Data-Driven Optimization of Returns, Customer Trends and Sales for a Fashion Boutique

PROJECT PRESENTATION

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ORGANIZATIONAL BACKGROUND

LIPU & LINKAN DRESSES , a men's clothing store situated near Udala bus terminal,Mayurbhanj,Odisha,757041. It opens daily from 9 am to 10 pm.

Business Type : B2C

Founded : 2017 by Mr. Dibakar Senapati

Vision : Deliver trendy affordable fashion to local communities

Challenges :

- Weak customer insight
- High return rates
- Unclear sales trends

Problem Statement

Limited Customer Insights

Limited visibility into shopper preferences and buying behavior.

Inefficient Return Management

Large return volumes with unclear reasons hurt margins and planning.

Volatile Sales Performance

Sales fluctuate without clear seasonal or promotional patterns, making forecasting difficult

Data Collection

I collected data from November 1, 2024, to February 28, 2025, tracking sales and returns. The store provides data in spreadsheet format, making it easier for analysis. I obtained two distinct datasets, one for sales and another for returns . Sales dataset contains 990 rows and 9 columns, capturing various transactional details and the return dataset consists of 164 rows and 5 columns, focusing on returned items and their reasons.

- **Primary Data** : Collected from owners
- **Tools Used** : Excel, Google Sheets
- **Techniques** : Descriptive statistics, pivot tables, pivot charts

Sales Data Metadata

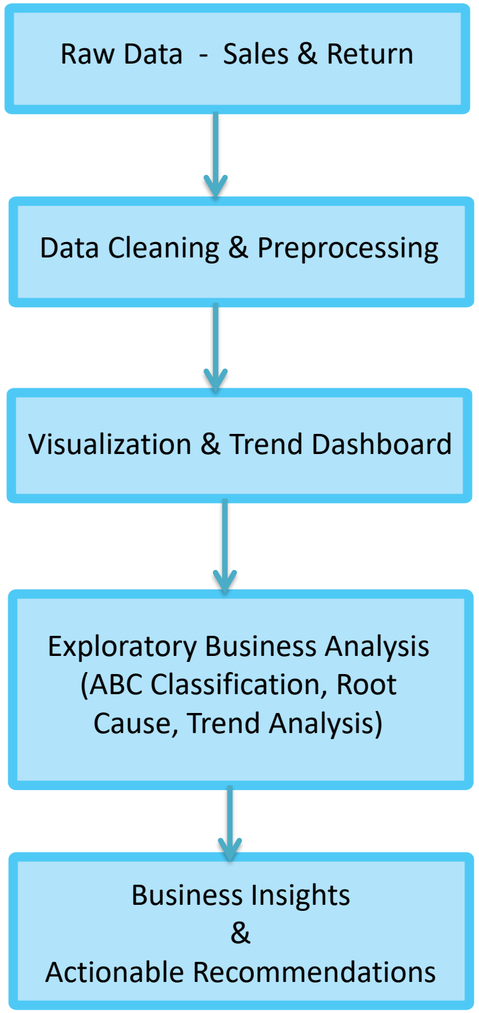
Variable	Description	Data Type	Relevance
Sl_No	Unique identifier for each transaction	Integer	Ensures proper tracking and referencing of sales data
Age_Group	Age range of customer	String	Helps analyze purchasing behavior across age demographics
Purchase_Category	Category of product purchased (e.g., Tie, Belt, Chinos)	String	Helps identify product demand and category performance
Date_of_Purchase	The purchase date of the product	Date	Useful for analyzing daily and seasonal sales trends
Week	Week label of the purchase (Derived column)	String	Supports weekly trend analysis
Month	Month name of the transaction (Derived column)	Date	Helps identify monthly patterns and seasonal demand
No_of_Items_Purchased	Number of units purchased per item	Integer	Tracks volume of individual product sales
Price_per_Item	Selling price including GST per item	Float	Determines per-item revenue
Discount_Per_Unit	Discount offered per item	Float	Helps evaluate promotion effectiveness
Total_Sale	Total amount after discounts	Float	Useful for calculating total sales

Returns Data Metadata

Variable	Description	Data Type	Relevance
Sl_No	Unique identifier for each return transaction	Integer	Helps track and reference returned products systematically
Product_Name	Name or type of returned product	String	Allows identification of frequently returned items
Return_Reason	Reason stated for return (e.g., Fitting Problem, Stitching Issue)	String	Helps identify quality or sizing issues in products
Days_Since_Purchase	Number of days between purchase and return	Integer	Useful for tracking return cycles and eligibility windows
Status	Whether the return led to an Exchange or Refund	String	Helps in financial planning and inventory adjustment strategies

Methodology

- **Raw Data – Sales & Return**: Collected boutique-level sales and return records to form the base dataset for analysis.
- **Data Cleaning & Preprocessing**: Cleaned, standardized, and formatted product, return reason, and date fields to ensure accuracy.
- **Visualization & Trend Dashboard**: Built Excel dashboards with pivot tables and charts to display sales, returns, and seasonal demand trends.
- **Exploratory Business Analysis**: Applied ABC classification, root cause analysis, and trend study to identify key products, return issues, and festival-driven patterns.
- **Business Insights & Actionable Recommendations**: Suggested inventory planning, improved sizing/quality checks, and festival-focused marketing strategies.

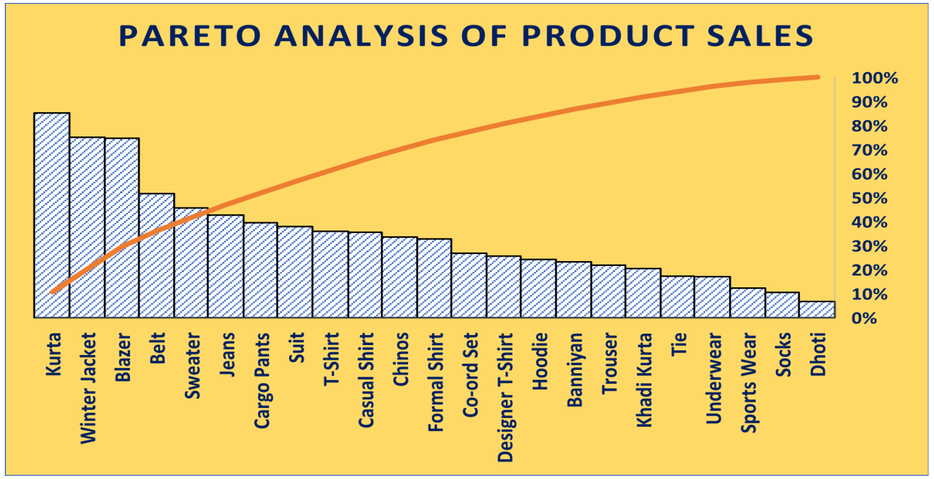


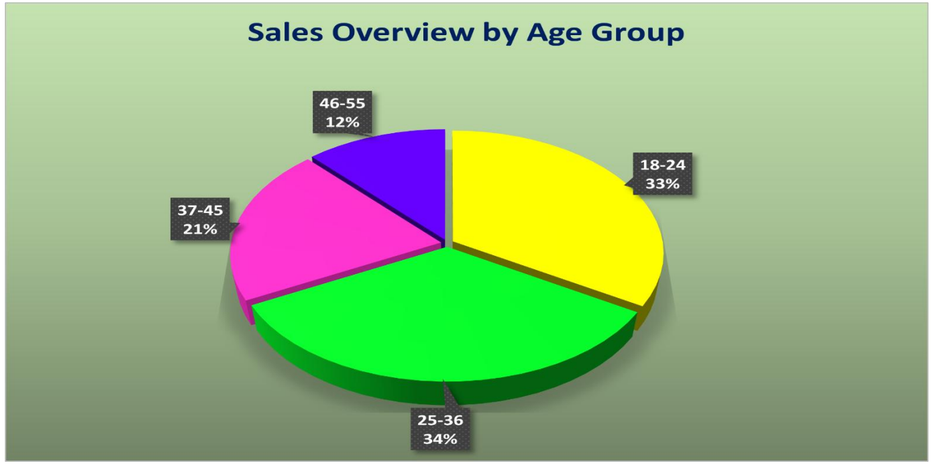
Customer Insights

- Pareto analysis reveals an 80/20 distribution, where six products like Kurta, Winter Jacket, Blazer, Belt, Sweater, and Jeans generate 80% of total sales, with Kurta being the leading item.
- The pie chart shows that younger demographics dominate, with customers under 36 years contributing 67% of total sales (25–36 age group: 34%, 18–24 age group: 33%), while older segments show minimal participation.
- The two tables highlight unique products purchased exclusively by specific age groups and age pairs.
  - The first table maps products to age pairs, showing which combinations of age ranges are solely responsible for purchasing certain items.
  - The second table maps products to individual age groups, identifying items uniquely purchased by each age bracket.

PRODUCT	ONLY PURCHASING AGE PAIR
Casual Shirt	37-45, 46-55
Formal Shirt	25-36, 37-45
Jeans	18-24, 37-45
Suit	25-36, 37-45
Tie	25-36, 37-45
T-Shirt	18-24, 25-36

AGE	ONLY PURCHASING PRODUCT
18-24	Cargo Pants, Designer T-Shirt, Hoodie, Sports Wear
25-36	Chinos, Co-ord Set
37-45	Trouser
46-55	Dhoti, Khadi Kurta



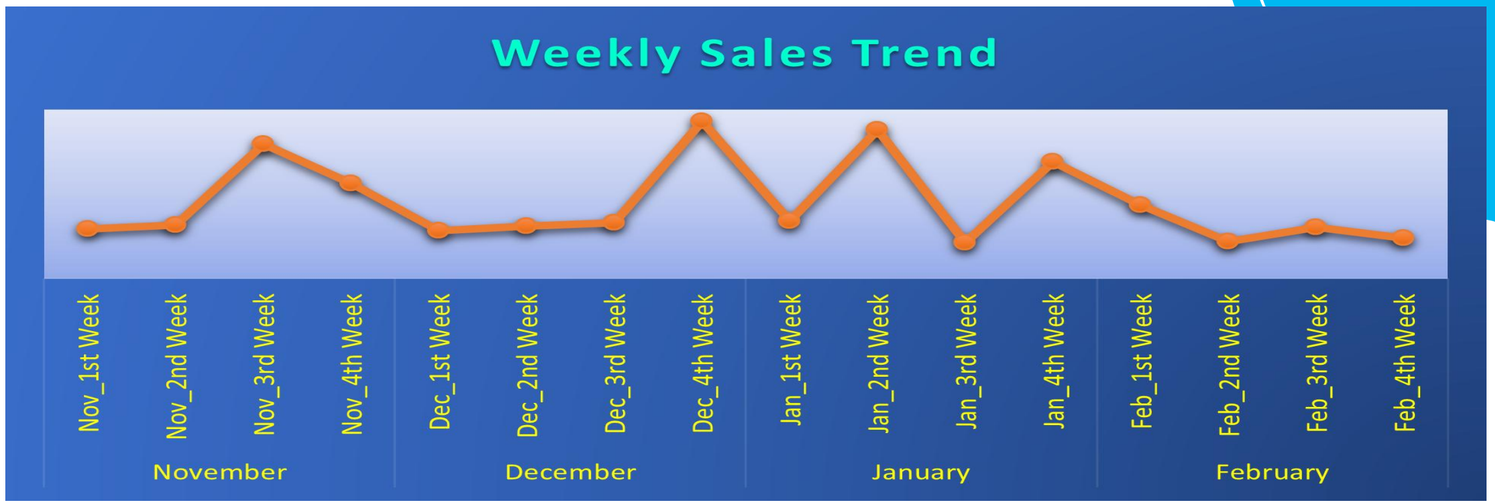


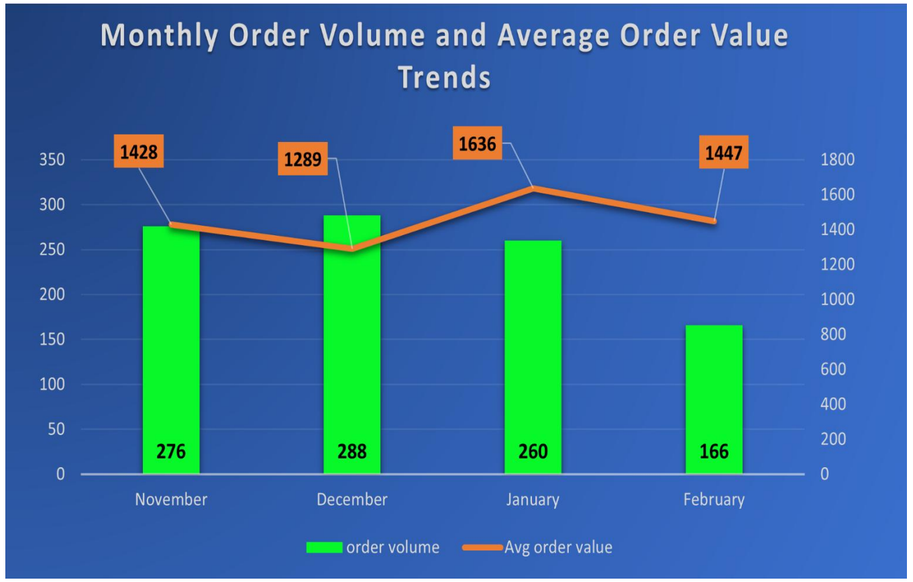
Sales Trend & Analysis

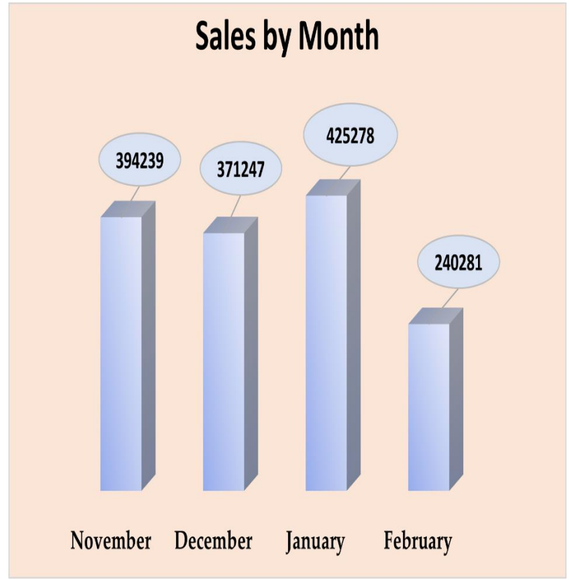
- Demonstrates clear festival-driven sales spikes with four major peaks corresponding to Prathamastami, New Year, Makar Sankranti, revealing predictable seasonal patterns. It directly resolves Unclear Sales Patterns by identifying festival-based high demand cycles.

- Bar Chart of Sales by Month Shows January as peak sales month (₹4,25,278) driven by New Year and Makar Sankranti festivals, with February showing sharp decline due to post-festival spending fatigue. It addresses Unclear Sales Patterns by providing clear monthly demand cycles

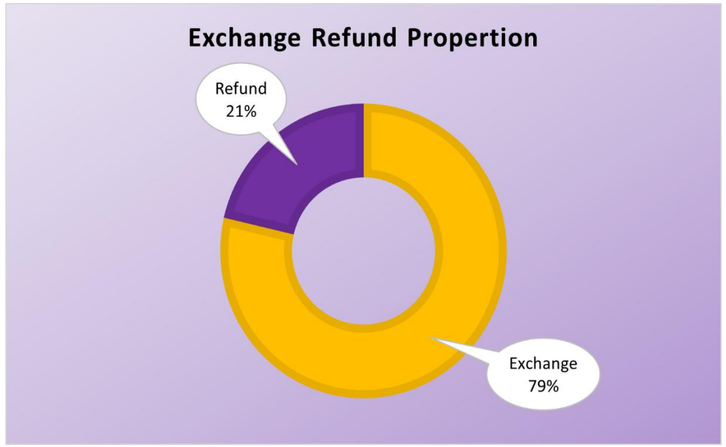
- December had high order volume but low spend per order where customers favored value buys. January showed fewer orders but higher spend, reflecting premium preferences. This reveals monthly shifts in buying behavior, addressing both “Limited Customer Insights” and “Unclear Sales Patterns.”

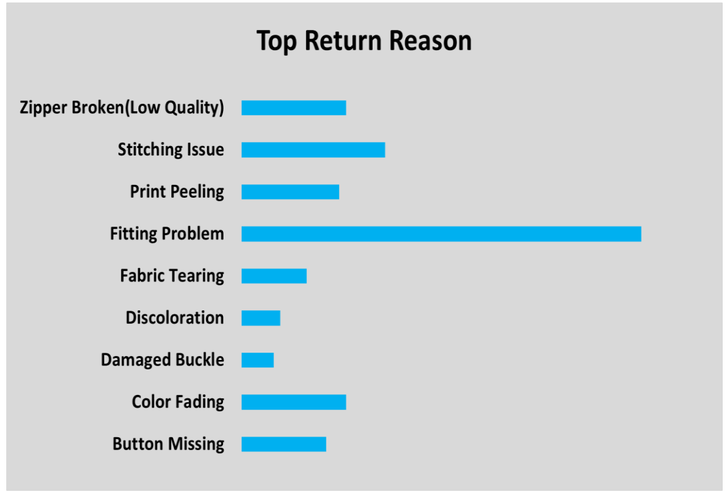






Return Analysis





- Majority (79%) of returns result in exchanges, not refunds. customers still value the product, just need a better version.
- Only 21% ask for refunds indicating brand trust remains intact, issue lies in product execution.
- Vertical bar chart shows that Jeans and T-Shirts lead returns, followed by Formal Shirts, Designer T-Shirts and Blazers.
- Issues span across casual(Formal Shirts, T shirts) and premium categories(Jeans, Designer T shirts, Blazer) need to focus on all.
- Horizontal bar chart displays top return reasons. Fitting issues rank highest, followed by broken zippers, poor stitching, fading, and other small defects.

Implementation Plan

Interpretation

- Two age segments (18-36) drive 67% of business while only 6 products generate 80% of sales despite being 30% of inventory.
- Fitting problems dominate returns but 79% choose exchanges showing brand loyalty.
- Sales follow festival calendar with January peak (₹4,25,278) from premium traditional purchases.

Short term strategy

- Create age-specific product displays near the bus stop entrance and train staff to recommend based on customer age.
- Focus 70% inventory on top 6 products generating 80% sales, reduce slow-moving stock.
- Address returns by partnering with local tailors, using accurate size charts, and improving fitting room experience.
- Plan festival-specific inventory 6 weeks ahead, with themed window displays and a February Recovery Sale post-festivals.

Long term strategy

- Expand into women's and children's fashion with family combo offers during festivals.
- Strengthen quality control by standardizing sizing, testing new stock, and tracking supplier performance.
- Build customer relationships via a database for personalized offers, festival reminders, and loyalty discounts.

Conclusion & Next Steps

Conclusion

- Sales increased by ₹50,000 per month, indicating consistent upward momentum and improved customer engagement.
- Targeted analytics streamlined the return process, reducing return related issues and uncovering key customer preferences

Next Steps

- Launch Online Sale
- Collect regular customer feedback for product decisions
- Monitor Festival Sales & provide festival offers

THANK YOU