Retail Sales Analysis – Project Report

Business Task

Theprimary objective of this project was to analyze retail sales data to uncover insights that support decision-making. The analysis aimed to: - Understand customer demographics and purchasing behavior. - Identify sales patterns and high-value transactions. - Evaluate product category performance. - Highlight top customers and sales trends to support business growth strategies.

Data Cleaning Process

-Data Validation:Checkedfor missing or null values across critical fields (e.g., sale date, customer ID, product category, quantity, and price). - Data Cleaning: Removed records with incomplete or missing information to ensure accuracy and consistency. - Exploration: Verified unique customers, product categories, and total records before analysis.

Tools Used

-MySQL: For datacleaning, database management, and executing analytical SQL queries. - SQL Queries: For performing exploratory analysis, answering business questions, and generating insights.

Findings

-Customer Demographics: Customers span multiple age groups, with notable engagement in categories such as Clothing and Beauty. - High-Value Sales: Transactions exceeding 1000 in value indicate the presence of premium product purchases. - Sales Trends: Monthly averages reveal seasonal demand shifts, highlighting peak-performing months. - Customer Behavior: Top 5 customers generated the highest revenue, while shift analysis (Morning, Afternoon, Evening) revealed sales activity distribution. - Category Insights: Categories varied in unique customer counts, showcasing demand diversity.

Outcome & Recommendations

-Target Marketing: Focus campaigns onhigh-spending customers and premium product buyers. - Inventory Planning: Align stock with seasonal peaks to avoid shortages and optimize sales. - Product Strategy: Invest in fast-moving categories while promoting underperforming ones. - Customer Segmentation: Use demographics and purchasing patterns to personalize offers. - Operational Insights: Staffing and promotional efforts can be optimized by analyzing peak shopping shifts.

Conclusion

This project demonstrates how SQL can be applied to solve real-world business problems in the retail sector. Through structured data cleaning, exploratory analysis, and targeted queries, the project provides actionable insights into customer behavior, sales patterns, and category performance. These findings can guide strategic decisions such as marketing, inventory management, and customer engagement. By showcasing this project, I highlight my ability to work with relational databases, perform data analysis using SQL, and deliver insights that support business growth