

# Sales Analytics Report

Exploratory Data Analysis and Data Visualization.

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## 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.

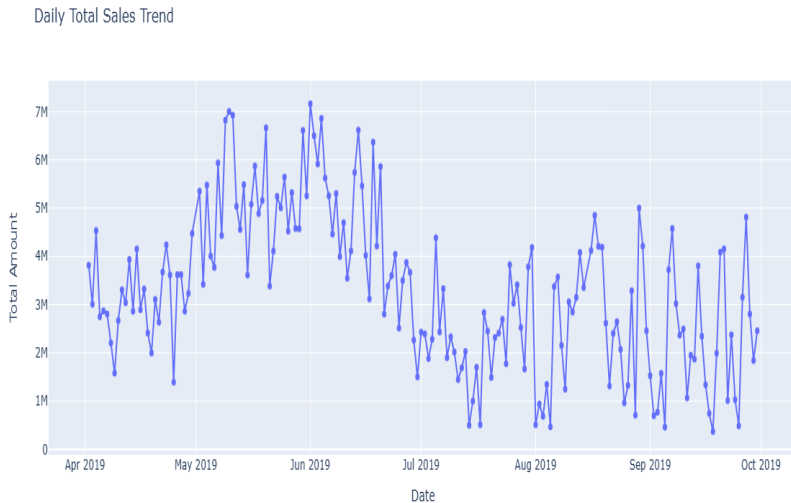
## Dataset Attributes:-

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

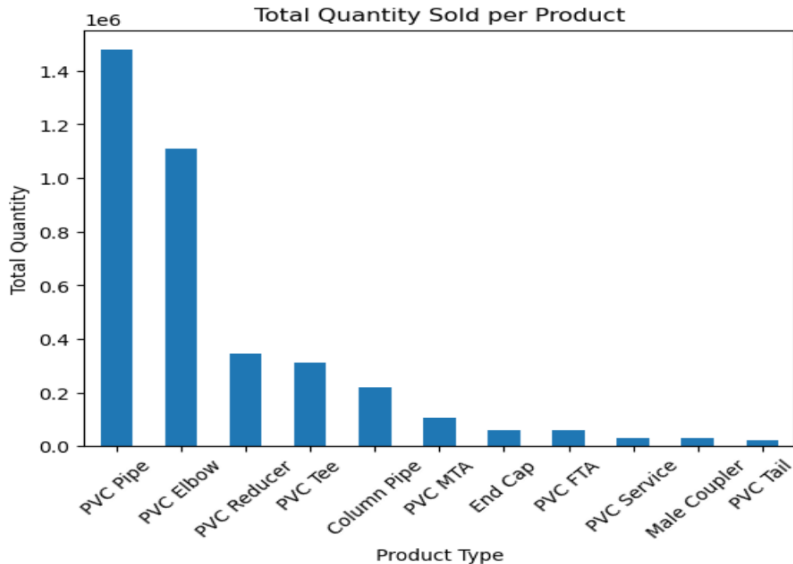
# Visualizations Overview:-

- 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.

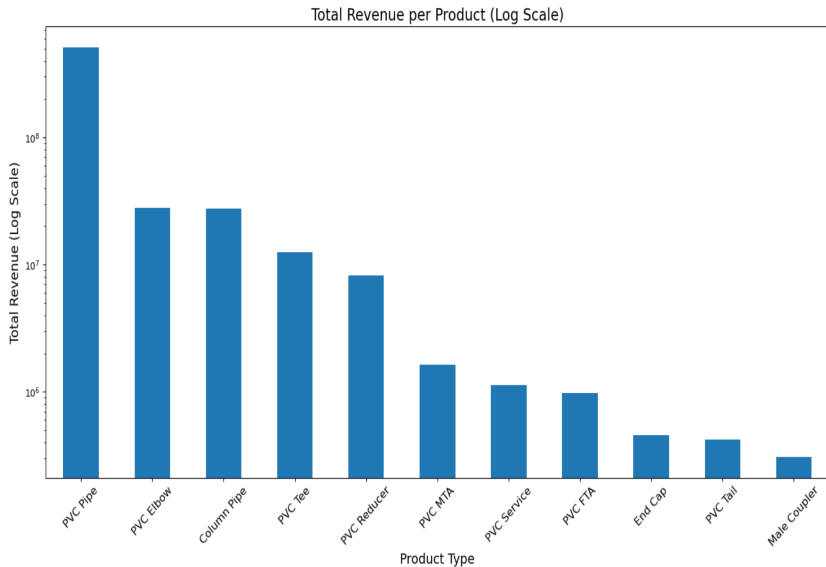
# Daily Sales Trend (Line Plot)



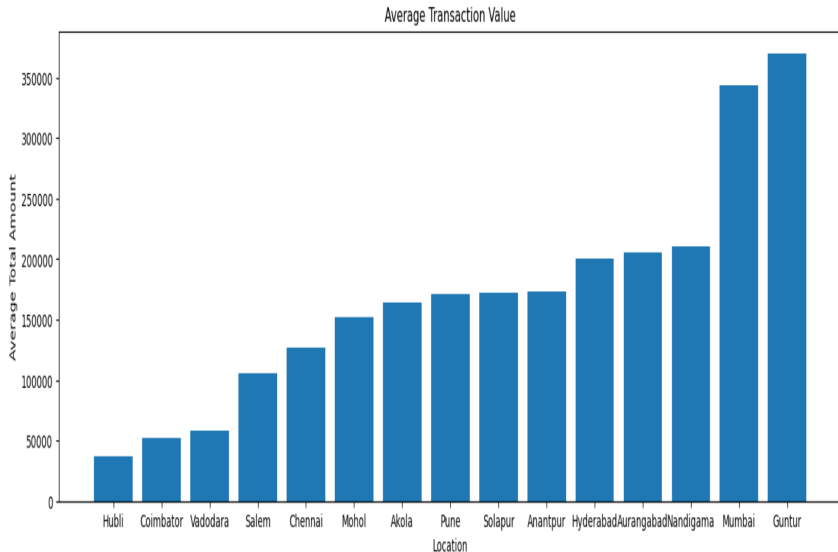
# Total Quantity Sold Per Product (Bar Plot)



# Total Revenue Per Product (Log Scale)

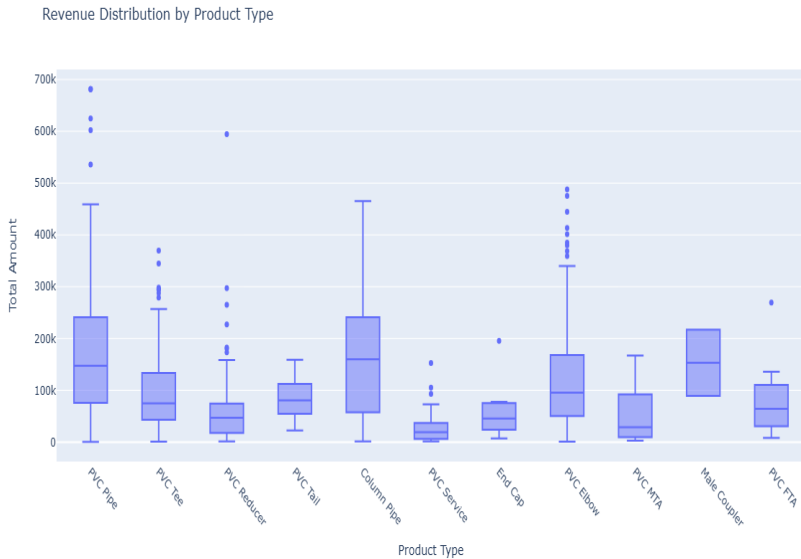


# Average Transaction Value by Location (Bar Plot)



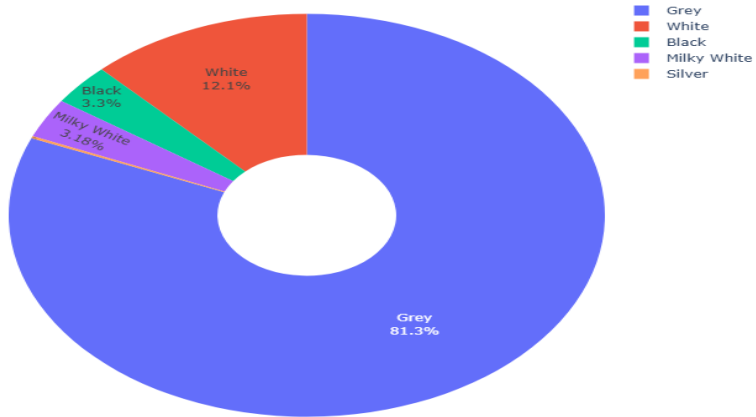


# Revenue Distribution by Product Type (Box Plot)

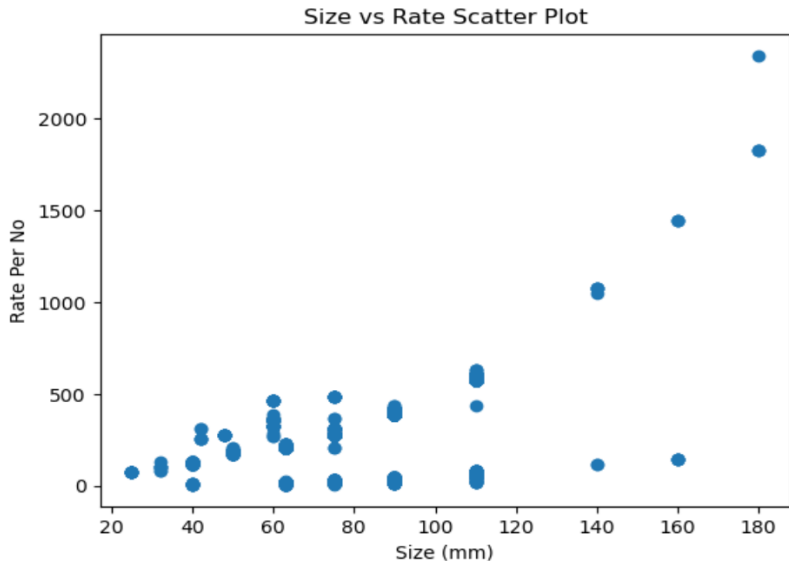


# Colour Distribution (Pie Chart)

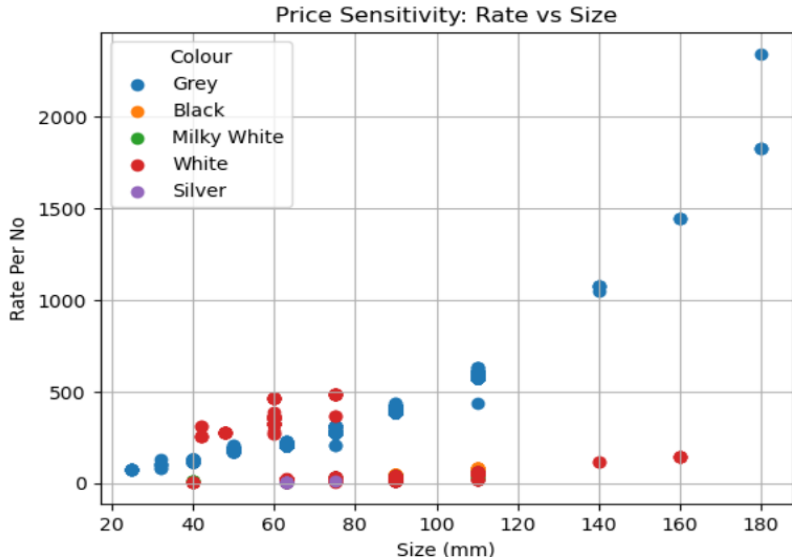
Colour Distribution



# Scatter Plot: Size vs Rate

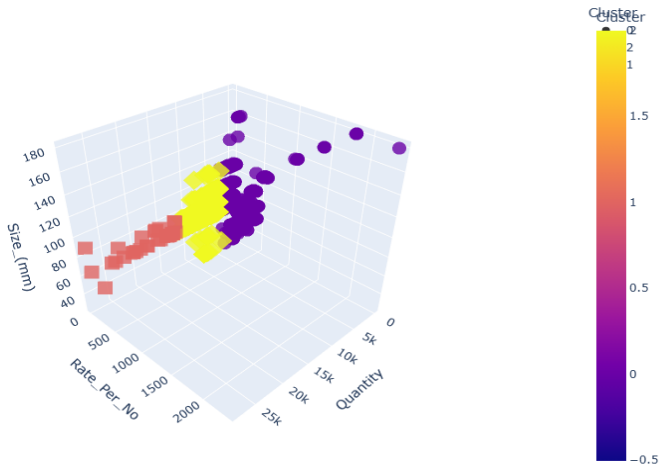


# Price Sensitivity: Rate vs Size (Grouped by Colour)

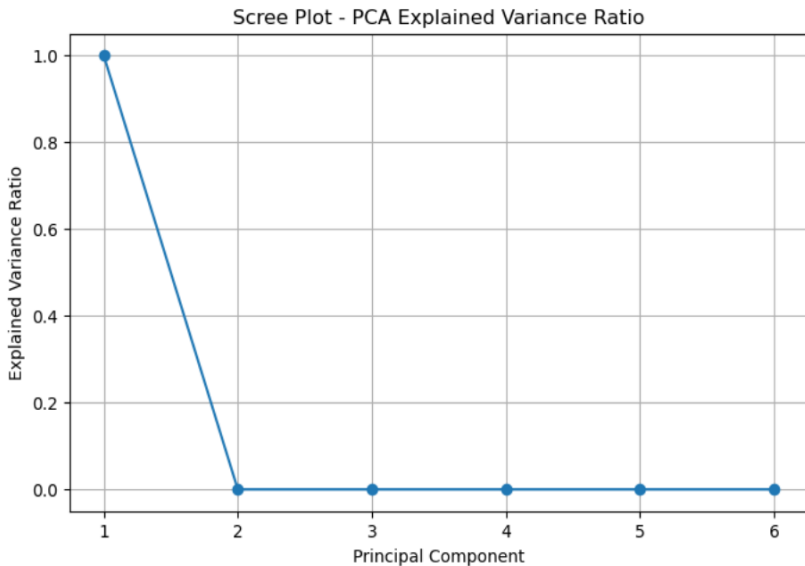


# 3D K-Means Clustering

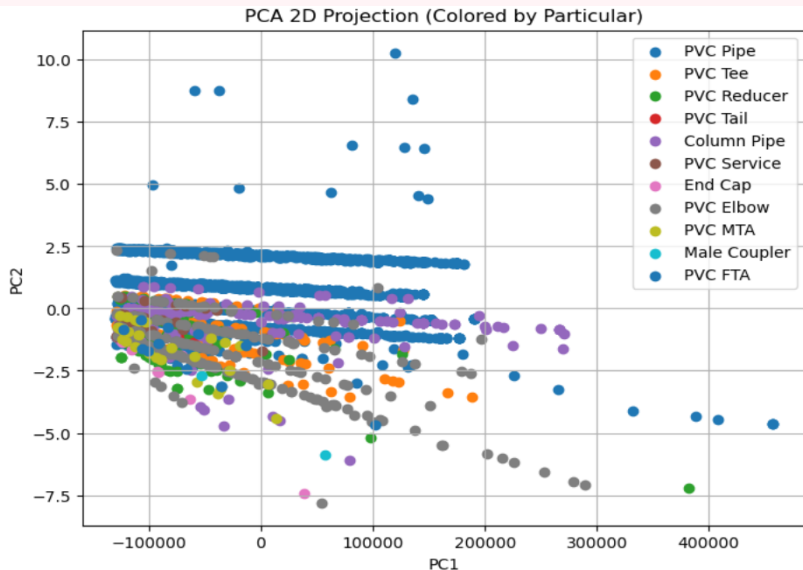
3D K-Means Clustering of Transactions



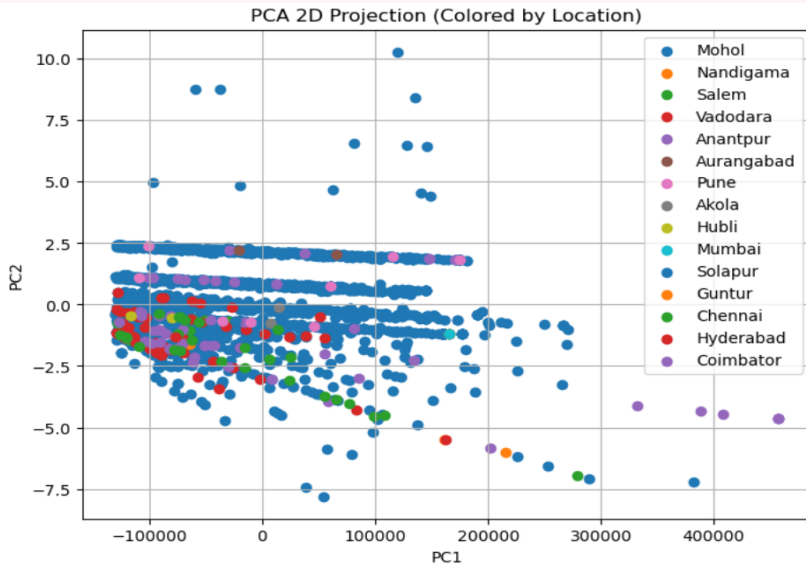
# PCA Scree Plot



# PCA 2D Projection by Product Type

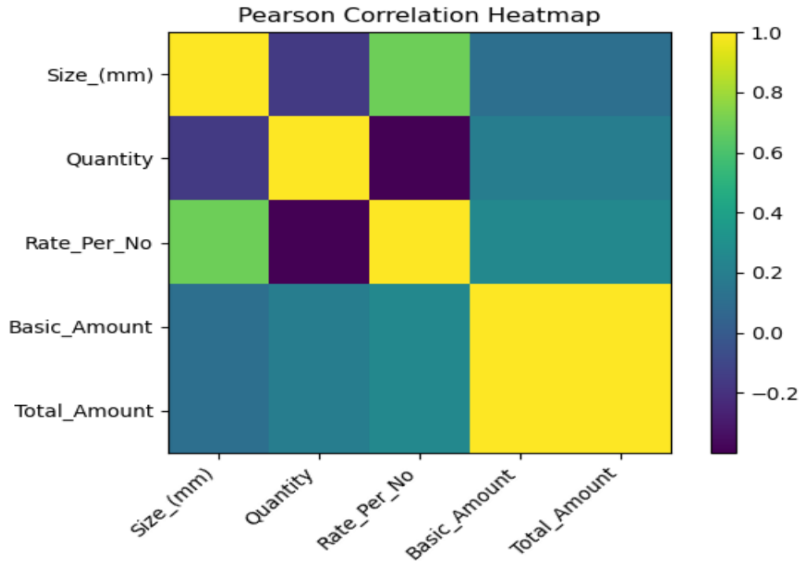


# PCA 2D Projection by Location

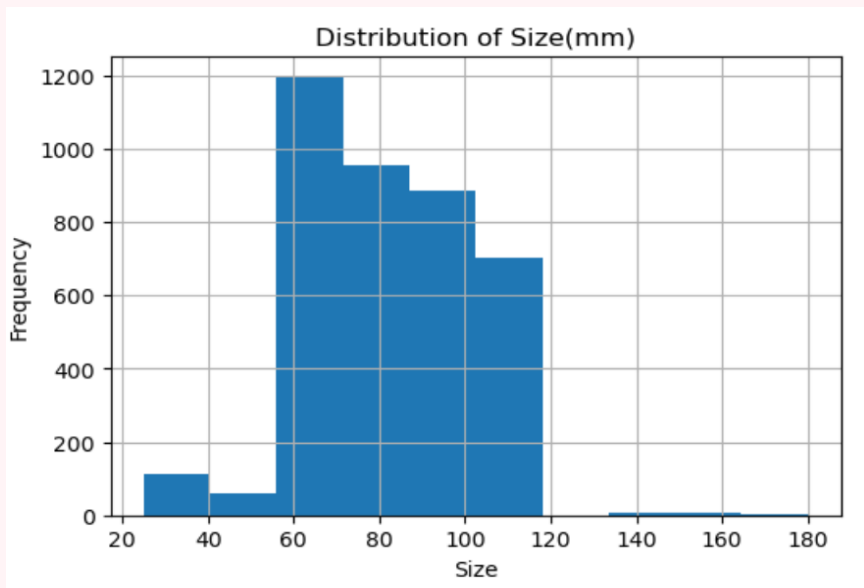




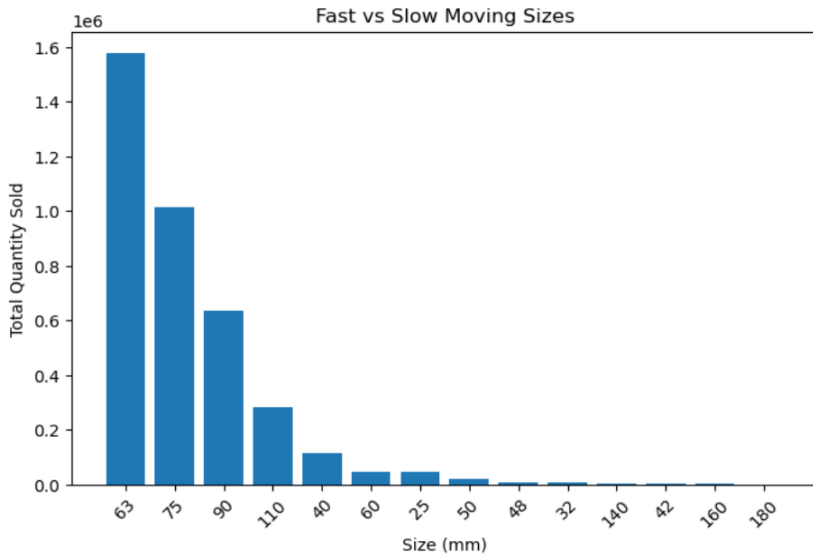
# Pearson Correlation Heatmap



# 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!**