

CREDIT CARD CUSTOMER AND TRANSACTION REPORT

Project Overview :

This project analyzes credit card customer behavior and transaction patterns to uncover key business insights that help financial institutions improve revenue, customer retention, and product performance. Using detailed financial and transactional data, this analysis evaluates revenue trends, spending habits, card usage preferences, and high-value customer segments. The insights guide data-driven decisions in marketing, product strategy, and risk management.

Objective :

The goal of this project is to analyze customer demographics and transaction behaviors to understand revenue patterns, identify high-performing segments, and recommend strategies to improve credit card business performance.

Dataset :

The dataset includes:

Customer Dataset:

- Client_Num - Unique identifier assigned to each credit card customer.
- Customer_Age - Age of the customer in years.
- Gender - Customer's gender (M/F).
- Dependent_Count - Number of dependents the customer is responsible for.
- Education_Level - Highest education qualification of the customer.
- Marital_Status - Marital status of the customer (Single/Married).

- State_cd - State code representing the customer's residential location.
- Zipcode - Customer's residential postal code.
- Car_Owner - Indicates whether the customer owns a car (yes/no).
- House_Owner - Shows if the customer owns a home (yes/no).
- Personal_Loan - Indicates whether the customer has a personal loan (yes/no).
- contact - Preferred communication channel used by the customer (cellular/telephone/unknown).
- Customer_Job - Occupation category of the customer (Businessman, Govt, Retirees, etc.).
- Income - Annual income of the customer.
- Cust_Satisfaction_Score - Customer's rating of satisfaction on a scale of 1–5.

Credit Card Dataset:

- Client_Num - Customer ID linking transaction data to customer details.
- Card_Category - Type of credit card issued (Blue, Silver, Gold, Platinum).
- Annual_Fees - Yearly fee charged for the credit card.
- Activation_30_Days - Number of transactions performed within the first 30 days of activation.
- Customer_Acq_Cost - Cost incurred by the bank to acquire the customer.
- Week_Start_Date - Start date of the week for which the transaction is recorded.
- Week_Num - Numeric representation of the week in the year.
- Qtr - Quarter of the year in which the transaction occurred (Q1–Q4).
- current_year - Year for the transaction record.
- Credit_Limit - Maximum spending limit assigned to the customer.
- Total_Revolving_Bal - Customer's unpaid revolving credit balance.

- Total_Trans_Amt - Total amount spent by the customer in a given period.
- Total_Trans_Ct - Number of transactions performed by the customer.
- Avg_Utilization_Ratio - Average ratio of credit used compared to total credit limit.
- Use_Chip - Type of transaction method used (Swipe/Chip/Online).
- Exp_Type - Category of expenditure (Bills, Fuel, Entertainment, Grocery, etc.).
- Interest_Earned - Interest amount earned by the bank from the customer.
- Delinquent_Acc - Number of times the customer's account was delinquent/past due.

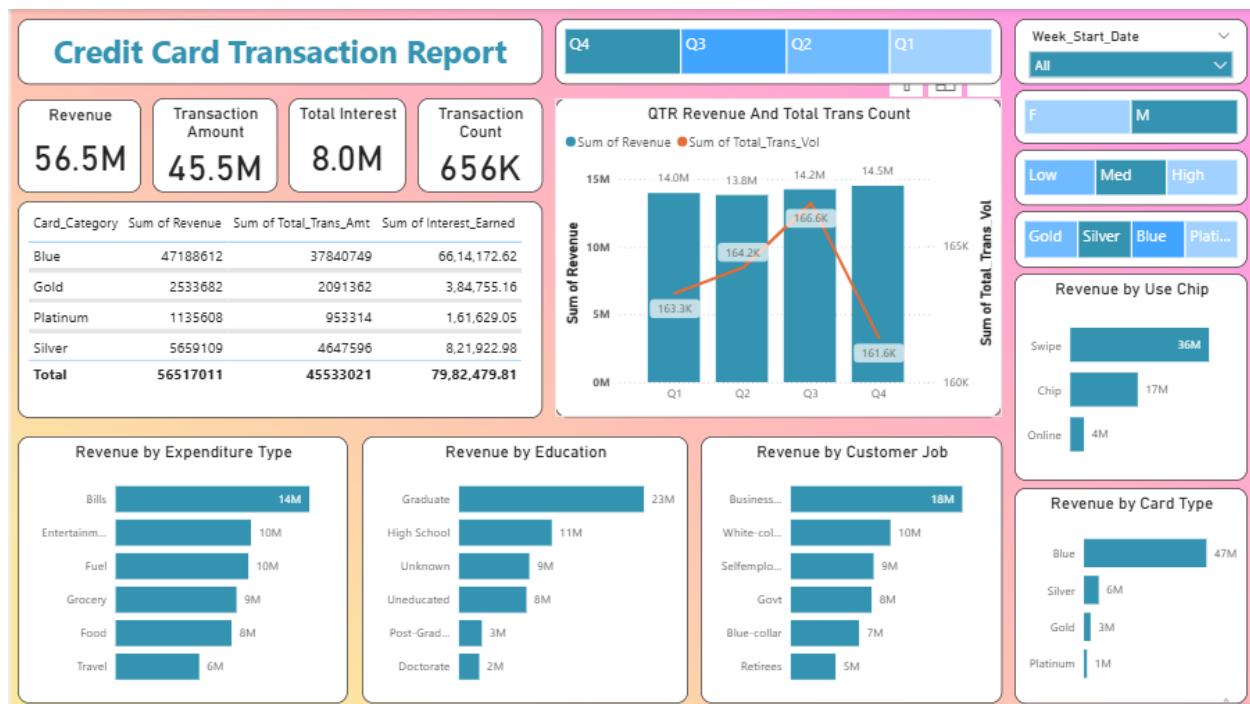
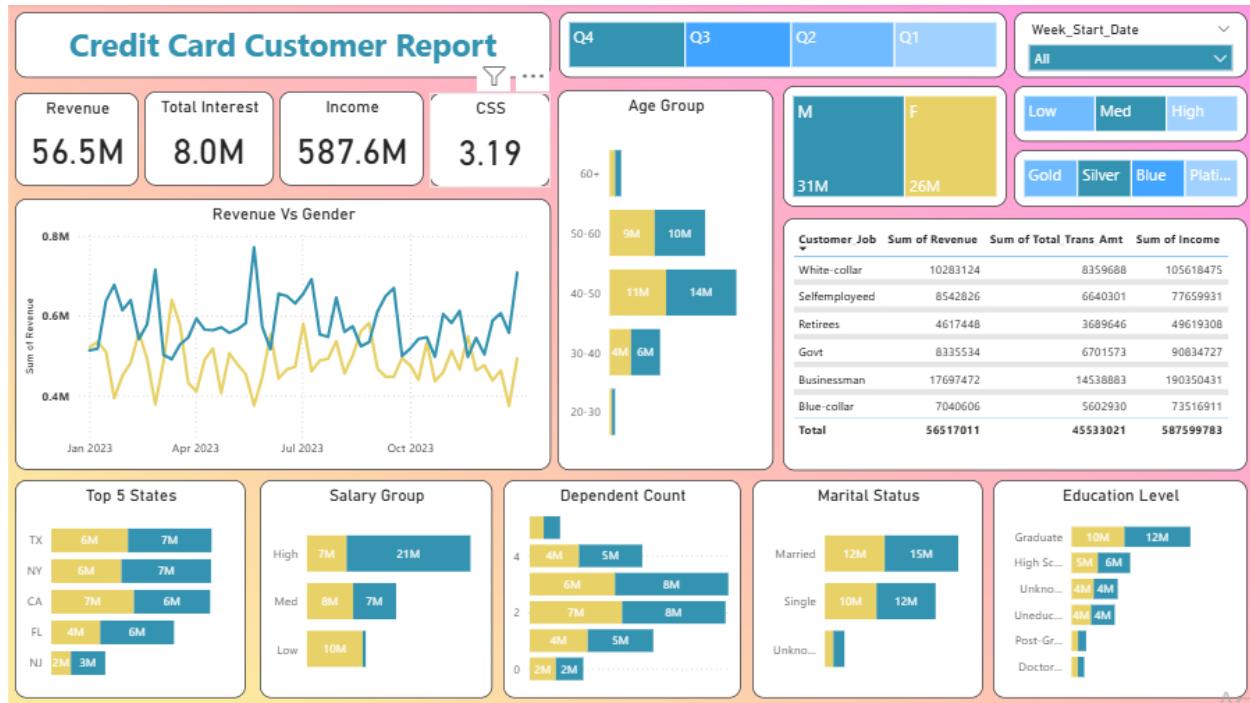
Tools :

- Power BI – Data visualization & dashboard creation
- Excel / CSV – Data pre-processing
- DAX – Measures and calculated columns, data modeling – Relationship design and optimization

Steps And Workflow :

- Data Cleaning and modeling
- EDA (Exploratory Data Analysis)

Key Findings and Insights :



- High-income individuals and graduates contribute significantly to credit card revenue.
- Customers aged 30–50 show the highest transaction volume and spending levels.
- The Blue and Gold card categories drive the majority of revenue.
- Swipe transactions contribute the highest revenue compared to Chip and Online.
- Bills, entertainment, and fuel are the top expenditure categories.
- Q3 and Q4 show increased revenue, indicating strong year-end spending patterns.

Recommendations :

- Target high-earning and mid-age customers with premium credit card offers.
- Promote rewards and cashback programs for fuel, bills, and entertainment expenditures.
- Encourage more digital and online transactions through discounts and loyalty offers.
- Launch region-specific marketing campaigns in high-performing states.
- Improve customer retention strategies for low-revenue segments with personalized offers.

Future Work :

- Integration with Real-Time Data Connect dashboards to live data sources for real-time monitoring of transaction fraud, spending patterns, and revenue changes.
- Automated Reporting Build a workflow to automate monthly or weekly performance reporting to stakeholders.

Conclusion :

The Credit Card Customer & Transaction Analysis project provides a comprehensive understanding of customer behavior, spending patterns, and revenue drivers. Overall, this project demonstrates how data-driven insights can help financial institutions enhance customer satisfaction, improve retention strategies, and maximize revenue efficiency.