

Sales Analysis Project Write-Up

Sales Analysis Project – AAL

Project Description :-

AAL is a well-known clothing brand in Australia, operating since the year 2000. The company offers clothing for kids, women, men, and seniors and has branches across several Australian states, including metro, tier-1, and tier-2 cities.

As the business is growing rapidly, AAL plans to expand further and wants to make data-driven investment decisions. To support this goal, the CEO has asked the Sales and Marketing (S&M) team to analyze sales performance across states and customer groups.

This project focuses on analyzing fourth-quarter sales data across Australia, identifying high- and low-performing states, and providing insights to help improve sales in underperforming regions.

Project Objectives :-

- The main objectives of this project are:
- To identify which states generate the highest and lowest revenues
- To analyze sales performance across customer groups (kids, women, men, seniors)
- To study sales trends over time (daily, weekly, monthly, quarterly)
- To provide recommendations for improving sales in low-revenue states

Methodology

The project is carried out in four main stages :-

1 Data Wrangling

- Checked the dataset for missing and incorrect values using functions like isna() and notna()
- Handled missing values using appropriate techniques such as dropping or filling data
- Applied data normalization to ensure consistency across numerical columns
- Used the groupby() function to aggregate sales data by state, group, and time period

2 Data Analysis

- Performed descriptive statistical analysis (mean, median, mode, standard deviation) on sales and units sold
- Identified:
 - Highest and lowest sales-generating groups
 - Highest and lowest sales-generating states
- Generated weekly, monthly, and quarterly sales reports to understand trends and seasonality

3 Data Visualization

- Used Seaborn and Matplotlib for data visualization due to their strong statistical plotting capabilities
- Created visual dashboards including:
- State-wise sales analysis by customer group
- Group-wise sales comparison across states
- Time-of-day sales analysis to identify peak and low sales hours
- Used:
Box plots for descriptive statistics
- Distribution plots for sales pattern analysis

4 Report Generation

- The entire analysis was documented using Jupyter Notebook
- Combined code, visualizations, and explanations using Markdown
- Provided clear graphs, insights, and business recommendations for stakeholders

Key Insights

Certain states contribute significantly more revenue than others

Women's and men's categories generate the highest overall sales

Some states show consistently low sales, indicating the need for targeted marketing

Sales peak during specific times of the day, which can be used for promotional campaigns

Recommendations

Increase marketing efforts and promotional offers in low-performing states

Focus inventory and campaigns on high-performing product groups

Use time-based promotions during low-sales hours to increase conversions

Adopt personalized and region-specific sales programs

Conclusion

This project helps AAL understand its sales performance across Australia using data analysis and visualization techniques. The insights gained enable the company to make informed decisions on expansion, marketing strategies, and investment planning. By leveraging data-driven insights, AAL can improve revenue growth and strengthen its market presence.