WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

DATA ANALYSIS – WOMEN'S CLOTHING MARKET – INDIA

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A B S T R A C T :

This research paper explores the dynamic landscape of the women's clothing market in India using extensive data-driven analysis. With a focus on five key categories - Saree, Suits, Indian Wedding Wear, Casuals, and Maxi & Skirts - the study offers actionable insights through interactive Power BI dashboards. Data was collected from diverse online and offline sources to evaluate regional trends, seasonal preferences, customer behavior, pricing, and market share. The research identifies top-performing states, leading manufacturers, and regional clothing styles. By leveraging visual analytics, the study provides granular insights into purchase patterns and helps retailers optimize inventory, forecast demand, and boost profits. This paper aims to support businesses in making informed, strategic stocking decisions while highlighting the cultural and commercial richness of India's women's fashion industry.

Keywords: Market Trends, Pricing, Demand, Profitability, Business Optimization

INTRODUCTION

The Indian women's apparel market is a culturally diverse and dynamic segment that depicts a mix of changing fashion sensibilities and traditional values. With women becoming major retail buyers, they are driven by culture, socio-economic conditions, and growing global exposure (N. Sharma 2019). The sector keeps expanding at a brisk pace, influenced by regional heterogeneity and digitization.

Domestic region-wise preferences impact demand strongly throughout India - sarees are predominant in Tamil Nadu and West Bengal, and suits are more in fashion in Punjab and Haryana. Casuals and fusion wear are popular in urban areas because of comfort and lifestyle changes (V. Kapoor 2019). The diversity fuels a multi-segmented market supporting both ethnic pride and universal appeal (S. Chaudhary 2019).

Online shopping has had a revolutionary impact. Social media and e-commerce increasingly influence how consumers fin d and choose fashion products (L. Kutsenkova 2017). Virtual catalogues and influencer marketing have improved the shopping experience, particularly for younger generations (S. Nair 2021). Retailers also employ data-driven insights to tailor offerings and predict trends (R. Niemtzow 2021).

The pandemic also sped up demand for comfort-driven categories like maxi dresses and casual wear, while festive and traditional wear like sarees and wedding wear kept their cultural significance on special occasions (T. Gupta 2022). This binary reflects a movement towards functional yet significant fashion choices (R. Kumar 2020).

This study is based on five fundamental categories of clothing: Sarees, Suits, Indian Wedding Wear, Casuals, and Maxi & Skirts. The information was self-generated from various online platforms, local retailers, and brand listings to record state-wise trends, price segments, and seasonal trends (A. Jain 2021).

The insights are further amplified through interactive Power BI dashboards that display crucial insights in the form of visual narratives. These dashboards give close-up views of pricing, regional demand, customer behavior, and seasonal spikes—enabling retailers to make informed stocking and marketing decisions (M. Patel 2021). For example, sarees register more sales during Durga Puja in the east and suits during Diwali in the north (P. Sharma year). By seeing this data in pictures, companies can optimize inventory and enhance profitability (D. Verma 2022).

This paper seeks to take raw market data and turn it into actionable facts, providing a model for retailers and manufacturers to understand and react to the varied Indian women's apparel market.

LITERATURE REVIEW

The Indian women's apparel market has attracted considerable scholarly attention because of its cultural diversity, economic size, and changing consumer tastes. American women's fashion trends have shaped urban Indian tastes, especially in reconciling tradition with foreign influences (M. Alexander 2005). Ethnic wear like sarees and suits remain popular in India because of strong cultural heritage (M. Neal 1994). Fast fashion has reshaped global fashion retailing. Fast fashion has reshaped consumer buying patterns as well in India such that rapid fashion turnaround, particularly in the area of casuals and fest wears, is desired by customers (A. Fairhurst 2010). It is increased by manifold scale through regional festive times and the peak wedding season demand (S. Chaudhary 2019). Consumer psychology is significantly important when purchasing clothing. Clothing is an indicator of individual identity, comfort, and belonging (D. Chattaram 2009). In India, this is particularly evident when it comes to decisions surrounding wedding attire and cultural dress, which are imbued with symbolic meaning (R. Mehta 2020).

Price still remains a determining factor for women consumers in India. Women customers tend to balance the price and perceived value prior to purchase (M. Damhorst 2008). Indian retailers are thus required to segment the goods thoroughly to cater to the premium and value-conscious shoppers (T. Gupta 2022). E-commerce has introduced new dimensions to shopping behavior. Online platforms like Amazon and Flipkart, supported by influencer marketing and user-generated content, have facilitated faster purchase decisions and greater access to fashion products (L. Kutsenkova 2017). Indian women, especially millennials, are driven by digital media and online product suggestions (S. Nair 2021). Retail analytics has accelerated in India, particularly with tools facilitated by AI. Forecasting and demand planning are now supported by machine learning models enhancing inventory management (R. Niemtzow 2021). Retailers are shifting towards decision-making based on data, particularly in metro and tier-1 cities (P. Sharma year).

Geography and cultural norms-based consumer segmentation has also been investigated. Fashion preferences differ widely across regions in India (R. Kumar 2020). Sarees, for instance, are more common in eastern states, whereas suits are more common in northern states (V. Kapoor 2019). It is important to understand these differences for successful merchandising. These regional distinctions enable retailers to tailor their inventory and marketing strategies to match localized customer preferences. Festivals are prime drivers of retail in India. Fashion sales peak during Diwali, Eid, and the wedding season, prompting retailers to time their supply chains suitably (S. Chaudhary 2019). Seasonal patterns in demand influence customer behavior all year round (A. Jain 2021). Dashboards and technology are being utilized to visualize and respond to retail data. Software such as Power BI and Tableau are used to analyze buying behavior, peak hours of demand, and sales performance (M. Patel 2021). Dashboards are being more and more widely taken up by Indian retailers to monitor customer behavior and enhance profitability (D. Verma 2022).

Overall, India's women's wear market is being moulded by a mix of cultural, technological, and economic forces. As a whole, the literature emphasizes the role of regional tastes, price sensitivity, digital reach, and data-driven approaches in profiling and forecasting people's purchase choices.

METHODOLOGY

This study follows a structured, data-driven approach to analyze the Indian women's clothing market. The methodology involves data collection from multiple sources, trend analysis, visualization through Power BI dashboards, and strategic business insights. The goal is to help businesses make informed decisions about inventory management, pricing, and market positioning.

Dataset Collection

To guarantee accuracy and dependability, this study gathered datasets via a combination of independent research, market surveys, and direct manufacturer consultations. E-commerce platforms, industry reports, and market research publications were the main sources of the data, and cross-verification was done to confirm the results.
Furthermore, a market survey assisted in capturing current consumer preferences and purchasing patterns, and regional manufacturers and wholesalers offered insights into product demand, pricing trends, and material preferences. Prior to analysis, the gathered data was painstakingly cleaned and processed to guarantee completeness.

Type of Clothes

- Sarees: Information was gathered from wholesale markets, internet merchants, and local manufacturers. To learn about consumer preferences and pricing trends, data on fabric types - such as silk, cotton, and synthetic sarees - was examined (Neal, M., and Jackson, M. 1994).
- Suits: Information on popular fabric selections, popular designs, and price variations across various markets was gleaned from sales data from both physical retail locations and e-commerce platforms (D. Chattaram 2009).
- Indian Wedding Wear: Seasonal factors, including wedding peaks, cultural influences, and changing designer preferences, were used to study variations in demand. (N. Sharma 2019).
- Casuals: A thorough trend analysis of everyday wear, including summer collections, office wear, and outfits with a western influence, was carried out. The study looked at how consumer choices are influenced by comfort, style, and affordability (Fairhurst, A., and V. Bhardwaj 2010).
- Maxi & Skirts: Information about consumer preferences, buying trends, and the desire for fusion, party, and comfortable clothing was acquired. Additionally, the impact of occasion-based and seasonal trends was evaluated (Damhorst, M. L., and Kozar, J. M. 2008).

This dataset offers a thorough and accurate picture of the Indian women's clothing market by combining information from manufacturers, internet sources, and direct market research. This helps companies make well-informed decisions about inventory and sales. In order to derive significant insights from the Indian women's apparel market, this study uses a data-driven analytical approach. The approach focuses on using Power BI dashboards to guide business strategies, optimize inventory, and visualize trends. To guarantee thorough market analysis, the procedure adheres to a defined workflow.

Analysis of Trend and Exploratory Data Analysis

In order to recognize important patterns and relationships in the dataset, the first step entails performing Exploratory Data Analysis with statistical tools. Among these are:

- Descriptive statistics that provide an overview of sales performance for various clothing categories.
- Trend analysis to pinpoint regional demand variances, new fashion trends, and seasonal fluctuations.
- Segmenting consumers according to their purchasing patterns, which aids in classifying them according to their tastes, financial capabilities, and geographic influences (M. Alexander 2005).

Data Visualization and Dashboard Development

- Interactive and real-time dashboards that convert unstructured data into aesthetically pleasing insights were made using Power BI. The dashboard is developed using a methodical process:
- Data modeling is the process of organizing datasets to facilitate effective visualization and querying.
- Dynamic Visualizations: Highlighting important trends with line graphs, heatmaps, and bar charts.
- Geo-Analytics: Using demand mapping at the state and city levels to support regional market planning.
- Time-series forecasting: Using past trends, projects future demand for various clothing categories (R. Niemtzow 2021).

DASHBOARDS

Power BI dashboards have been used in this study to create visual and interactive representations of large volumes of retail data. These dashboards present clear, concise, and real-time insights that allow businesses to identify demand patterns, pricing behaviors, festival-based spikes, and regional preferences across India's women's clothing market. This structured visualization allows retailers to better interpret the complex clothing ecosystem and make proactive decisions related to inventory, marketing, and sales optimization.

Saree Dashboards

Saree Dashboard: Presents an interactive overview of saree sales, with filters for fabric type, region, and price range. It visually identifies demand surges in states like Uttar Pradesh and Tamil Nadu.

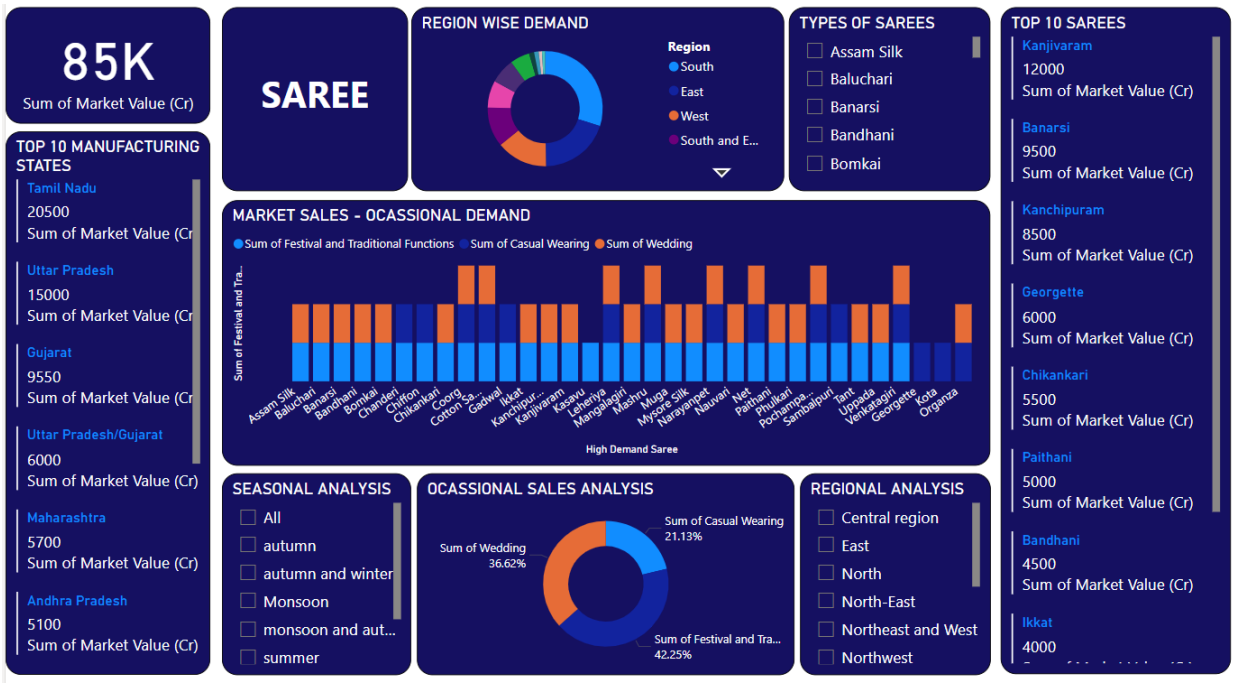

Figure 1. Saree Dashboard

Suits Dashboards

Suits Dashboard: Displays key indicators including sales volume by fabric type, seasonality, and consumer segment. North Indian states dominate in this dashboard. It also highlights peak demand during wedding and festive seasons, especially in Punjab and Delhi. palettes.

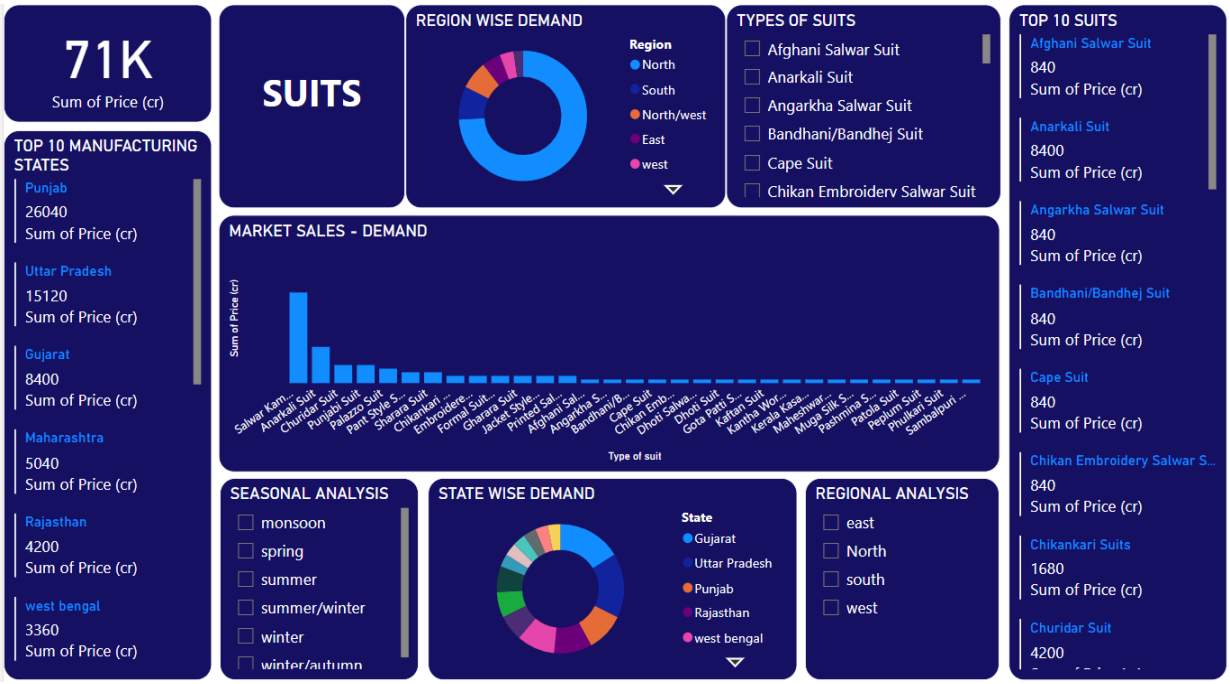

Figure 2. Suits Dashboard

Wedding & Traditional Dashboards

Wedding & Traditional Dashboard: Offers a comprehensive view of bridal and ceremonial wear demand, categorized by price, city tier, and category.

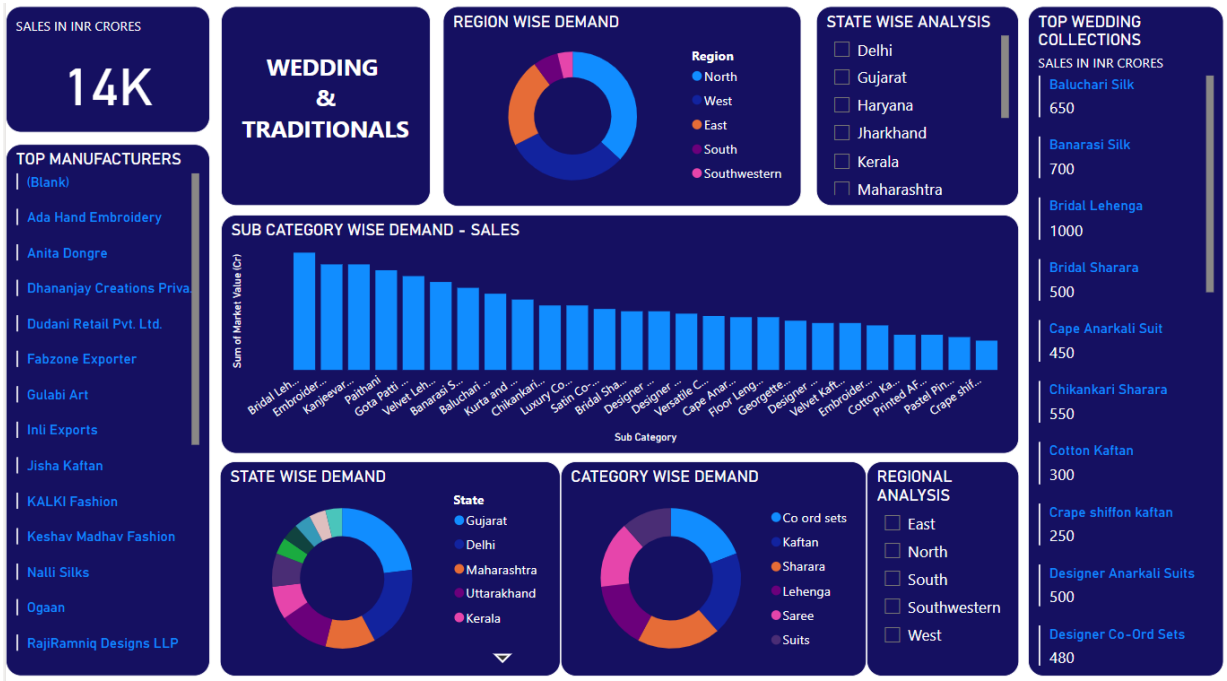

Figure 3. Wedding & Traditional Dashboard

Tops (Casuals) Dashboards

Tops (Casuals) Dashboard: Focuses on casual top sales influenced by younger consumers in metro cities, including data on style preference and purchase channel.

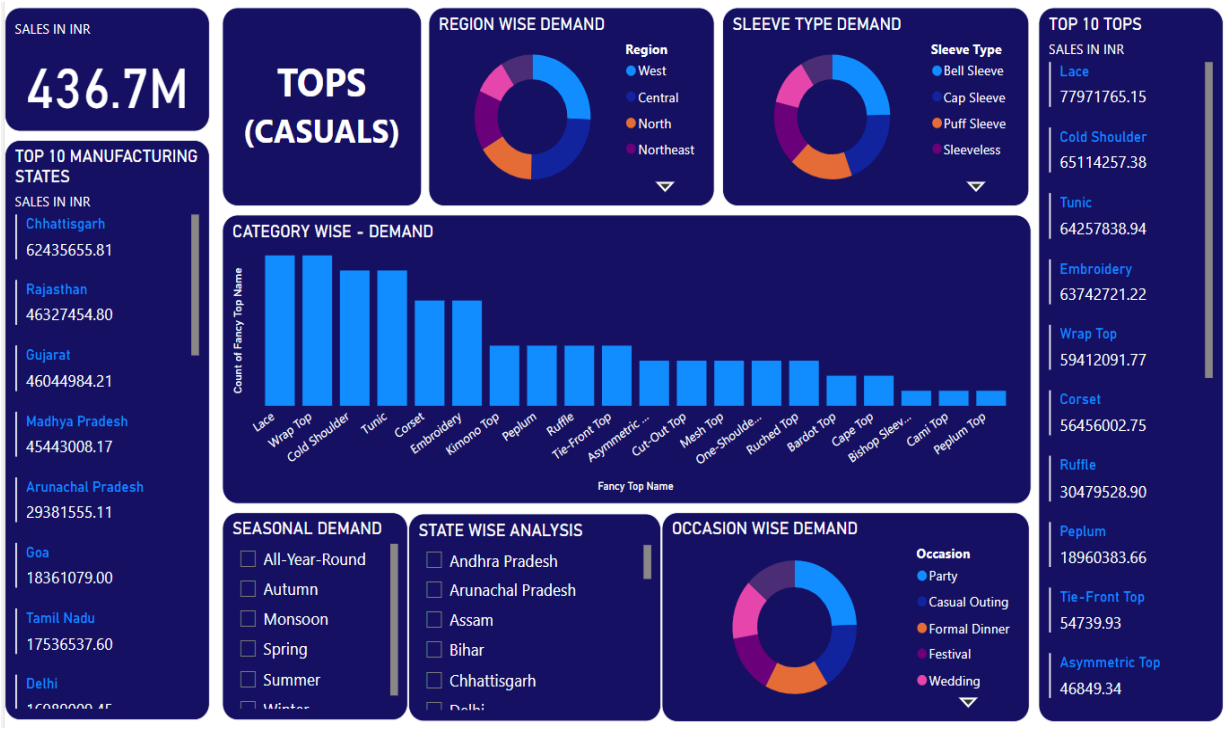

Figure 4. Tops (Casuals) Dashboard

Maxi Dresses Dashboards

Maxi Dresses Dashboard: Provides a holistic view of consumer interest in maxi dresses and skirts, particularly among the urban youth. It highlights seasonal preferences, trending colors, and the growing popularity of Indo-western fusion styles and fashions.

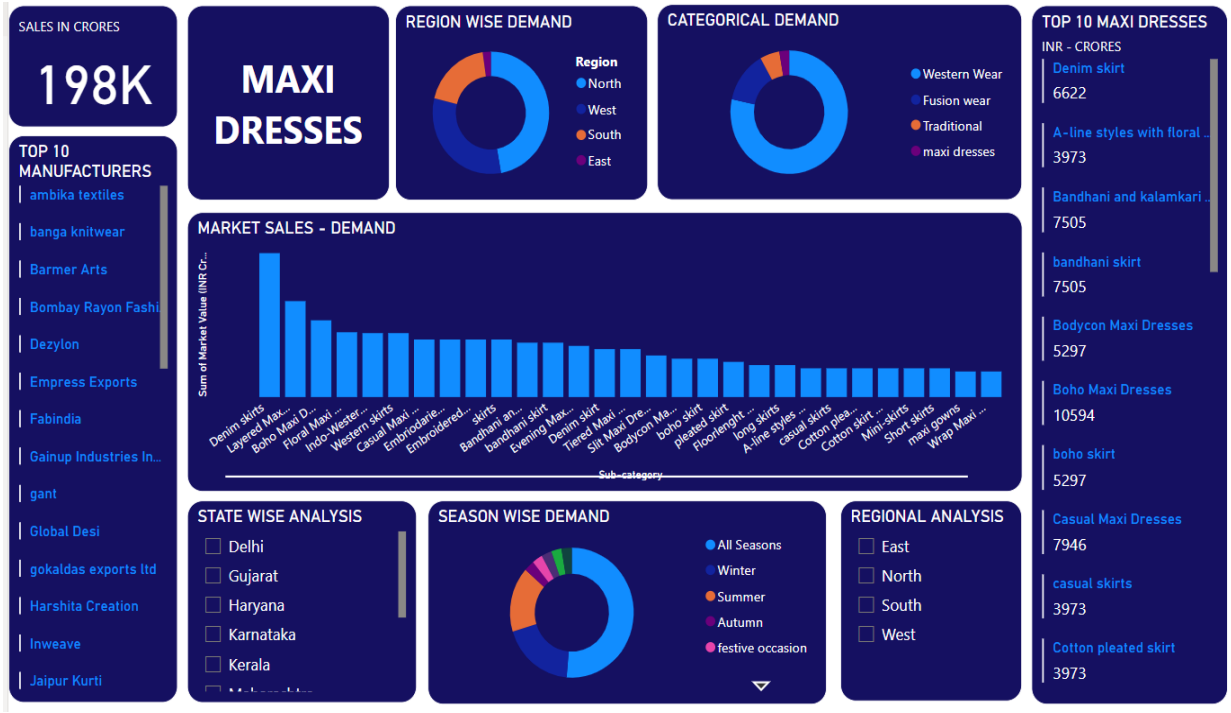

Figure 5. Maxi Dresses Dashboard

ANALYSIS & DISCUSSION

India's women's wear market was substantially analyzed using Power BI-built visual dashboards with the development and interpretation of such visualizations. The visualizations offered an on-the-spot, detailed overview of various dimensions—from clothing types and regional taste patterns to season variations and pricing levels. With raw data turned into interactive visualization, the study enriched not just the depth of analysis but also facilitated a handy decision-support structure for retailers.

Dashboard Based Insights

Every dashboard, being for particular garment categories - Sarees, Suits, Indian Wedding Wear, Casuals, and Maxi & Skirts - showed unique market trends:

- Sarees Dashboard: There was intense demand in eastern and southern states like West Bengal and Tamil Nadu, particularly for Durga Puja and Pongal. Merchants in these states can match stock levels with the festival calendars to avail maximum profit.
- Suits Dashboard: Northern parts such as Punjab and Delhi displayed highest interest in suits, especially wedding seasons. Trends reflect a pastel color trend in summer and bright colors in winter, respectively.
- Indian Wedding Wear Dashboard: Demand curve was at its highest during November to February, which coincides with traditional Indian wedding season. Dashboard insights revealed that customers favor heavier, embroidered, and high-margin items during this time.
- Casuals Dashboard: Tier-1 and Tier-2 cities registered growth trends for comfort and utility-led casual wear. Sales registered surges during online festive sales, reflecting the effects of e-commerce campaigns.
- Maxi & Skirts Dashboard: Western wear such as maxi dresses and skirts registered increased demand among younger women, especially in metro cities. Summer months reported higher demand, reflecting seasonality influence.

The analysis of India's women's clothing market was significantly enhanced through the development and interpretation of visual dashboards built using Power BI. These dashboards provided a real-time, granular view of multiple dimensions - ranging from clothing type and regional preferences to seasonal shifts and pricing strategies.

By transforming raw data into interactive visuals, the study not only deepened our analytical reach but also provided a practical decision-support framework for retailers.

Market Trends Identified

- State-wise Preference: The dashboards allowed for tracing particular clothes preferences to their geographical zones, enabling clearer cultural influence on purchasing behavior.
- Price Sensitivity: Dashboards also tracked price distribution and its impact on demand. Mid-range priced products had the most engagement, indicating a requirement for focused pricing initiatives.
- Color and Style Trends: By identifying color trends and trending patterns, companies can project future style needs and customize collections as a result.
- Seasonality and Festive Demand: Clear seasonal spikes - during Diwali, Eid, and wedding months - were highlighted, reinforcing the importance of timely stock preparation.

Business Optimization Techniques

Transformation of analytics into actionable business strategies is the last step in methodology. The dashboards' information enables the following:

Inventory Optimization: Matching supply with demand projections helps prevent overstocking and stockouts.

Price Elasticity Analysis: Knowing how pricing affects customer preferences and sales volume.

Retailer Decision-Making: Helping companies choose the best product mix, regional marketing tactics, and seasonal stocking plans.

Broader Impact

- These visual insights bridge the gap between data complexity and decision-making. Dashboards make it easier for even non-technical stakeholders to understand consumer patterns, making them a valuable tool across all levels of retail operations. They also facilitate continuous monitoring, enabling proactive rather than reactive management strategies.
- In addition, these dashboards illuminate the ever-changing fashion trends throughout the country, enabling businesses to capture emerging styles, preferred textures, trending shapes, and anticipated best-sellers. This means retailers are no longer only responding to the market but are proactively looking to shape their offering ahead of time, thus gaining a competitive edge.
- Also, the cross-functional collaboration related to inventory and marketing is improved with the use of such dashboards. Real-time access to demand trends allows merchandisers to plan more efficient stock rotations. This alignment leads to optimized operations, reduced wastage, and an overall increase in customer satisfaction by ensuring the right products are available at the right time.

CONCLUSION

The data analysis in this study provides a detailed view of the Indian women's clothing market. By combining region-wise preferences, pricing dynamics, cultural significance and seasonal demand we have captured key market behaviors that retailers need to know. Moving from general observations to dashboard driven insights enabled us to present complex data in a business friendly and decision-oriented manner.

We created interactive dashboards for each clothing type - Sarees, Suits, Indian Wedding Wear, Casuals, Maxi & Skirts - to present complex data in a business friendly and decision-oriented manner. These dashboards not only showed regional and seasonal trends but also enabled us to monitor market shifts, customer behavior and product performance in real time. This helps retailers to take inventory and marketing decisions based on facts.

Using Power BI to visualize multi-dimensional data we have achieved our core objective of providing retail business owners with actionable insights that can help in stocking decisions, supply chain optimization and overall profitability. The dashboards act as a strategic tool for data driven decision making and provides a sustainable competitive advantage in a dynamic retail environment.

In essence, the analysis proves that the Indian women's clothing market is highly diverse and seasonal driven by tradition and modernity. Retailers who understand and respond to these evolving trends through analytics will be more successful. This research contributes to the academic understanding of the market and provides tangible benefits to stakeholders in the fashion retail industry.

ACKNOWLEDGEMENT

Completing this paper would have been very difficult without the help of multiple people and institutions. We are grateful to everyone who helped towards this study's completion. Special thanks go to the researchers and analysts whose insights into the market's direction and consumer's behavior was so helpful. We also appreciate the online sources and e-commerce websites for the abundant information they offered, which was instrumental in analysis. Their data availability and transparency contributed significantly to shaping the foundation of our research.

Finally, we would like to thank our colleagues, teachers, and other evaluators who provided encouraging help towards this research work. Their constructive feedback and valuable suggestions helped refine our approach and improve the overall quality of this paper. We are also thankful for the technical support received during the data visualization phase, which made the analysis more impactful and meaningful. Their continuous motivation and willingness to assist at every step played a vital role in keeping the momentum of this project alive.

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