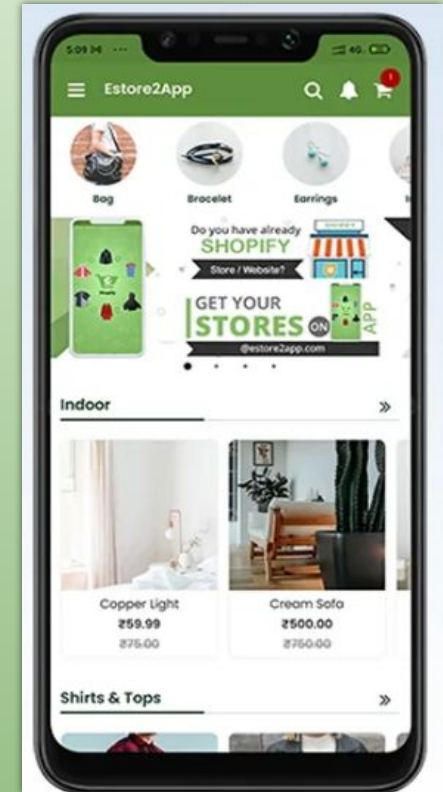# E-Commerce Data Analysis
Customer Behavior and Strategies

Shreya K

Customer Behavior Analysis

Insights
Age and Spending Patterns: Younger customers were more inclined to purchase lower-priced tech gadgets, while older customers spent more on home goods.

Higher-income customers made larger purchases

Finding	Description	Impact Level	Data
Age and Purchase	Younger customers show higher purchase frequency.	High	62% of frequent purchases are made by customers aged 25–35
Income and Product	High-income customers prefer premium and branded products	High	70% of premium product sales
Browsing behavior	Customers with longer browsing times show higher cart rates	Medium	45% cart abandonment for customers with site duration > 15 minutes.
Customer Engagement	Lack of personalized offers reduces customer retention.	Medium	Personalized campaigns increased retention by 20% during trials.

Potential strategies
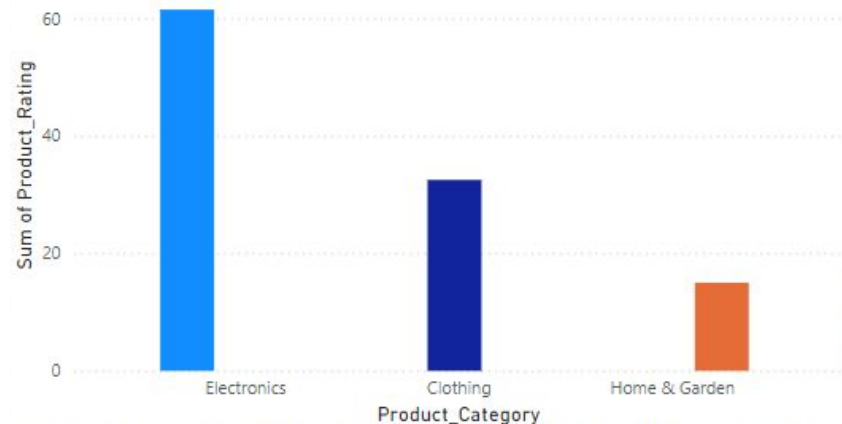**Targeted Marketing Campaigns:**
Implement targeted marketing campaigns based on **age**, **income level**, and **geographical location** to appeal to different customer segments.
Personalized offers for **tech enthusiasts** in City D or **fashion lovers** in City E could drive more tailored and effective marketing efforts.
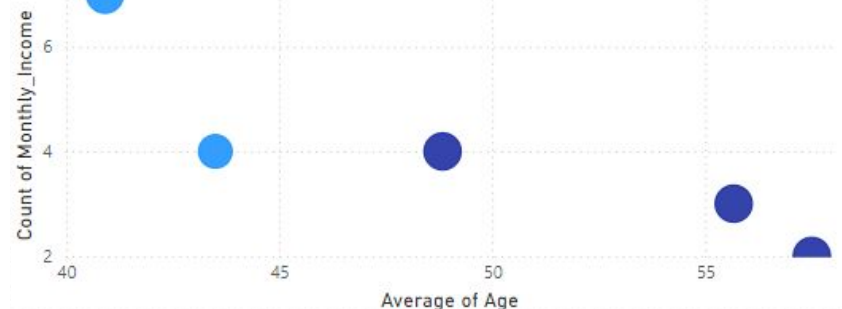
POWERBI Findings
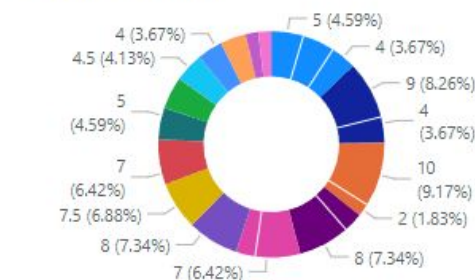
Data Loading

Ingest the the e_commerce dataset into databricks note
Key Drivers:
Discounts and Offers heavily influence customer purchase decisions

Data Cleaning

Handling missing values and removing Duplicates Aggregating numerical and categorical data

Behavioral Patterns Identified

1. **Loyalty and Retention**: Repeat customers form a significant part of the revenue. Focus on customer retention strategies can drive growth.
2. **Value-Oriented Shoppers**: Customers often respond well to discounts, free delivery, and cashback offers.
3. **Impulse Buying**: Flash sales and targeted advertisements increase impulse purchases, especially among younger customers.
4. **Trust and Convenience**: Customers prioritize trusted brands and hassle-free returns over price competitiveness.

Data Transformation

Exploratory Data Analysis
Male customers show higher spending on electronics and gadgets.
Female customers tend to prefer fashion and beauty products.
Customers with an **annual income >70,000** have a higher average order value (AOV).
Lower-income customers (<40,000) prefer discounts and budget-friendly products.

THANK YOU!