

**Project Scope of Work**

**Project Title:** Consumer Behavior and Shopping Habits Analysis

**Data Analyst:** Shijin Ramesh

**Client/Sponsor:** Open dataset from Kaggle  
(<https://www.kaggle.com/datasets/zeesolver/consumer-behavior-and-shopping-habits-dataset>)

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**Purpose:**

To analyze consumer shopping behavior and identify demographic and behavioral patterns that impact high-value transactions and payment method preferences. This project aims to deliver insights that support retail marketing strategy, digital targeting, and product personalization using Python, R, Power BI and SQL.

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**Scope / Major Project Activities:**

Activity	Description
Data Collection	Load the dataset from Kaggle and inspect structure
Data Cleaning	Handle missing values, standardize column formats, and filter irrelevant data
EDA (Python/R)	Use descriptive statistics and visualizations to explore variable distributions
Customer Segmentation	Group customers based on age, income, frequency, and payment behavior
Cohort Analysis	Identify repeat customers and evaluate their behavior over time
Trend Analysis	Visualize purchase volume, product preferences, and payment method trends
Statistical Insights	Apply correlation tests or hypothesis testing (in R)
Dashboarding	Create interactive visuals in Power BI for decision-makers
Reporting	Create project summary report and README with key takeaways

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**Tools & Technologies Used:**

- **Python:** pandas, seaborn, matplotlib for data cleaning and visual EDA
- **R:** dplyr, ggplot2 for statistical testing and demographic group comparison
- **SQL:** For aggregating customer data by category, frequency, and spend level

- **Power BI:** For building visual dashboards showing top insights and marketing actions
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### Project Objectives:

- Identify which demographics correlate with higher spending
  - Discover preferred payment methods across income and age groups
  - Segment customers based on frequency and loyalty behavior
  - Build visual dashboards for trends in product categories and payment methods
  - Recommend marketing and targeting strategies based on findings
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### Project Exclusions:

- No machine learning prediction or advanced modeling
  - No real-time user tracking or behavioral prediction
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### Deliverables:

Deliverable	Description
Cleaned Dataset	Processed version with formatted and filtered records
Python Notebook	EDA, segment analysis, and visual insights
R Markdown / Script	Statistical summaries and demographic trend charts
Power BI Dashboard	Visual summary for stakeholders and marketing teams
SQL Query Set (Optional)	SQL used to segment and aggregate customer behavior
README.md File	GitHub-friendly summary with objectives, tools, and key outputs
Project Report (.pdf)	Final report for portfolio and recruiters

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### Schedule Overview:

Milestone	Expected Completion	Description
Data Cleaning Completed	Day 1	Remove nulls, format categories
Python/R EDA Completed	Day 2–3	Create visuals, customer segments, and insights
Dashboard Build (Power BI)	Day 4	Finalize dashboard with interactivity
Report + GitHub Upload	Day 5	Summarize insights in report and push final files

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### **Estimated Completion Timeline:**

**Within 5 days of project start, assuming full-day availability**