

Sales Analytics Report

Exploratory Data Analysis and Data Visualization.

Team Members Name	Roll No.
Abhilasha Nirmal	SCFU124007
Ajinkya Konda	SCFU124059
Gaurav Dudam	SCFU124009
Shubham Marta	SCFU124079

MIT Vishwaprayag University

School of Computing / B.Tech CSE

Academic Year : 2024–2025

Introduction:-

- Conducted Exploratory Data Analysis (EDA) on transactional sales dataset.
- Aim: Identify sales patterns, correlations, clustering and behaviour trends.
- Use statistical methods and visualizations for meaningful insights.

Dataset Attributes:-

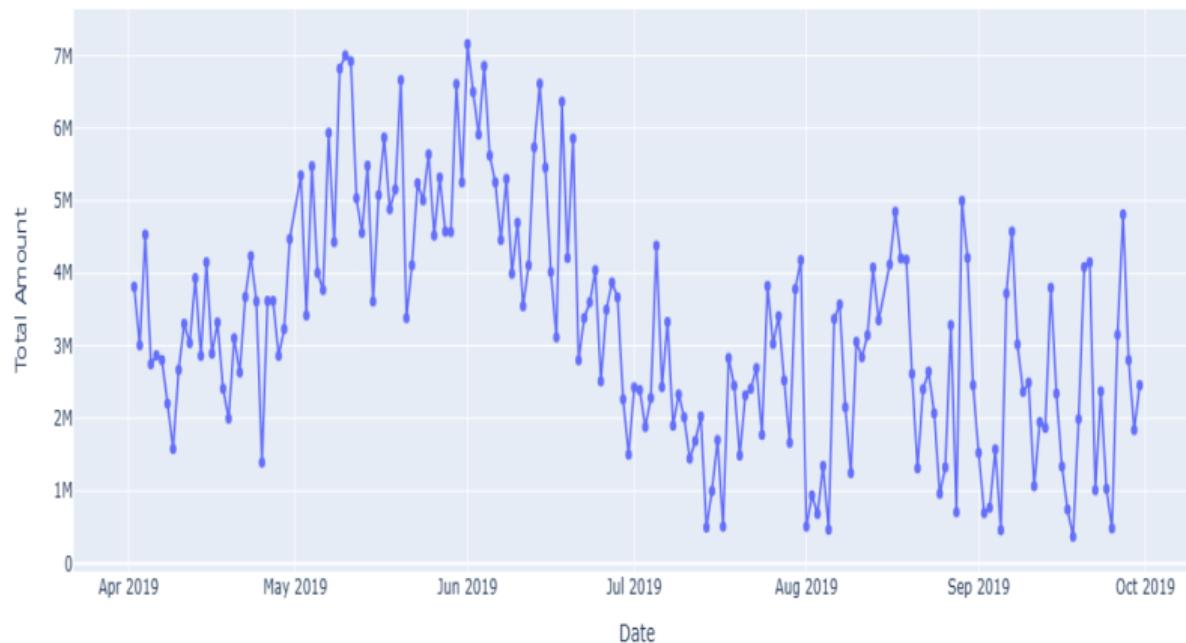
- Product Size (mm), Quantity Sold, Rate Per Unit, Basic Amount, GST, Total Amount, Product Colour, Type, Manufacturing Location, Customer Demand, Date, Pricing Behavior.

Visualizations Overview:-

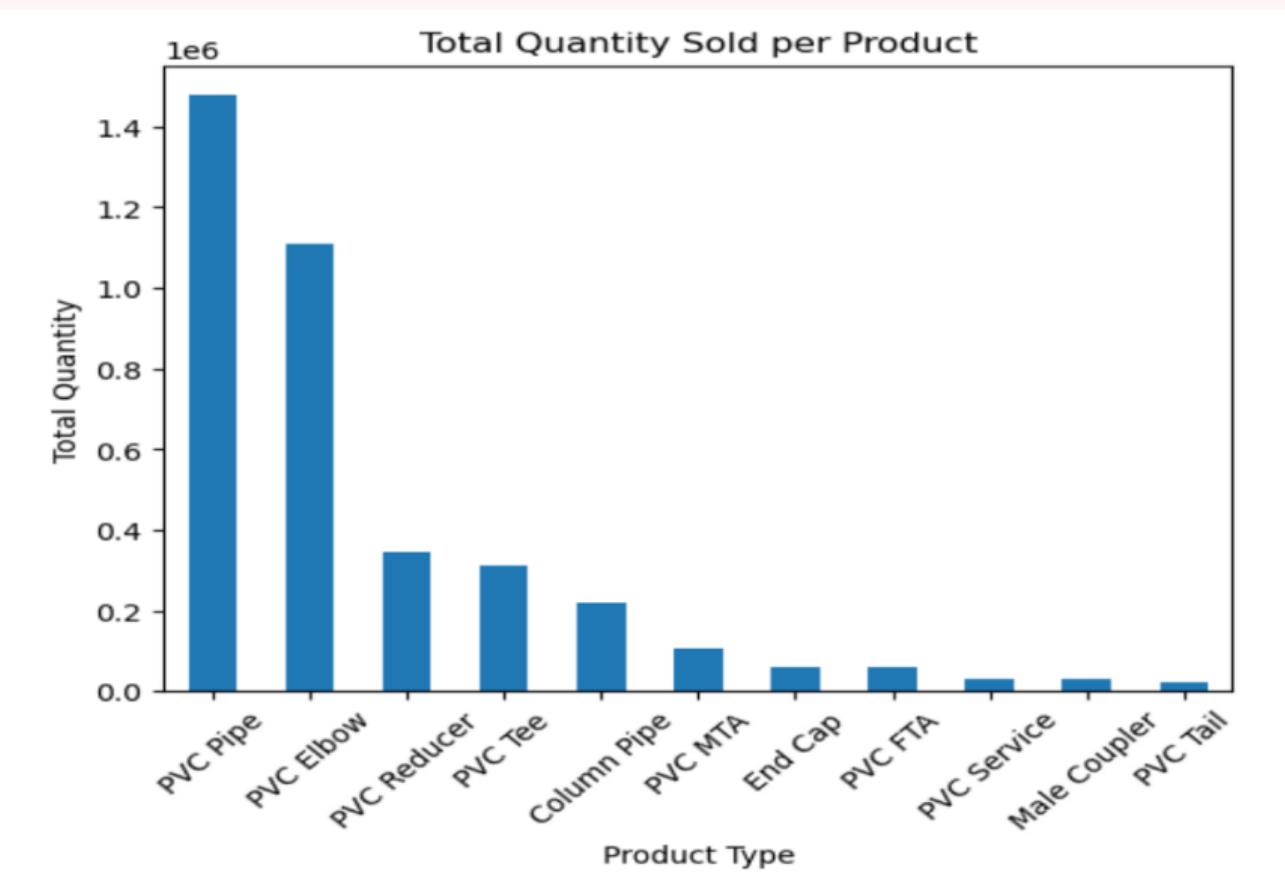
- Identify trends in sales over time (daily, monthly, yearly).
- Compare performance of products by size, type, and colour.
- Detect correlations between quantity, rate, GST, and total amount.
- Highlight high-value locations and customer segments.
- Understand variation and patterns using PCA and clustering.
- Detect outliers and unusual transactions to improve business strategy.

Daily Sales Trend (Line Plot)

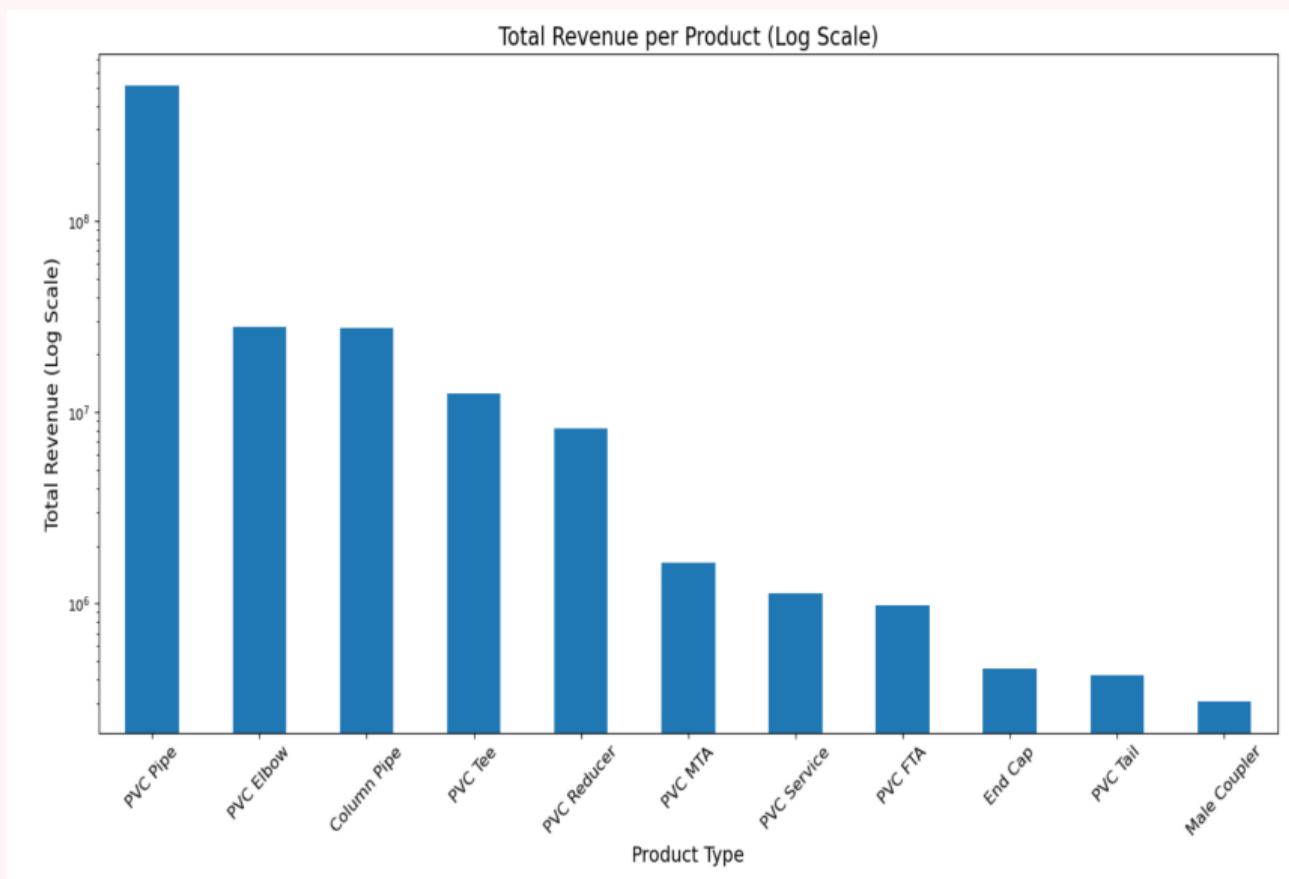
Daily Total Sales Trend



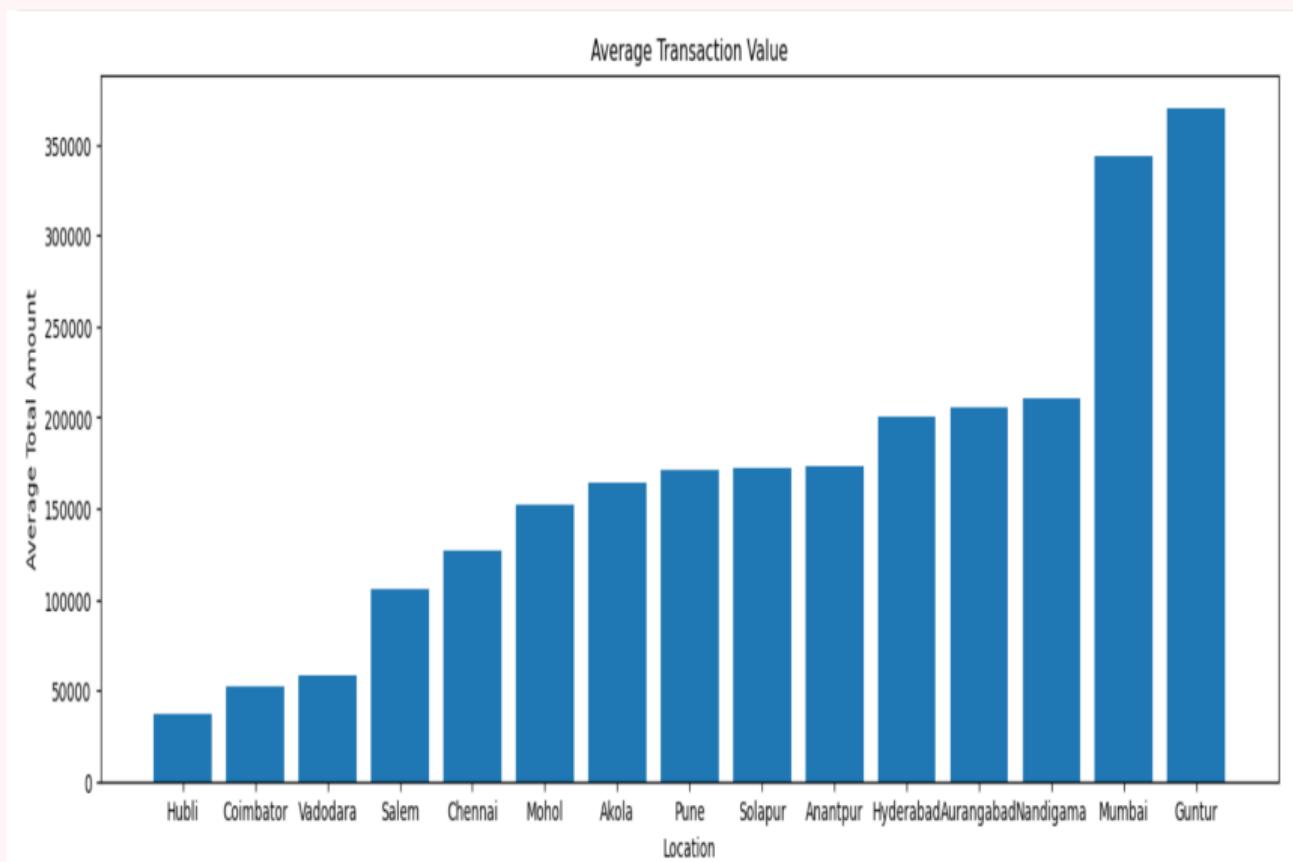
Total Quantity Sold Per Product (Bar Plot)



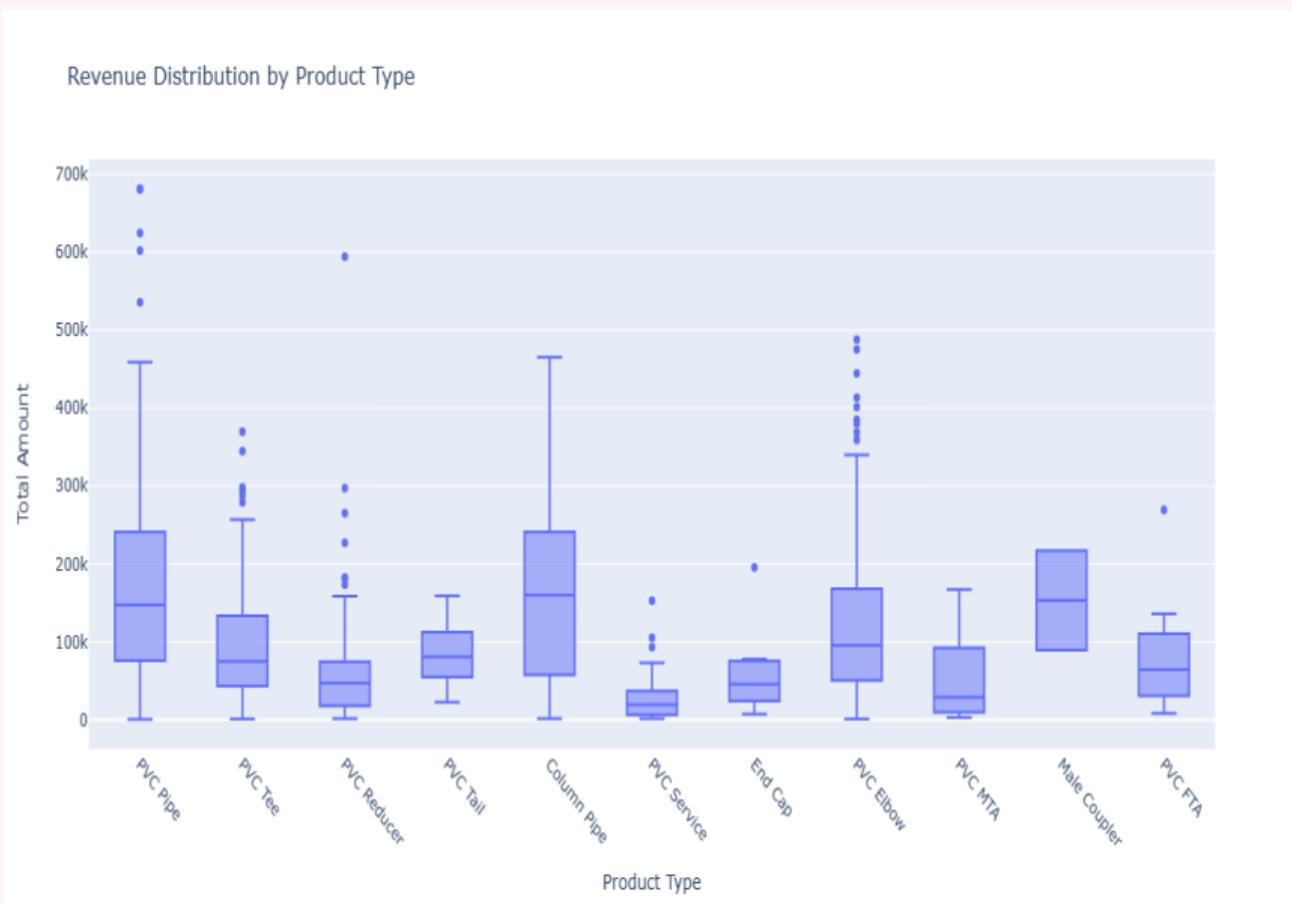
Total Revenue Per Product (Log Scale)



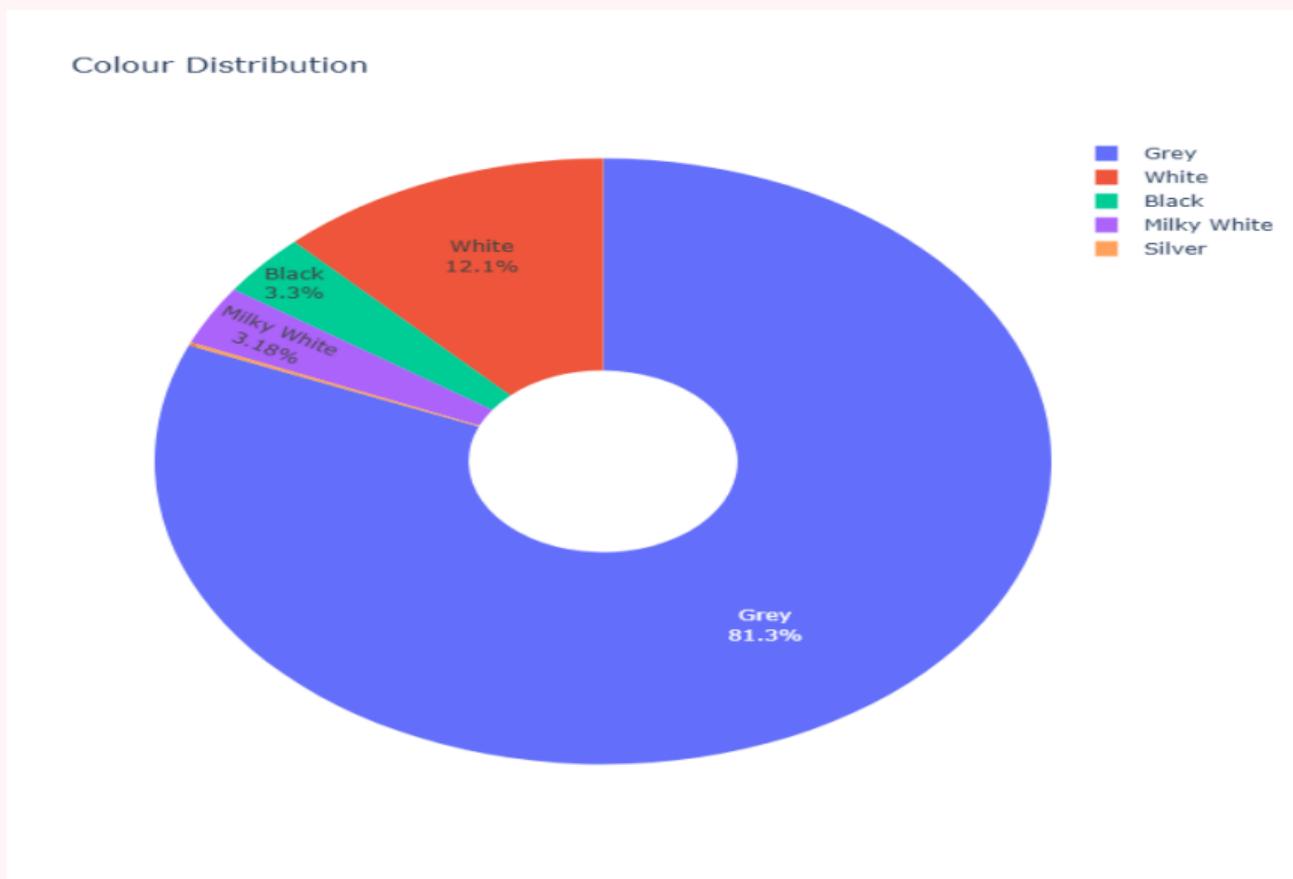
Average Transaction Value by Location (Bar Plot)



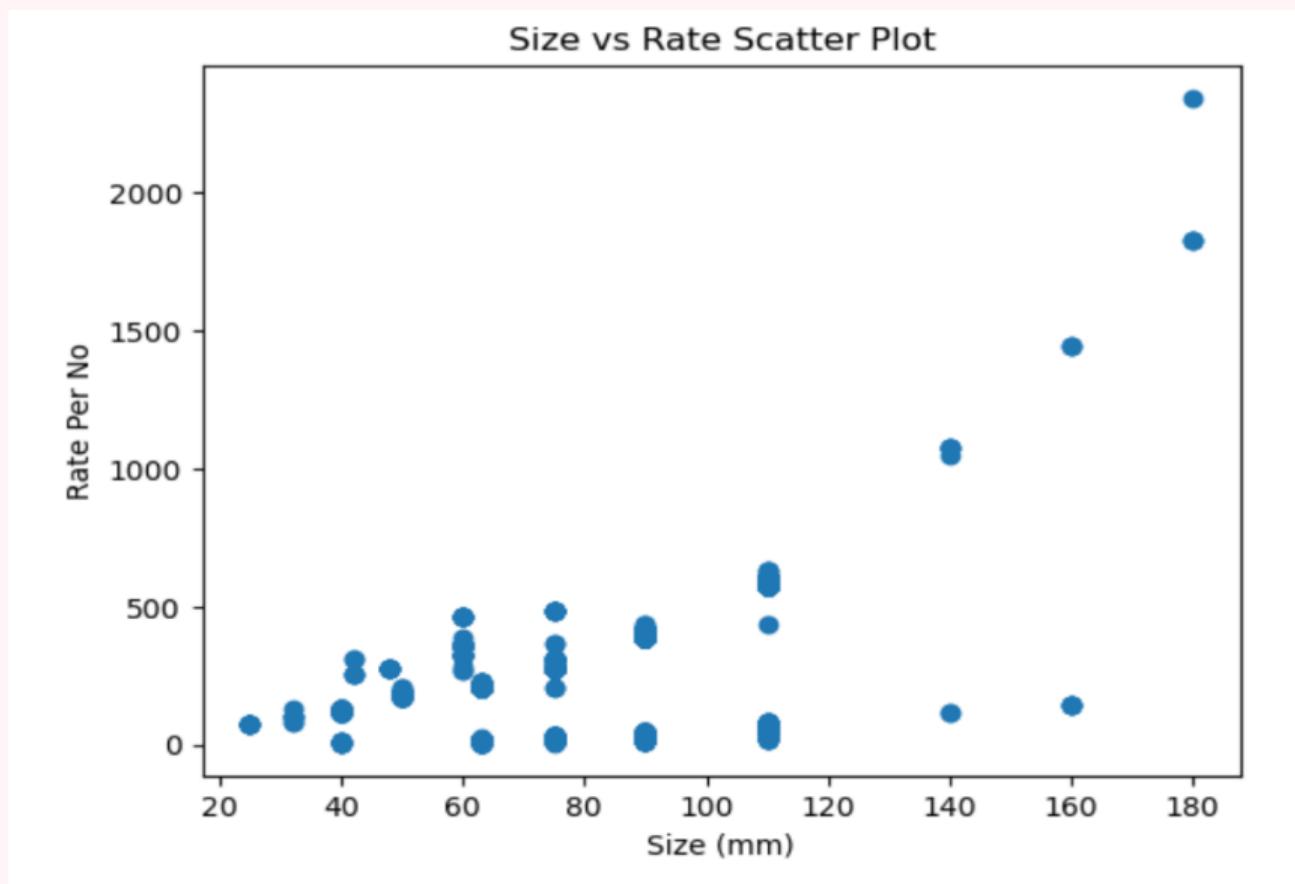
Revenue Distribution by Product Type (Box Plot)



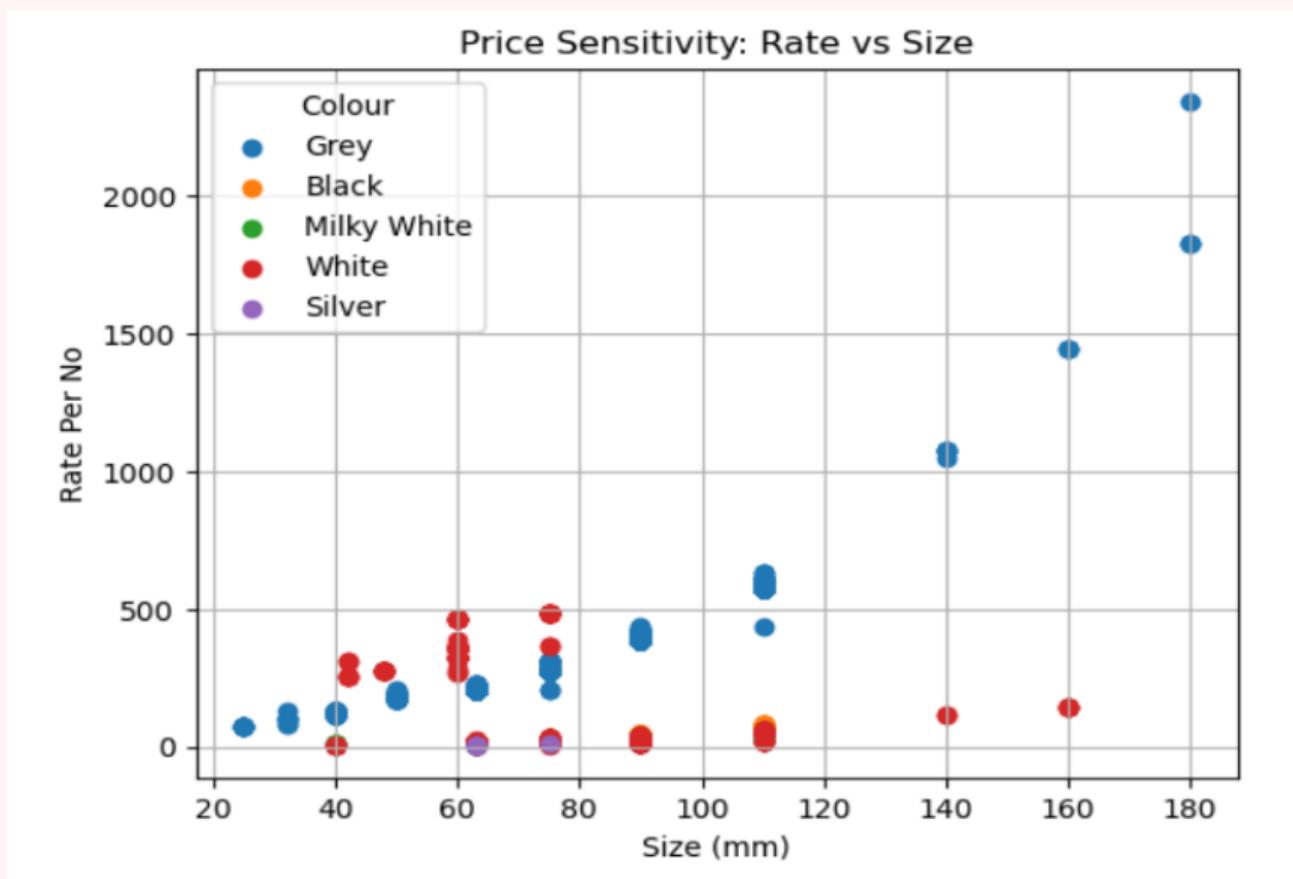
Colour Distribution (Pie Chart)



Scatter Plot: Size vs Rate

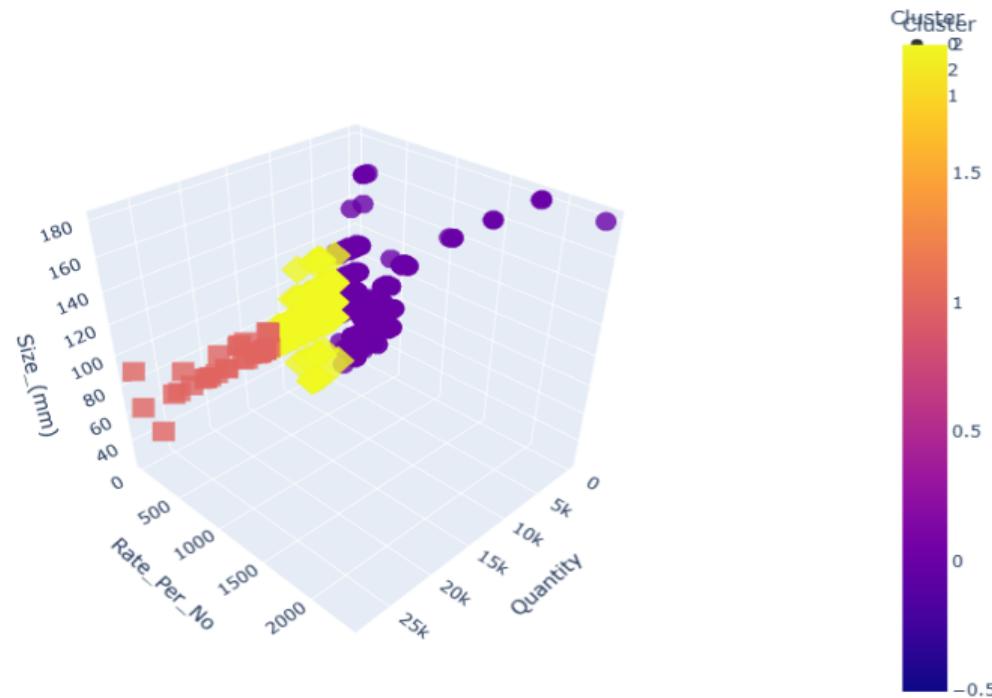


Price Sensitivity: Rate vs Size (Grouped by Colour)

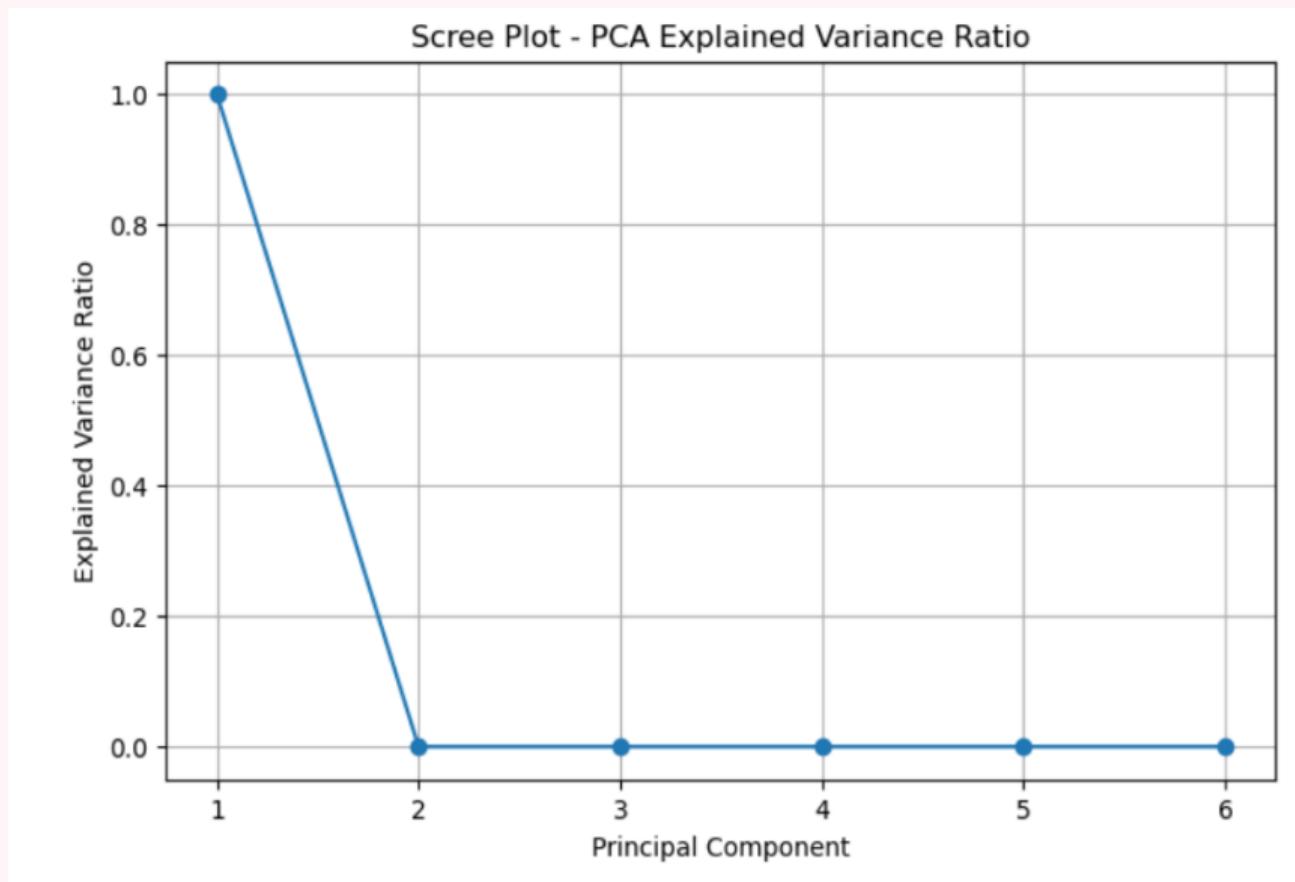


3D K-Means Clustering

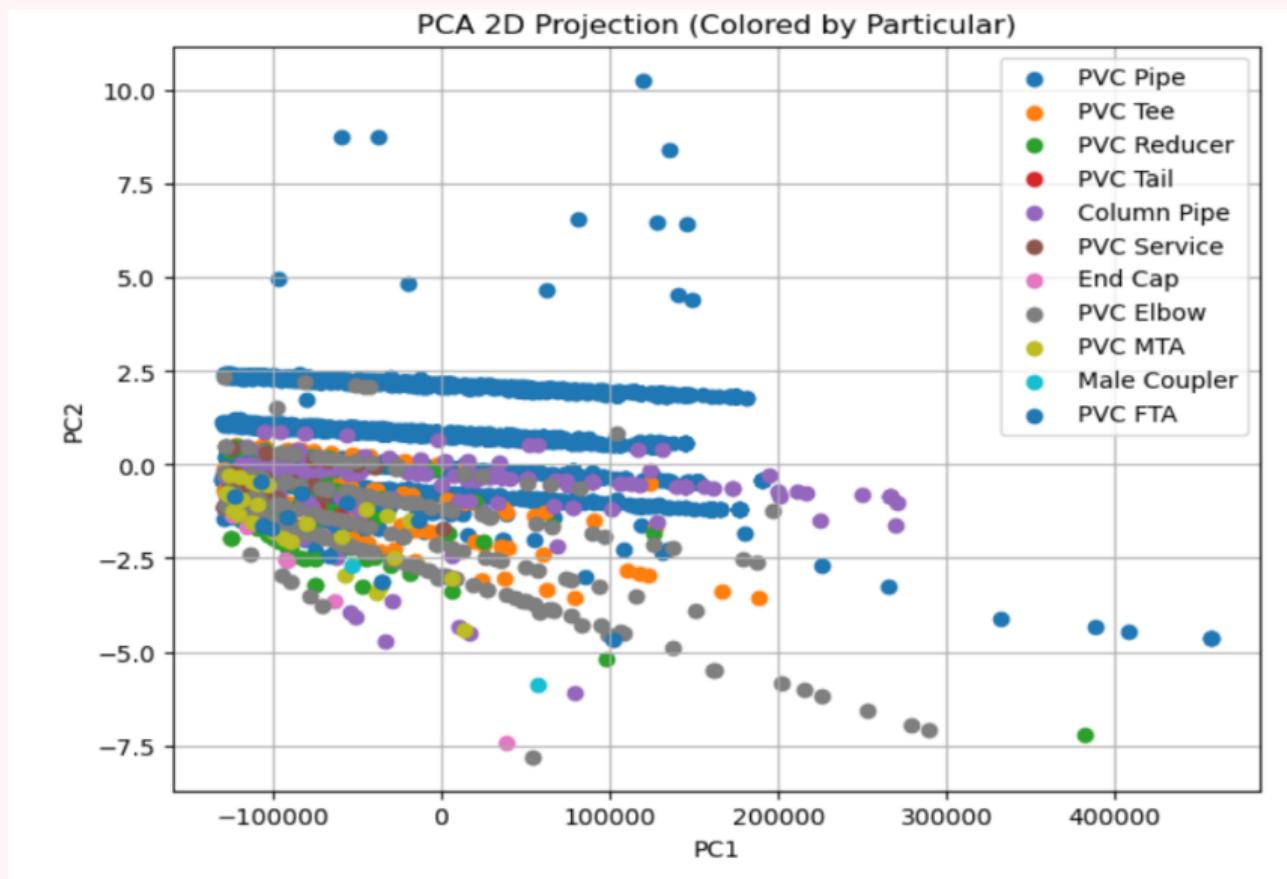
3D K-Means Clustering of Transactions



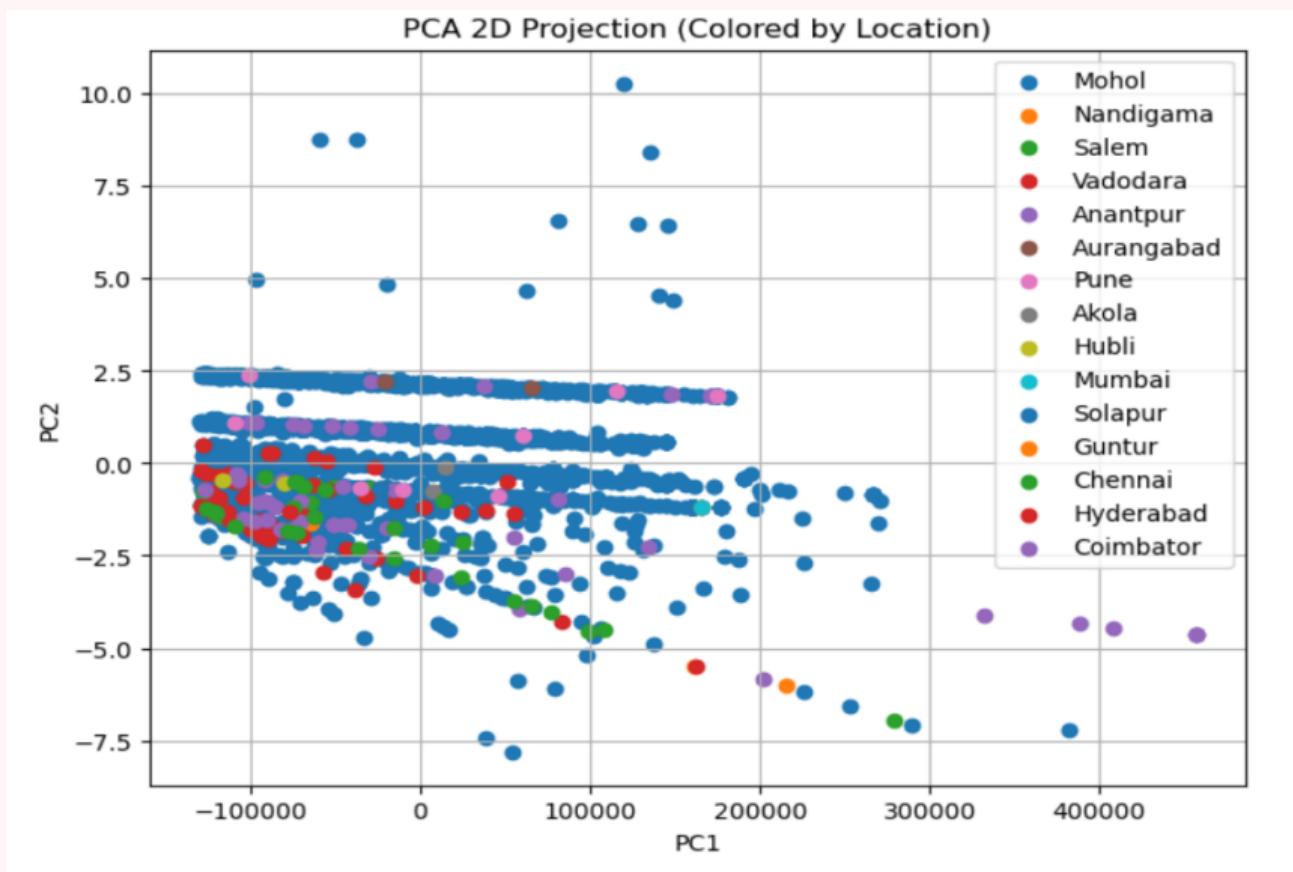
PCA Scree Plot



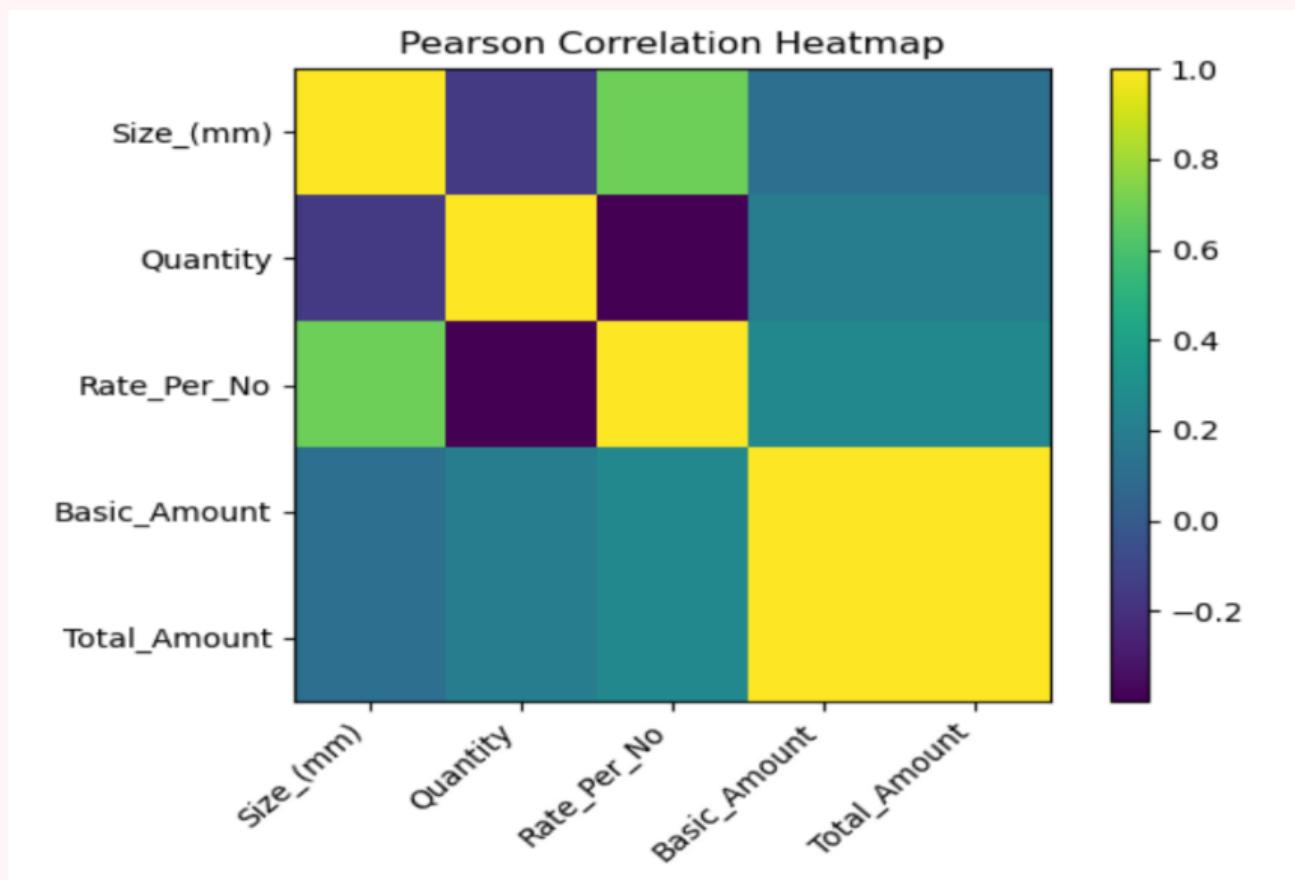
PCA 2D Projection by Product Type



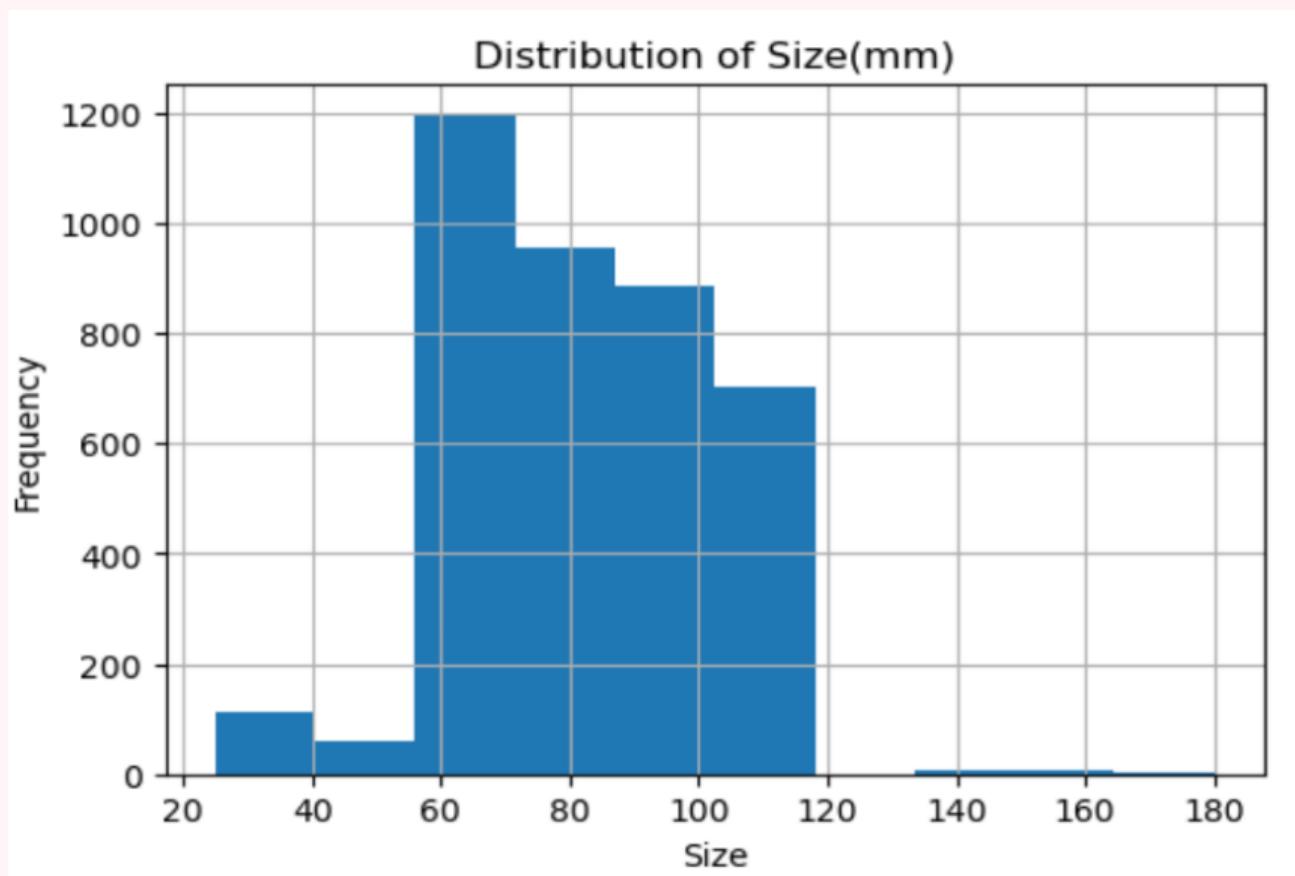
PCA 2D Projection by Location



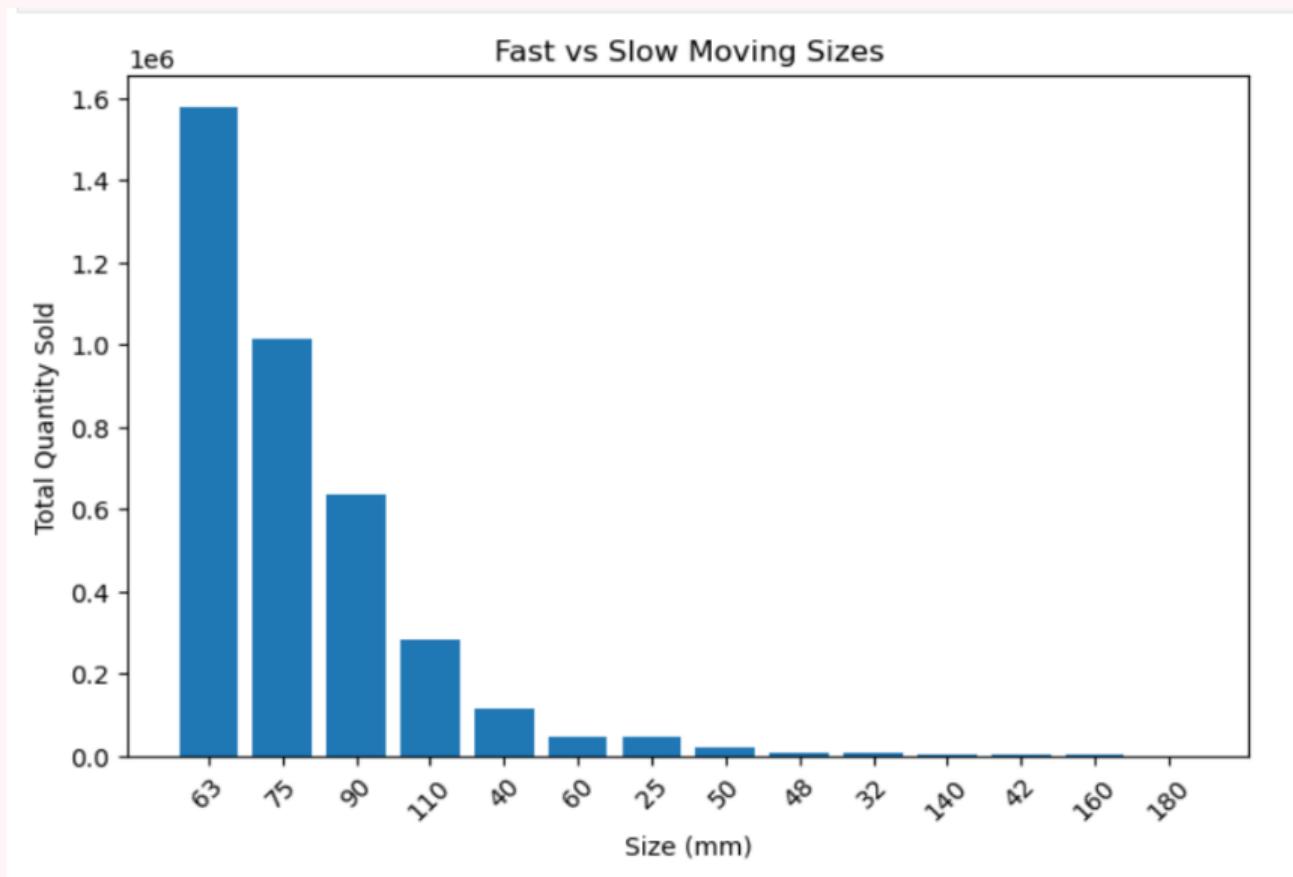
Pearson Correlation Heatmap



Distribution of Size (mm)



Fast vs Slow Moving Sizes



Key Findings:-

- Mid-size products (63mm–90mm) dominate overall sales volume.
- Grey colour category makes up almost 80% of orders.
- K-Means clustering shows two major customer groups.
- Sales vary strongly by region – highest in Guntur Mumbai.

Business Recommendations:-

- Increase stock for high-demand mid-range product sizes.
- Use targeted advertising in top-performing locations.
- Introduce premium pricing for high-value segments.
- Discontinue slow-moving SKUs to optimise profitability.

References:-

- ① Kothari Agritech Pvt. Ltd, “EDADV Dataset,” Provided for academic and analytical use, 2025.
- ② Abhilasha Nirmal, Ajinkya Konda, Gaurav Dudam, Shubham Marta, “EDADV-AnalysisCode,” GitHub. Available:
<https://github.com/Ajinkya106/EDADV-Analysis-Code.git>

Thank You!