

****Customer Segmentation Using RFM Analysis – Report****

1. Introduction

Customer segmentation is a crucial task in marketing analytics. This project applies ****RFM (Recency, Frequency, Monetary) Analysis**** to divide customers into meaningful groups. Businesses can use these groups to design targeted strategies that improve customer retention, increase revenue, and reduce churn.

2. Dataset Description

The dataset used is the ****Online Retail Dataset**** (UCI/Kaggle), containing customer transactions including:

- ****InvoiceNo, StockCode, Description, Quantity, InvoiceDate, UnitPrice, CustomerID, Country****.

This dataset captures customer purchases over a specific time period.

3. Methodology

1. ****Data Cleaning****

- Removed missing values in `CustomerID`.
- Dropped duplicate entries.
- Removed canceled invoices and invalid quantities.

2. ****Feature Engineering****

- ****Recency****: Days since the customer's last purchase.
- ****Frequency****: Number of purchases made by the customer.
- ****Monetary****: Total amount spent by the customer.

3. ****RFM Scoring****

- Each metric scored from 1–5 (higher = better).
- Combined into overall **RFM score**.

4. **Segmentation**

- Customers grouped into categories like **Champions, Loyal Customers, At Risk, Hibernating**.

5. **Visualization & Insights**

- Heatmaps to show RFM distribution.
- Bar charts to compare segment sizes.

4. Key Findings

- A small group of **Champions** drive the highest revenue.
- **Loyal Customers** form the backbone of consistent sales.
- **At Risk Customers** need re-engagement before churn.
- **Hibernating Customers** are inactive and can be targeted with promotions.

5. Marketing Recommendations

- Reward **Champions** with loyalty points or exclusive offers.
- Keep **Loyal Customers** engaged with personalized communication.
- Offer discounts or reminders to **At Risk** customers.
- Launch win-back campaigns for **Hibernating Customers**.

6. Conclusion

RFM analysis proved to be an effective tool for customer segmentation, enabling businesses to identify key customer groups and design actionable marketing strategies.