



## Predict Credit Consumption of Customer For a Leading Bank

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## **Business Context:**

Analytics driving every industry based on a variety of technology platforms which collect information from various sources by analysing what customers certainly want. The Credit Card industry is also data rich industry and data can be leveraged in infinite ways to understand customer behaviour.

The data from a credit card processor shows the consumer types and their business spending behaviours. Therefore, companies can develop the marketing campaigns that directly address consumers' behaviour. In return, this helps to make better sales and the revenue undoubtedly grows greater sales.

Understanding the consumption pattern for credit cards at an individual consumer level is important for customer relationship management. This understanding allows banks to customize for consumers and make strategic marketing plans. Thus it is imperative to study the relationship between the characteristics of the consumers and their consumption patterns.

## **Business Objectives:**

One of the leading banks provided below data

- a. Customer Demographics
- b. Customer Behavioural data (information on liabilities, assets and history of transactions with the bank for each customer). Data has been provided for a particular set of customers' credit card spend in the previous 3 months (April, May & June) and their expected average spend in the coming 3 months (July, August & September)
- c. Credit consumption

## **Data Dictionary**

- a. **CustomerDemographics.csv**
  - ID – Customer ID - Unique ID for every Customer
  - Account\_type - Account Type (current or saving)
  - Gender- Gender of customer (M or F)
  - Age - Age of customer
  - Income – Income Levels (High/Medium/Low)
  - Emp\_Tenure\_Years – Experience – Employment Tenure of customer in Years
  - Tenure\_with\_Bank – Number of years with bank
  - Region\_code Code assigned to region of residence (has order)
  - NetBanking\_Flag – Whether customer is using net banking for the transactions
  - Avg\_days\_between\_transaction – Average days between two transactions

**b. CustomerBehaviorData.csv**

ID – Customer ID - Unique ID for every Customer  
CC\_cons\_apr - Credit card spend in April  
DC\_cons\_apr - Debit card spend in April  
CC\_cons\_may - Credit card spend in May  
DC\_cons\_may - Debit card spend in May  
CC\_cons\_jun - Credit card spend in June  
DC\_cons\_jun - Debit card spend in June  
CC\_count\_apr - Number of credit card transactions in April  
CC\_count\_may - Number of credit card transactions in May  
CC\_count\_jun - Number of credit card transactions in June  
DC\_count\_apr - Number of debit card transactions in April  
DC\_count\_may - Number of debit card transactions in May  
DC\_count\_jun - Number of debit card transactions in June  
Card\_lim - Maximum Credit Card Limit allocated  
Personal\_loan\_active - Active personal loan with other bank  
Vehicle\_loan\_active - Active Vehicle loan with other bank  
Personal\_loan\_closed - Closed personal loan in last 12 months  
Vehicle\_loan\_closed - Closed vehicle loan in last 12 months  
Investment\_1 - DEMAT investment in june  
Investment\_2 - Fixed deposit investment in june  
Investment\_3 - Life Insurance investment in June  
Investment\_4 - General Insurance Investment in June  
Debit\_amount\_apr - Total amount debited for April  
Credit\_amount\_apr - Total amount credited for April  
Debit\_count\_apr - Total number of times amount debited in april  
Credit\_count\_apr - Total number of times amount credited in april  
Max\_credit\_amount\_apr - Maximum amount credited in April  
Debit\_amount\_may - Total amount debited for May  
Credit\_amount\_may - Total amount credited for May  
Credit\_count\_may - Total number of times amount credited in May  
Debit\_count\_may - Total number of times amount debited in May  
Max\_credit\_amount\_may - Maximum amount credited in May  
Debit\_amount\_jun - Total amount debited for June  
Credit\_amount\_jun - Total amount credited for June  
Credit\_count\_jun - Total number of times amount credited in June  
Debit\_count\_jun - Total number of times amount debited in June  
Max\_credit\_amount\_jun - Maximum amount credited in June  
Loan\_enq - Loan enquiry in last 3 months (Y or N)  
Emi\_active - Monthly EMI paid to other bank for active loans

**c. CreditConsumptionData.csv**

ID – Customer ID - Unique ID for every Customer  
cc\_cons (Target) - Average Credit Card Spend in next three months

**Note:** Some customers are having missing values for credit consumption. You need to build the model using customer's data where credit consumption is non- missing's. You need to predict the credit consumption for next three months for the customers having missing values.

**Model Evaluation Metric:**

You should validate model using Root Mean Square Percentage Error (RMSPE) between the predicted credit card consumption and Actual Credit Consumption.

**Expected Outputs:**

- a. Detailed code with comments
- b. Data Exploratory analysis
- c. Model validation outputs
- d. Model documentation with all the details
- e. Predicted values for customers where target variable having missing values