Year Sales} / \text{Base Year Sales}) \times 100$

4.1 Table Showing Trend Analysis of Sales for the Period 2019–20 to 2024–25

Sl.No	Year	Sales (in Lakhs)	Trend %
1.	2019–20	2,082.05	100
2.	2020–21	1,954.57	93.88
3.	2021–22	999.99	48
4.	2022–23	2,499.44	120
5.	2023–24	1,660.59	79.75
6.	2024–25	1,738.50	83.50

4.1 Chart showing trend analysis for sales



Findings

- The analysis shows that the organization's sales experienced considerable fluctuations during the study period from 2019–20 to 2024–25.
- The base year 2019–20 recorded sales of ₹2,082.05 lakhs, with a trend percentage of 100%.
- Sales declined moderately in 2020–21 to ₹1,954.57 lakhs, resulting in a trend percentage of 93.88% compared with the base year.
- A significant decline was observed in 2021–22, when sales fell to ₹999.99 lakhs, representing the lowest trend percentage of 48% during the study period.
- The organization experienced a strong recovery in 2022–23, when sales increased to ₹2,499.44 lakhs, which was the highest sales recorded during the study period. The corresponding trend percentage reached 120%.
- Sales declined again in 2023–24, reaching ₹1,660.59 lakhs, with a trend percentage of 79.75%.
- In 2024–25, sales showed a slight improvement to ₹1,738.50 lakhs, increasing the trend percentage to 83.50%.
- Overall, the trend indicates that the organization did not maintain a consistent upward or downward movement in sales. Instead, sales showed significant year-to-year fluctuations, indicating variations in organizational performance over the study period.

Suggestions

- The organization should conduct a detailed review of the reasons behind the sharp decline in sales during 2021–22 and develop appropriate measures to prevent similar declines in the future.
- The organization should identify and replicate the successful strategies or market conditions associated with the strong sales performance in 2022–23.
- Greater emphasis should be placed on market analysis and demand forecasting to anticipate changes in customer demand and market conditions.
- The organization can strengthen its sales performance by exploring new markets, expanding its customer base, and improving marketing and promotional activities.
- The organization should make greater use of historical sales trends for future planning, budgeting, production planning, and inventory management.
- Adoption of digital marketing and online sales channels can help handloom organizations reach wider markets and attract new customer segments.
- The organization should continuously monitor sales performance and compare actual results with historical trends to identify early signs of declining sales and take corrective measures.
- Greater focus should be given to product diversification, design innovation, and changing consumer preferences to improve the competitiveness of handloom products.

Conclusion

The study analyzed the historical sales trends of the organization in the handloom sector for the period from 2019–20 to 2024–25 using Trend Analysis. The findings reveal considerable fluctuations in sales during the study period, with the lowest performance recorded in 2021–22 and the highest sales recorded in 2022–23. Although sales showed a slight recovery in 2024–25, the trend percentage remained below the base-year level. The analysis demonstrates that historical sales data can provide useful insights into changes in organizational performance and can assist management in identifying periods of growth and decline. Therefore, systematic monitoring of sales trends, supported by effective market analysis, demand forecasting, marketing strategies, and strategic planning, can help the organization improve its future performance and achieve more sustainable growth in the handloom sector.

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