

Credit Card Data Analysis and Customer Insights

1. Project Overview

Objective:

To visualize and analyze credit card customer behavior, transaction patterns, and financial performance using interactive dashboards. The aim is to help stakeholders make data-driven decisions that improve customer satisfaction, optimize credit card features, and drive business profitability.

Problem Statement:

The business faced challenges in understanding customer behavior and identifying profitable segments. Existing reports lacked interactivity and depth, making it hard for management to explore data by demographics, payment methods, and product types. The Power BI dashboard solves this by offering deep, interactive, and real-time analytics.

2. Data Description

Data Source:

- Internal financial and customer datasets in CSV/Excel format

Data Volume:

- Approximately **10,000+ clients** and **500,000+ transactions**

Key Data Fields:

- Card Type (Silver, Gold, Blue, Platinum)
- Payment Methods (Swipe, Chip, Online)
- Revenue, Income, Interest Earned
- Client Demographics (Age, Gender, State, Home Ownership, Job, Education)
- Expense Categories (Bills, Fuel, Travel, Food, etc.)
- Satisfaction Score

Data Cleaning Process:

- Removed duplicates
- Treated null/missing values
- Standardized column names

- Converted categorical variables
- Used Power Query to transform and filter record

3. Target Audience

- Senior Management: For tracking overall financial and customer performance
- Marketing Teams: To identify customer segments for targeted campaigns
- Product Teams: To refine card features based on usage trends
- Customer Service: To focus on segments with low satisfaction scores

4. Key Features

-  **Summary KPIs:** Total Revenue (₹55M), Total Income (₹576M), Interest Earned (₹7.84M)
-  **Trend Analysis:** Revenue and interest trends by week, quarter, and category
-  **Demographic Filters:** Age group, gender, income group, education, job
-  **Interactive Reports:** Drill-down by card type, state, payment type, and spending category
-  **Card Category Analysis:** Blue Card performs best; Platinum is least used
-  **Top States Performance:** Texas, New York, and California
-  **Satisfaction Analysis:** Majority of customers have a Satisfaction Score of 3

5. Tools and Techniques

Tools Used:

- **Power BI:** Data modeling, DAX, visualizations
- **Excel:** Pre-processing raw datasets
- **Power Query Editor:** Data transformation and merging

Techniques Applied:

- DAX Measures for revenue, interest, count metrics
- Advanced filters and slicers for custom analysis
- Custom tooltips, bookmarks, and drill-through pages
- Time-based calculations (weekly revenue drops, quarterly performance)

6. Project Scope and Limitations

Scope:

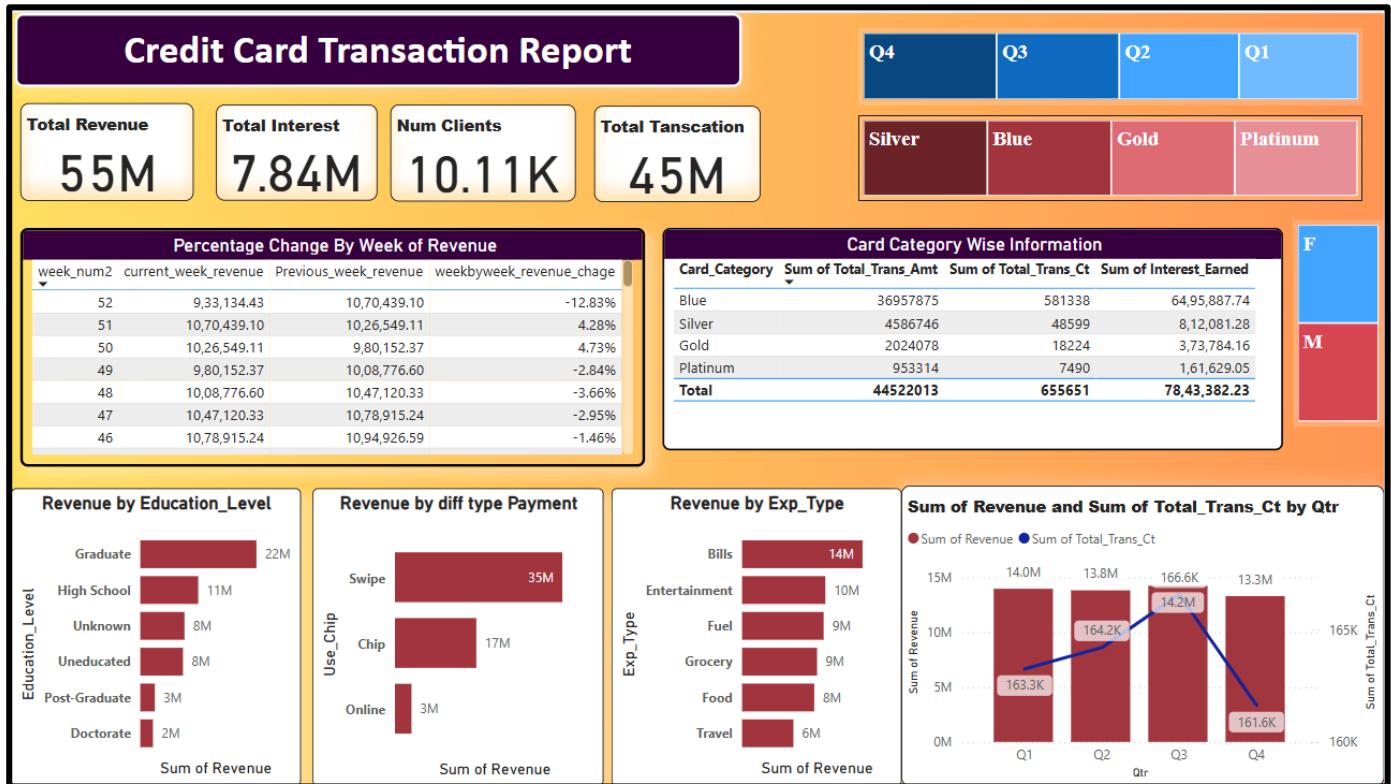
- Focused on historical transaction and customer data
- Covers performance metrics by demographics, geography, and product usage
- Weekly and quarterly views for trend analysis

Limitations:

- No integration of real-time or external market data
- Predictive modeling not included (only descriptive analysis)
- Satisfaction data lacks textual feedback insights

7. Outcome / Expected Results

Report 1: Credit Card Transaction Report



Introduction:

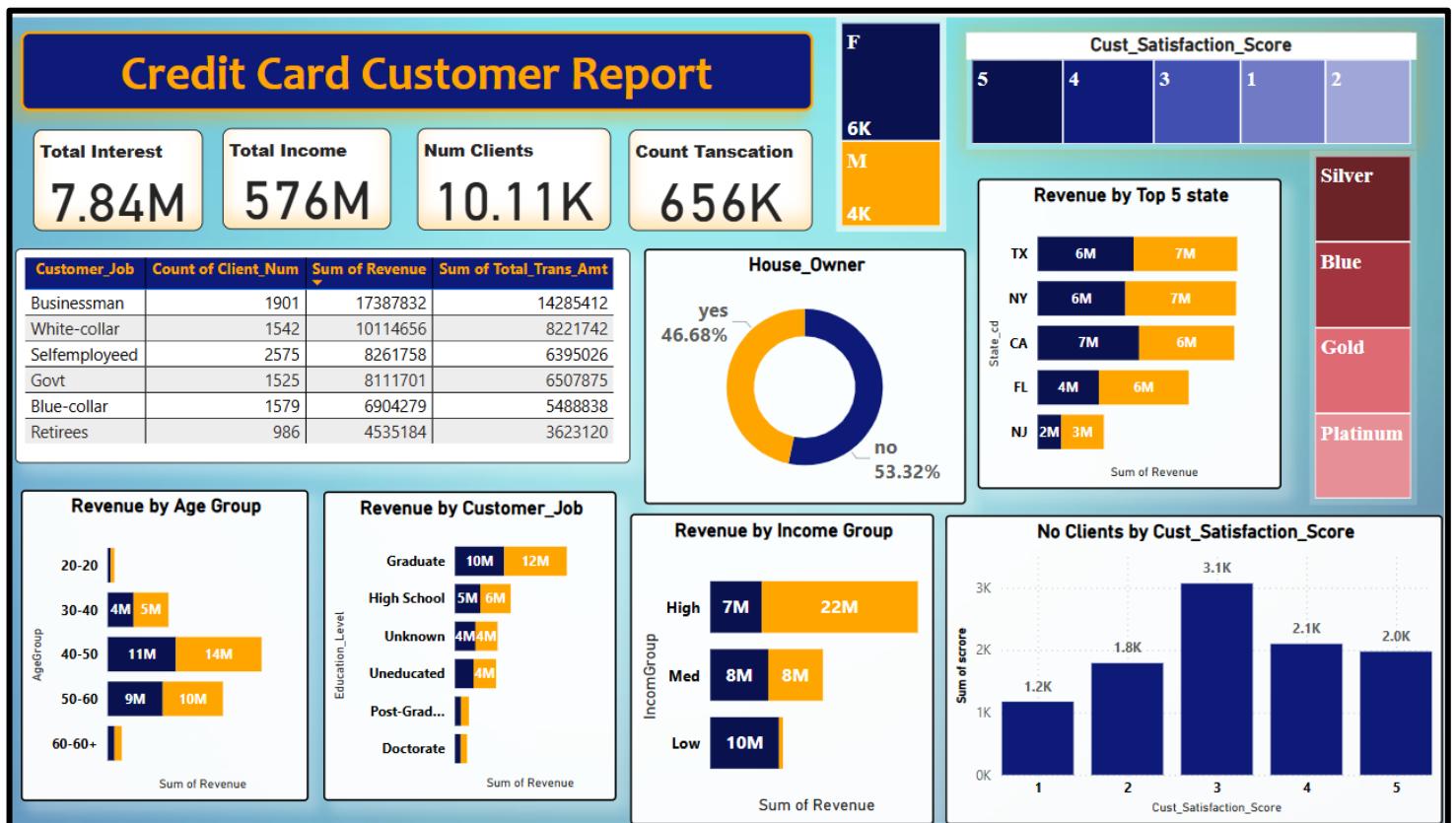
The Credit Card Transaction Report explores transaction-level patterns and behaviors to understand how different card types, payment methods, education levels, and categories impact business performance. This report offers detailed visibility into how customers use their credit cards — including the frequency and value of transactions — while revealing key trends in interest income and revenue generation. It serves as a foundational layer for understanding product performance, usage habits, and targetable customer segments.

Key Insights:

- **Blue Card** performs best across all metrics with ₹36.96M in revenue, 581,338 transactions, and ₹6.4M interest earned.
- **Platinum Card** is the lowest performer in revenue and usage.
- **Graduates** contribute the highest revenue among education levels (₹22M), while Doctorates contribute the least (₹2M).
- **Swipe** is the most used payment type (₹35M), followed by Chip and Online.
- **Bills, Entertainment, Fuel, and Grocery** are the top expense categories.

- Q3 shows the highest revenue across all quarters.
- Week 52 reports a noticeable drop in revenue, aligning with business seasonality trends.

Report 2: Credit Card Customer Report



Introduction

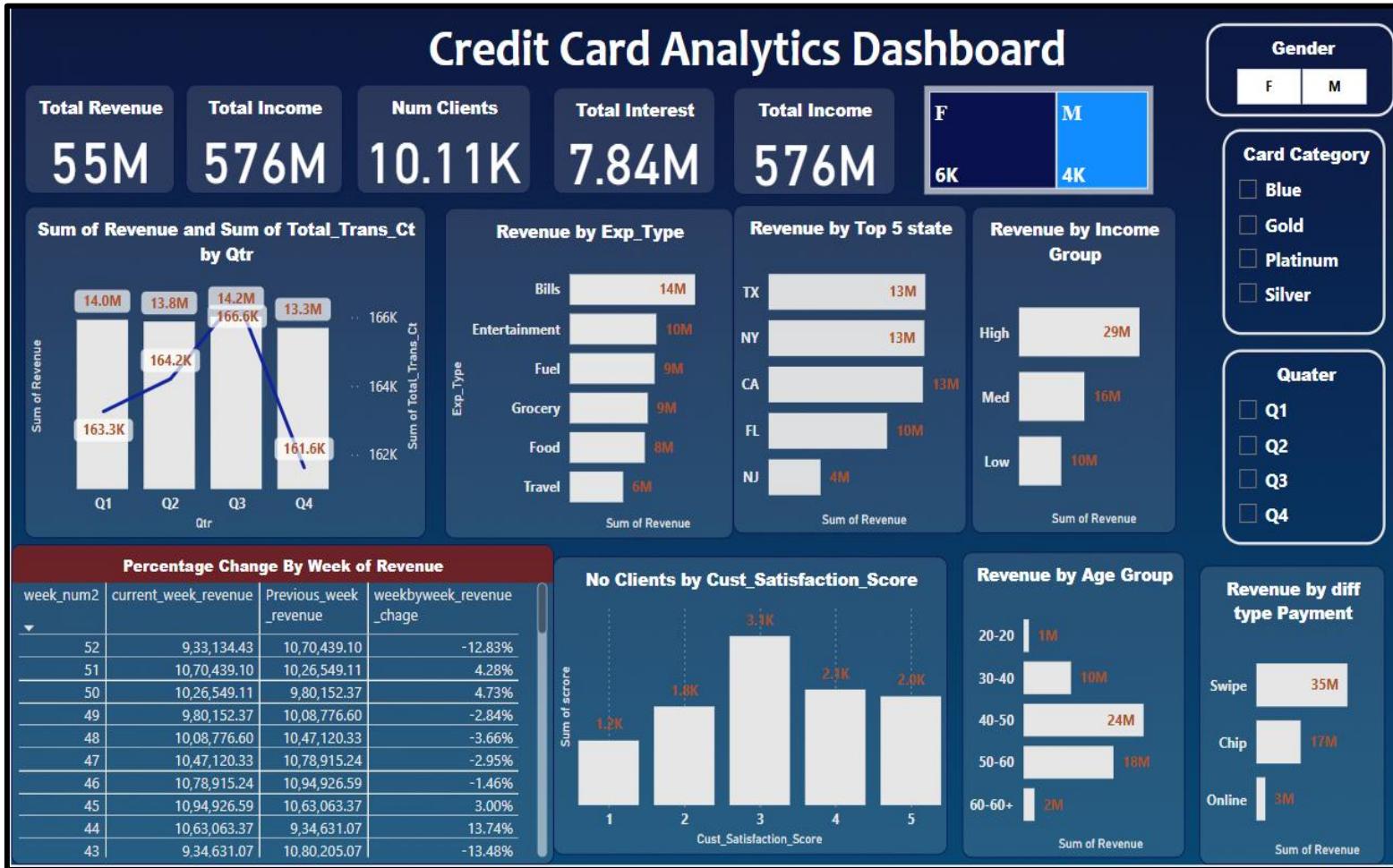
The Credit Card Customer Report provides an in-depth analysis of customer demographics, job profiles, income levels, and satisfaction scores. It highlights how customer profiles relate to revenue generation and transaction activity, offering a deeper view into customer behavior patterns.

Key Insights:

- Businessmen contribute the highest revenue (₹17.3M) and transaction amount among job categories.
- Self-employed individuals form the largest client base (2,575 clients).
- 53.32% of clients are not homeowners, while 46.68% own homes.

- High-income group contributes the highest revenue (₹22M), with Medium and Low-income groups following.
- Clients aged 40–50 generate the most revenue, making them a key demographic.
- Graduates and Post-graduates show the highest spending among education levels.
- Customer Satisfaction Score ‘3’ has the largest number of clients (3.1K), indicating room for improvement in service.
- Top revenue-generating states are TX, NY, and CA, with relatively equal performance.

Credit Card Analytics Dashboard



Introduction:

This dashboard provides an overall performance view of the credit card business by tracking revenue, client demographics, expense categories, and payment types. It presents summary KPIs and visualizes revenue trends across quarters, age groups, and income levels.

Conclusion:

- ❑ Total Revenue stands at ₹55M with Total Income of ₹576M and Interest Earned of ₹7.84M.
- ❑ 10.11K clients are actively using the credit card services.
- ❑ Bills is the highest earning expense category (₹14M), followed by Entertainment, Grocery, and Fuel.
- ❑ Top-performing states are Texas, New York, and California, each contributing ₹13M.
- ❑ High-income customers lead in revenue contribution with ₹29M.
- ❑ Week 52 shows a -12.83% revenue drop, indicating seasonal fluctuation.
- ❑ Most payments are made via Swipe (₹35M), with Chip and Online trailing behind.
- ❑ Customers aged 40–50 generate the most revenue (₹24M).
- ❑ Satisfaction Score ‘3’ is the most common, suggesting an average service experience across the customer base.

8. Future Enhancements

- **Add predictive analytics** for customer churn and lifetime value
- **Integrate real-time data** from bank APIs or CRM
- **Enable mobile optimization** of the dashboard
- **Sentiment analysis** of customer feedback
- **Use machine learning models** to recommend card upgrades or offers