Project Title

“Customer Intelligence & Behavioral Analytics Dashboard”

Turning Customer Behavior Data into Strategic Business Decisions

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Report Prepared By
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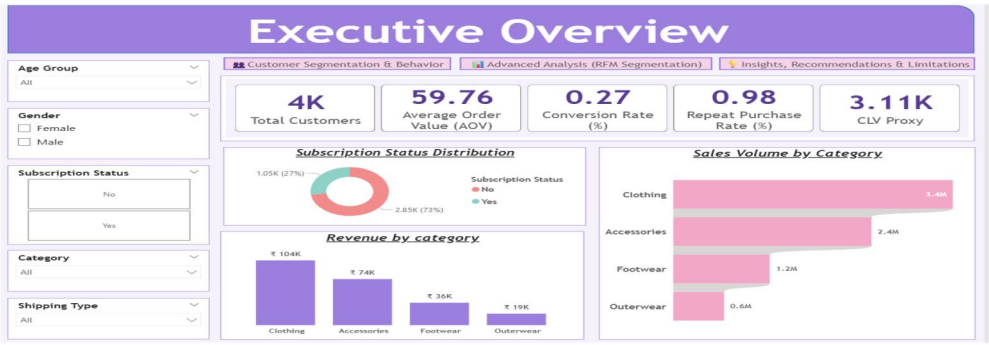
Tools & Technologies Used

Power BI
SQL
DAX
EDA using Python
Data Modeling



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1. Project Overview

This project analyzes customer purchasing behavior to uncover actionable insights that improve retention, increase average order value (AOV), and reduce over-reliance on discount-driven sales.

Using customer-level behavioral data, the analysis focuses on:

- Revenue contribution by customer segments
- RFM-based behavioral segmentation
- Purchase frequency vs. spend patterns
- Subscription impact on repeat behavior
- Discount influence on customer satisfaction

The objective is to answer the core business question:

How can customer behavior insights be used to improve retention, increase customer value, and support sustainable revenue growth?

2. Dataset Summary

- ~4,000 customer records
- 18 Columns
- Missing Data: 37 values in review rating column.

Key Features:

- Demographics: Age, Gender
- Behavioral Indicators: Purchase Frequency, Previous Purchases
- Financial Metrics: Average Order Value (AOV), CLV Proxy
- Engagement Indicators: Subscription Status
- Satisfaction Metric: Review Rating
- Promotional Behavior: Discount Applied
- Payment Method

Data Constraints:

- No transaction-level timestamps (recency approximated)
- CLV calculated as a proxy metric
- No marketing channel or geographic segmentation

3. Data Preparation & Modeling

Data was cleaned and structured prior to analysis.

Data Cleaning

- Standardized column formats
- Verified categorical consistency
- Checked for missing values

Feature Engineering

- Created **RFM Segments** (Champions, Loyal, Occasional, At Risk)
- Derived **CLV proxy metric**
- Categorized purchase frequency levels

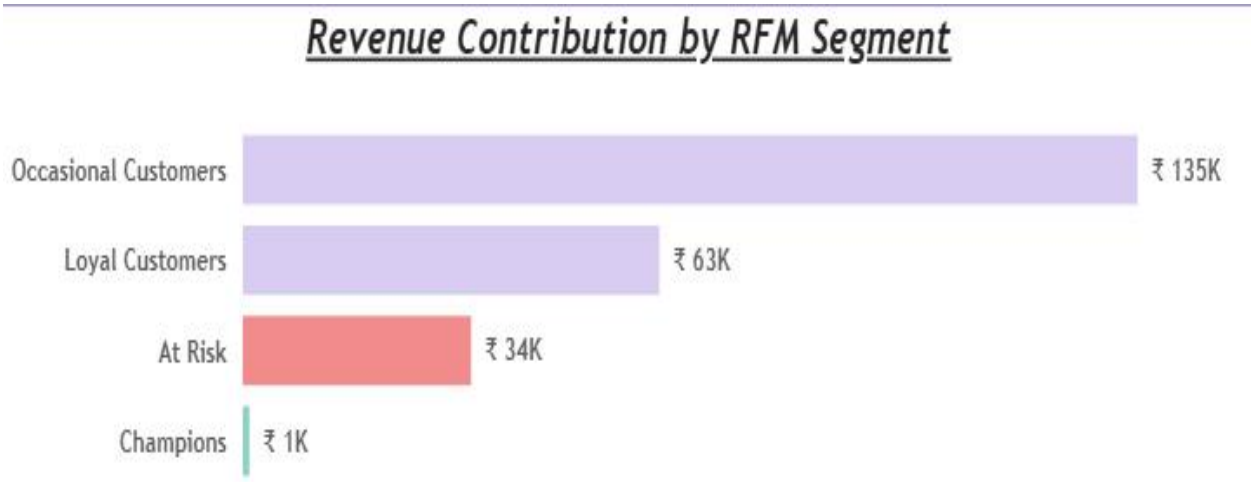
Analytical Modeling

- Grouped customers by RFM logic
- Calculated revenue and AOV per segment
- Aggregated behavioral metrics for dashboard KPIs

This modeling enabled business-ready segmentation instead of simple descriptive reporting.

4. Behavioral & Segmentation Analysis

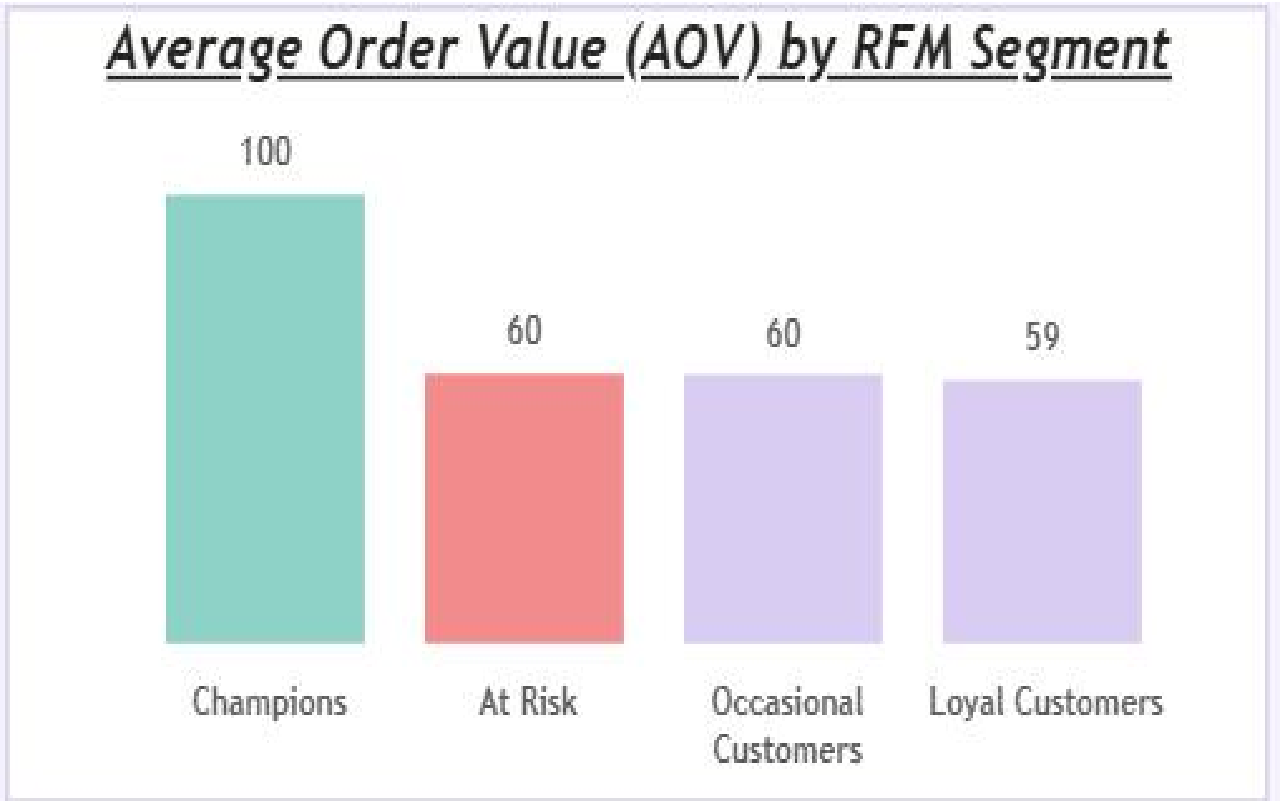
4.1 Revenue Contribution by RFM Segment



- Occasional Customers contribute the highest total revenue.
- Champions show the highest AOV but represent a very small share of customers.
- Loyal and At-Risk customers contribute moderate revenue.

Insight: Revenue is currently volume-driven rather than loyalty-driven.

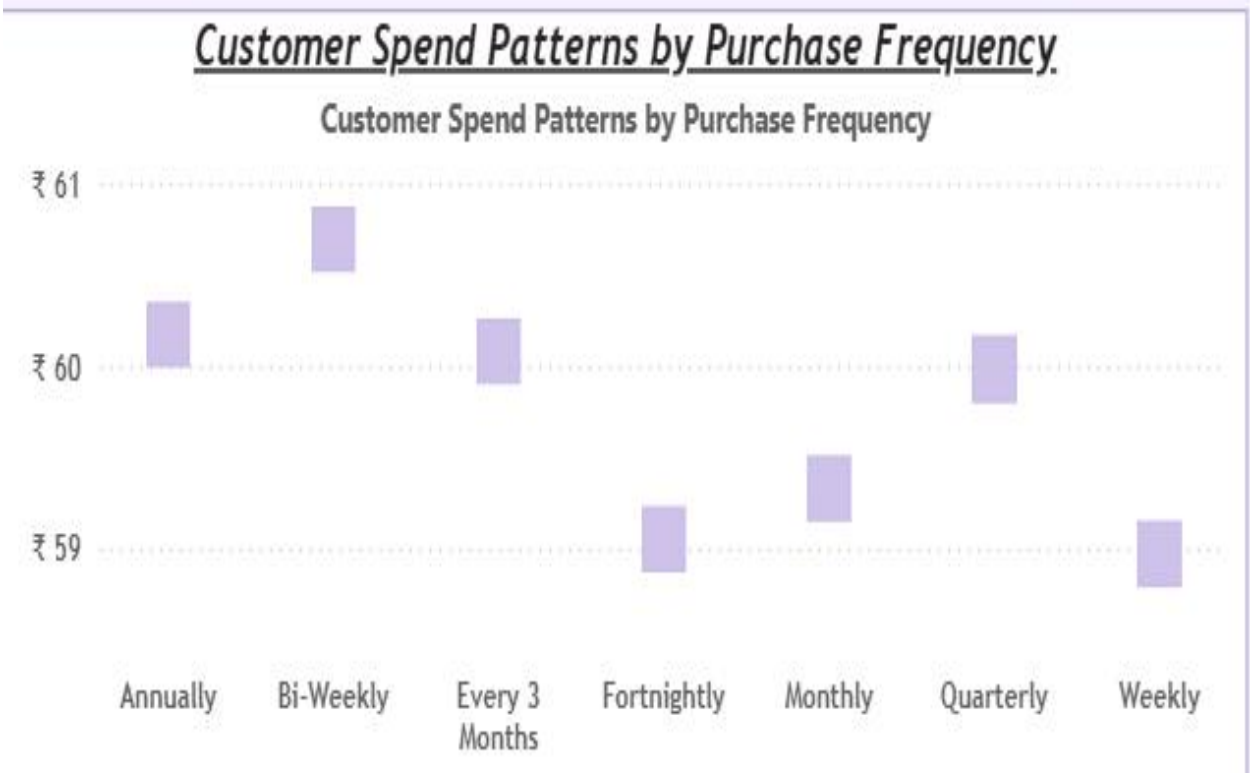
4.2 Average Order Value by Segment



- Champions have the highest AOV (~₹100).
- Other segments show lower and relatively similar AOV levels.

Insight: Expanding the Champion segment could significantly increase profitability.

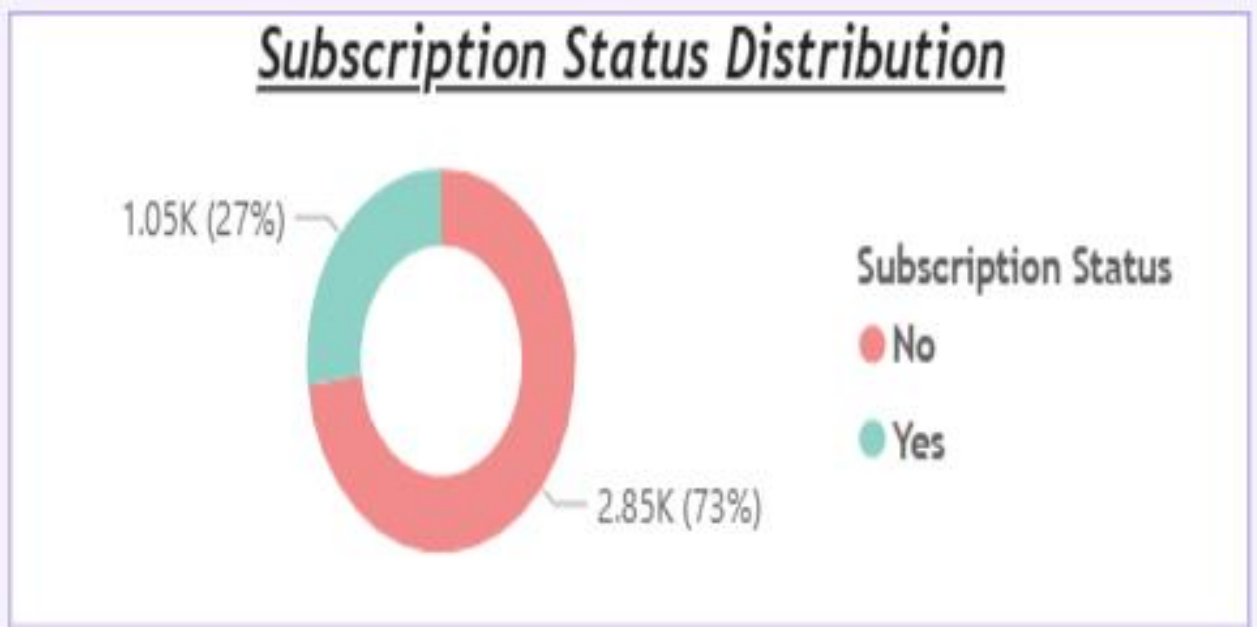
4.3 Purchase Frequency vs Customer Spend



- Weekly buyers do not show significantly higher AOV.
- Spend levels remain relatively stable across frequency levels.

Insight: Increased frequency does not automatically increase order value.

4.4 Subscription Behavior



- Subscribed users show stronger repeat behavior indicators.
- Majority of customers are non-subscribers.

Insight: Subscription adoption remains a growth opportunity.

4.5 Discount vs Review Rating

- Ratings remain nearly identical whether discounts are applied or not.
- Average rating difference is minimal (e.g., 3.8 vs 3.7).

Insight: Discounts do not significantly influence customer satisfaction.

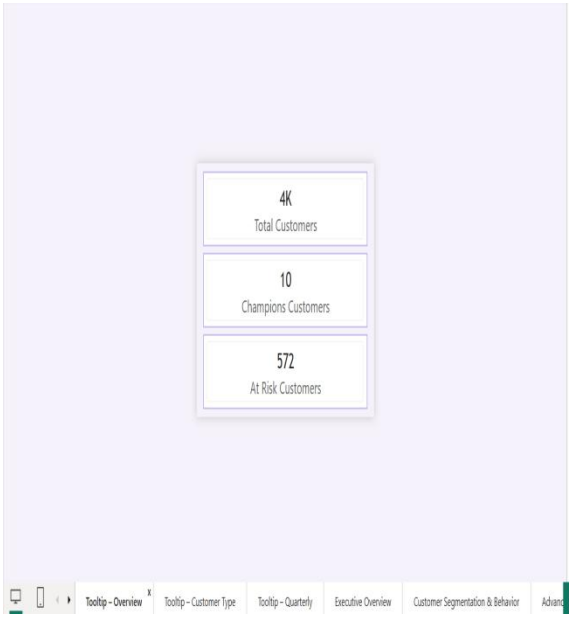
5. Power BI Dashboard Design

The dashboard was designed with:

- Multi-page structure (Overview, Customer Insights, RFM Analysis, Business Insights)
- Interactive navigation buttons

- Tooltip-enabled visual exploration
- KPI summary cards for quick executive review
- Clear visual hierarchy and consistent formatting

The goal was to create a decision-support dashboard rather than a static academic report.



6. Key Business Insights

1. Revenue is primarily driven by Occasional Customers.
2. Champions deliver the highest AOV but form a small base.
3. Frequency does not strongly increase order value.
4. Discounts have minimal impact on customer ratings.
5. Subscription behavior indicates stronger repeat engagement.

7. Actionable Recommendations

1. Convert Occasional Customers :Introduce light loyalty incentives to increase purchase frequency within the highest revenue segment.

2. Expand the Champion Segment :Replicate high-AOV customer traits through premium offerings and targeted experiences.

3. Implement Smart Bundling :Encourage higher basket value instead of relying solely on repeat purchases.

4. Reduce Blanket Discounting :Shift strategy toward product and service experience rather than price reductions.

5. Strengthen Subscription Adoption :Promote convenience-based benefits to increase repeat behavior and retention.

8. Limitations & Assumptions

- Recency approximated due to lack of transaction dates
- CLV calculated as a proxy metric
- No marketing channel data for attribution analysis
- No geographic or income segmentation available

These constraints were clearly acknowledged to ensure analytical transparency.

9. Conclusion

This project demonstrates how structured segmentation and behavioral analytics can translate raw customer data into strategic decision support.

Rather than focusing only on descriptive reporting, the dashboard:

- Identifies revenue concentration risks
- Highlights profitability opportunities
- Challenges discount dependency
- Suggests retention-focused growth strategies

The final output is an executive-ready analytics product aligned with real-world business decision-making.