Sales & Customer Analytics Project Report

Time Period Analyzed: 2018–2021

Tools Used: PostgreSQL (SQL), Microsoft Excel

Datasets: Orders, Customers, Products, Returns, SalesTarget, SalesPerson

Prepared by: Deshmukh Mayur Balasaheb
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Contents

1   Project Overview

This project focuses on analyzing sales performance, customer behavior, product trends, and sales target achievement to derive actionable insights that support data-driven decision-making.

2   Project Objectives

- Examine revenue and profit trends across time and categories.

- Identify high-performing customers and products.

- Perform RFM (Recency, Frequency, Monetary) segmentation to classify customers into High, Medium, and Low value and Pareto analysis for revenue and top monetary customers.

- Evaluate sales target achievement by state and month.

- Generate insights to drive business growth and optimize regional strategies.

3   Data Model Overview

Table Name	Key Columns	Description
Orders	RowID, OrderID, OrderDate, Year, ShipMode, CustomerID, Segment, Country, City, State, PostalCode, Region, ProductID, SalesAmount, Quantity, Discount, Profit, SalesPerson	Contains transactional sales data.
Customers	CustomerID, CustomerName	Stores customer information.
Products	Category, SubCategory, ProductName, ProductID	Holds product details.
Returns	Returned, OrderID	Tracks order returns.
SalesTarget	State, Year, Month, Target	Contains monthly state-level sales targets.

SalesPerson	SalesID, Name	Details of sales representatives.

4 Sales and Revenue Analysis

4.1 Key Metrics

- **Total Revenue:** 11,488,064.20

- **Total Profit:** 1,430,431.86

- **Profit Margin:** 12.45%

- **Total Orders:** 5,009

- **Average Order Value (AOV):** 2,293.48

- **Average Order Quantity (AOQ):** 7

4.2 Analysis Highlights

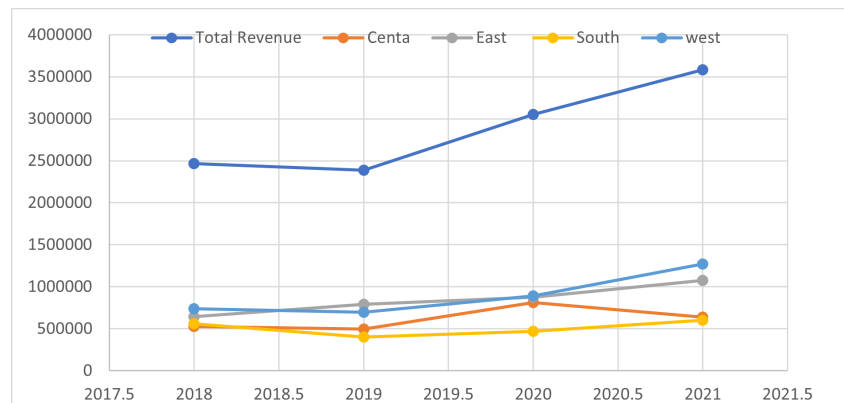### 4.2.1 Yearly and monthly revenue trends were examined to assess seasonality and growth.

Figure 1: Yearly Sales Trend (2018–2021)

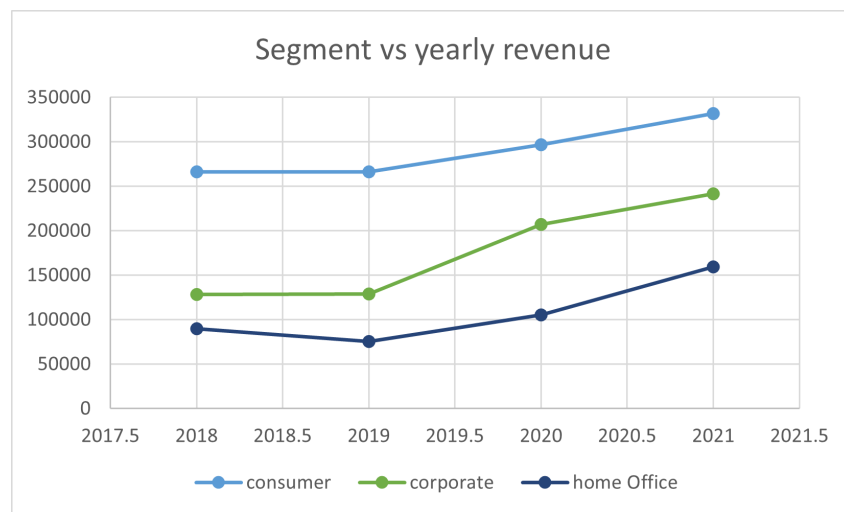### 4.2.2 Performance was segmented by customer category to identify profitable segments.

Figure 2: Yearly Sales Trend (2018–2021)

4.2.3 Category-wise revenue analysis revealed top-performing product lines.
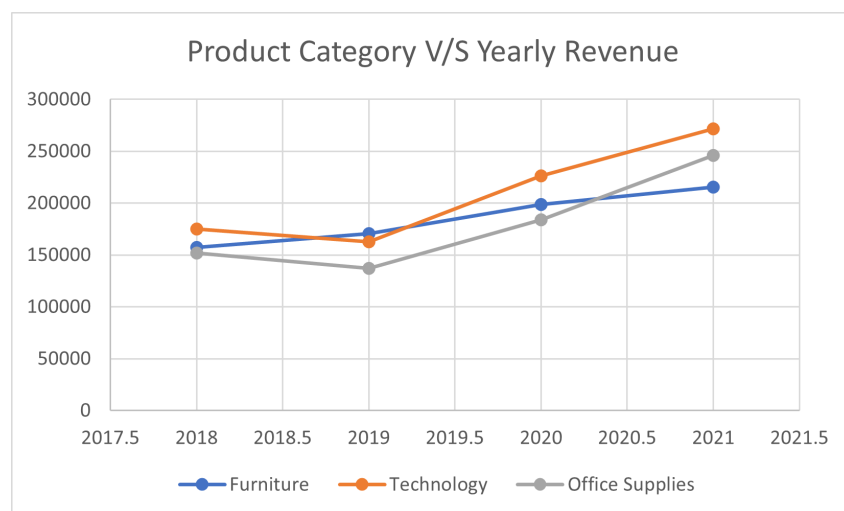
Figure 3: Yearly Sales Trend (2018–2021)

4.2.4 Return patterns were studied across shipment modes and product categories.

(a) Shipment mode of orders vs Orders

(b) Shipment vs Returned Orders

(c) Category vs Returned Quantity

Figure 4: Yearly Sales Trend (2018–2021)

Estimated revenue without discounts was 14,311,864.35.

4.2.5 Pareto analysis indicated that a small subset of customers contributed disproportionately to revenue.

Figure 5: Yearly Sales Trend (2018–2021)

5 Customer & RFM Analysis

5.1 RFM Segmentation Summary

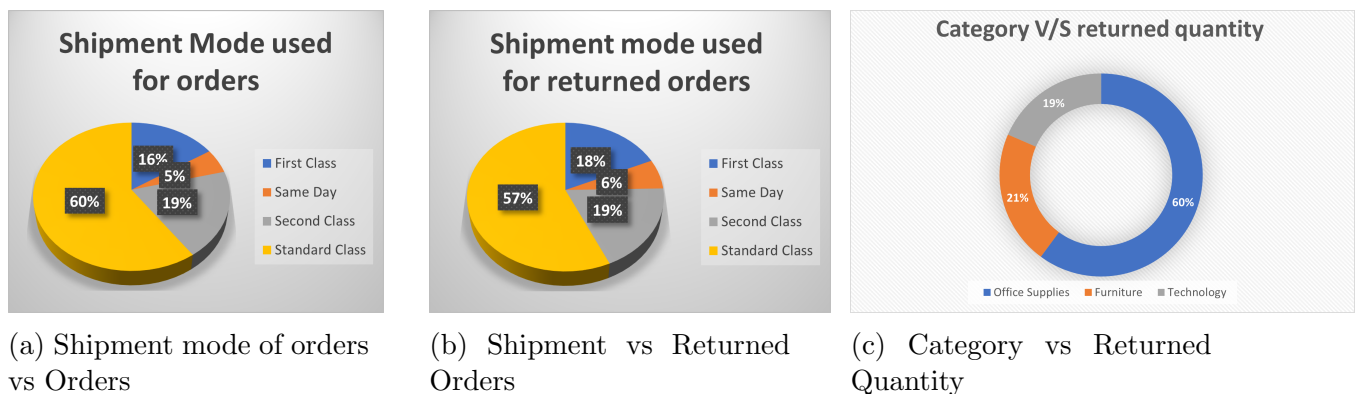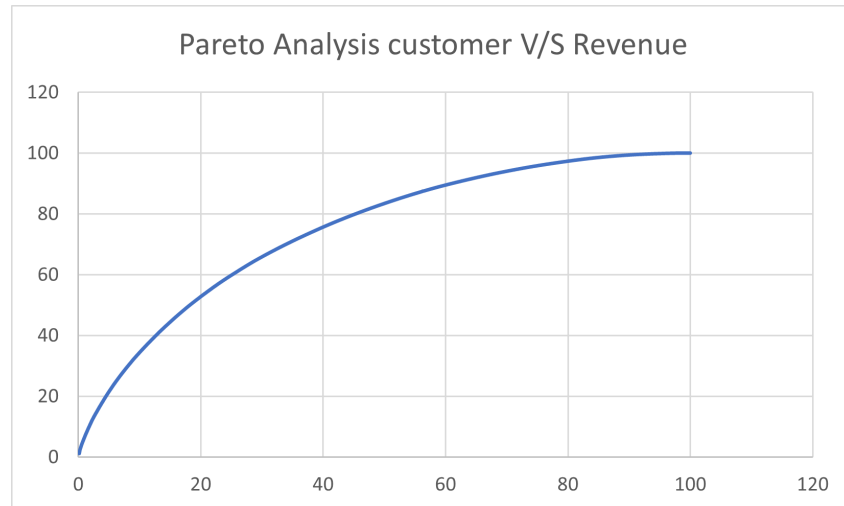| Segment	Number of Customers
High Value	265
Medium Value	264
Low Value	264

5.2 Key Insights

- Identified top customers by both revenue and purchase frequency.

- Analyzed monthly new customer acquisition trends — a noticeable decline was observed after 2018.

- Evaluated top-performing salespersons by customer segment.

Insight: Customer acquisition rates have dropped significantly since 2018, suggesting a need for renewed engagement or marketing strategies.

6 Sales Target Achievement

- Calculated the percentage of target achievement for each state and month.

- Aggregated regional performance to identify underperforming areas.

- Highlighted states with consistent shortfalls compared to their targets.

Insight: States in the Southern region consistently underperformed compared to the Eastern and Western regions.

7 Regional Performance (Number of Orders)

Year	Central	East	West	South
2018	93	102	286	44
2019	67	142	327	62
2020	69	131	514	76
2021	121	168	771	80

Insight: The West region consistently leads in order volume, while the Central region shows strong recovery in 2021 after a dip during 2019–2020.

8 Returns Analysis by Category (Yearly)

Year	Office Supplies	Furniture	Technology
2018	308	117	100
2019	336	134	128
2020	509	162	119
2021	682	241	217

Insight: The Office Supplies category experiences the highest and fastest-growing return rates, indicating possible product or process inefficiencies.

9 Key Business Insights

- **Customer Concentration:** The top 20% of customers generate nearly 50% of total revenue.

- **Regional Strength:** The West region dominates in both revenue and order volume.

- **Underperformance:** The South region consistently underachieves sales targets.

- **Rising Returns:** Increasing returns in Office Supplies suggest operational inefficiencies.

- **Shipping Behavior:** Majority of customers prefer Standard Shipping.

- **Growth Potential:** East region shows promising growth trends, while South is gradually improving.

10 Conclusion

This analysis provided comprehensive insights into sales dynamics, customer behavior, and regional performance. Key recommendations include:

- Strengthen retention strategies for high-value customers.

- Investigate return issues in the Office Supplies segment.

- Focus on improving sales execution in underperforming regions.

- Re-evaluate discount and pricing strategies to enhance profitability.

Through structured data analysis in PostgreSQL, the project demonstrates how SQL-based analytics can uncover trends, guide decisions, and support strategic business growth.