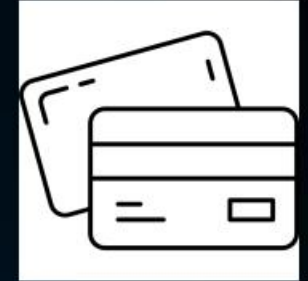




# Mitron Bank Credit Card Analysis



## PROBLEM STATEMENT of Codebasics Challenge 8

Mitron Bank is a legacy financial institution headquartered in Hyderabad. They want to introduce a new line of credit cards, aiming to broaden its product offerings and reach in the financial market. AtliQ Data Services came to know about this through an internal link and approached Mitron Bank with a proposal to implement this project. However, strategy director of Mitron Bank, Mr. Bashnir Rover is skeptical and asked them to do a pilot project with the sample data before handing them the full project.

They provided a sample dataset of 4000 customers across five cities on their online spend and other details.

This analysis is expected to guide them in tailoring the credit cards to customer needs and market trends.

# UNDERSTANDING DATA AND ITS VARIABLES

To understand the data and its different variables I used Python for the purpose Exploratory Data Analysis (EDA).

These are some findings:

- 1) There were no null values and duplicates in the dataset.
- 2) Each user of the dataset uses credit card.
- 3) Count of different payment methods is uniform which is 2,16,000.
- 4) Count of different categories is also uniform which is 96,000.
- 5) Maximum payments is done by the age group of 25-45.
- 6) Maximum payments was done by salaries employees followed by freelancers.
- 7) Male are frequent users than females. Also, married people are frequent users than singles.
- 8) Mean spend by Credit cards is 1001, UPI is 652, Debit card is 553 and by Net banking is 250.
- 9) In Credit card payments, age group of 25-34 spends the maximum average amount of 1171 followed by 35-45 with the amount of 1075. In Non-Credit card payments, age group of 35-45 spends the maximum average amount of 566 followed by 45+ with the amount of 504.
- 10) Average spent by male and females is similar for both with credit card payments is of approx 1000 and non credit card payments of 500.
- 11) Average spent by married and single users is similar for both with credit card payments is ranges from 800-1000 and non credit card payments of 450.
- 12) Total credit card payments are maximum in the category of Bills, followed by Electronics, Health and Groceries. Total non-credit card payments are maximum in the category of Groceries, followed by Bills Electronics, Health.
- 13) Maximum users use credit cards for the payments till 2000. While these users use other payment options for the payments till 1000.
- 14) This dataset includes only Tier 1 cities. And that too only for 6 months i.e. from May to September.
- 15) Each customer made 216 transactions.



# MITRON BANK PAYMENT DATA ANALYSIS

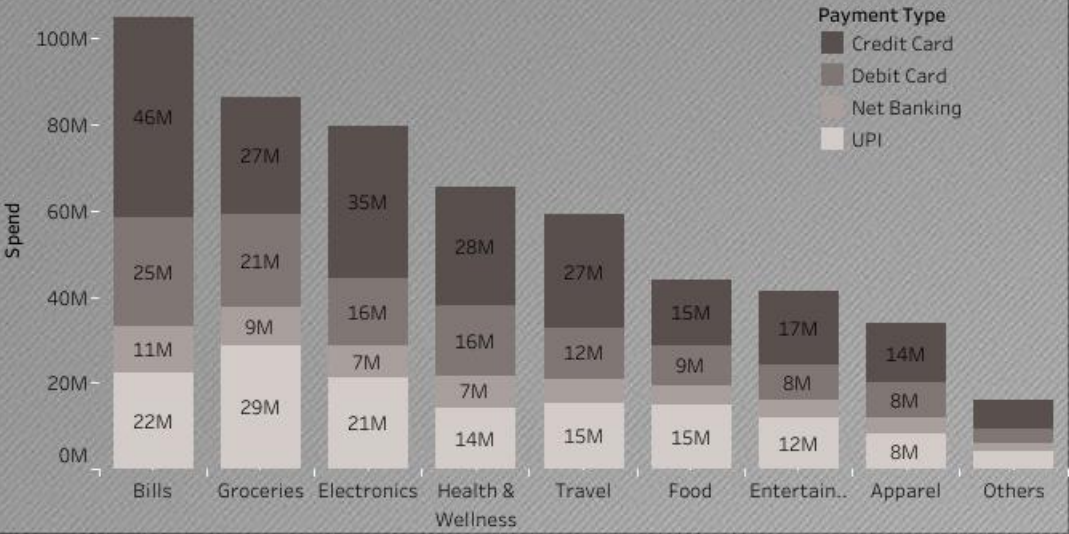
Total Customers4000

Average Income51,657

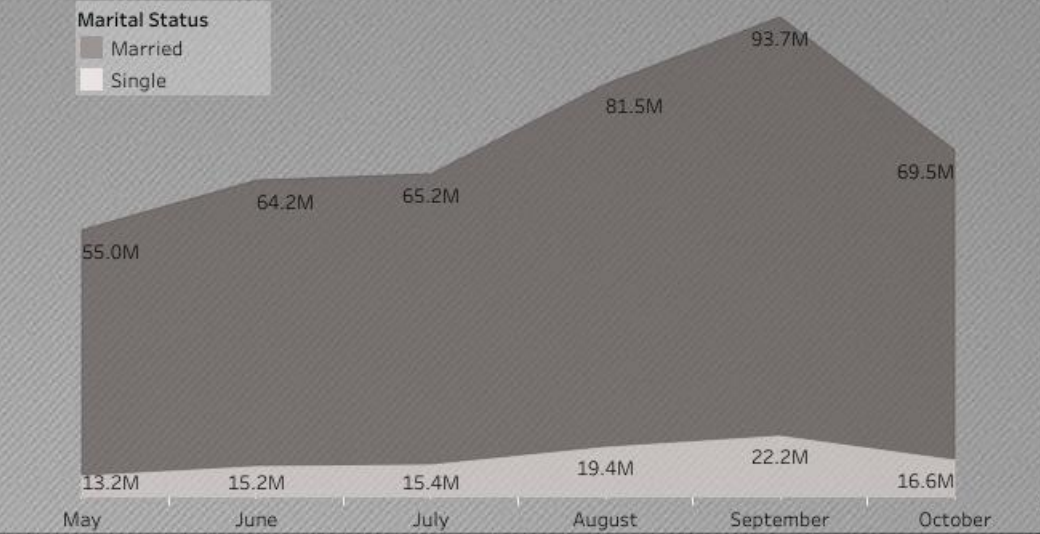
Average Spend614.5

Credit Card Usage40.74%

Average spent via payment methods on different categories



Total spend in each month by married and single customers



Payment Type

- ☒ Credit Card
- ☒ Debit Card
- ☒ Net Banking
- ☒ UPI

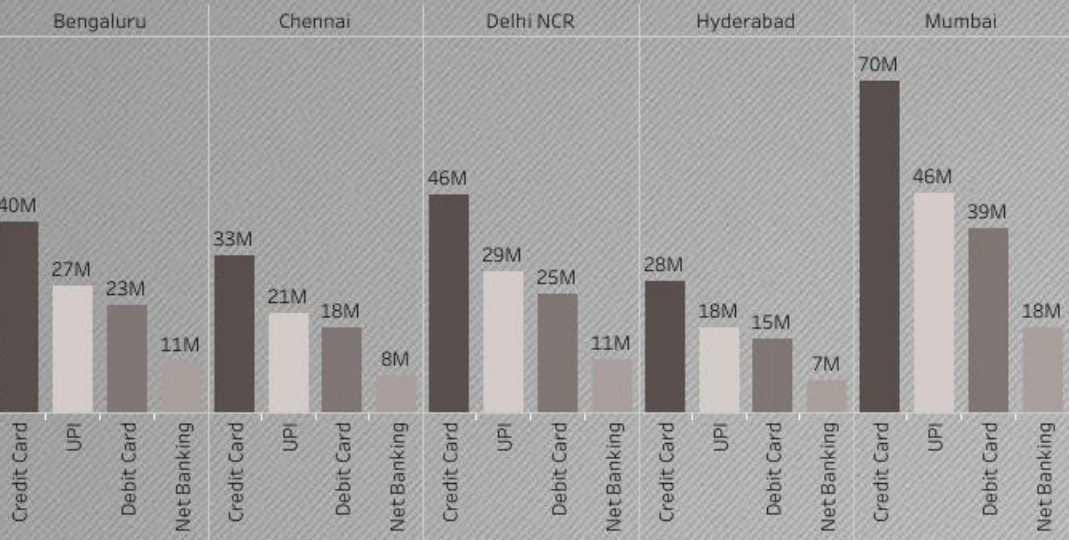
Month

- ☒ May
- ☒ June
- ☒ July
- ☒ August
- ☒ September
- ☒ October

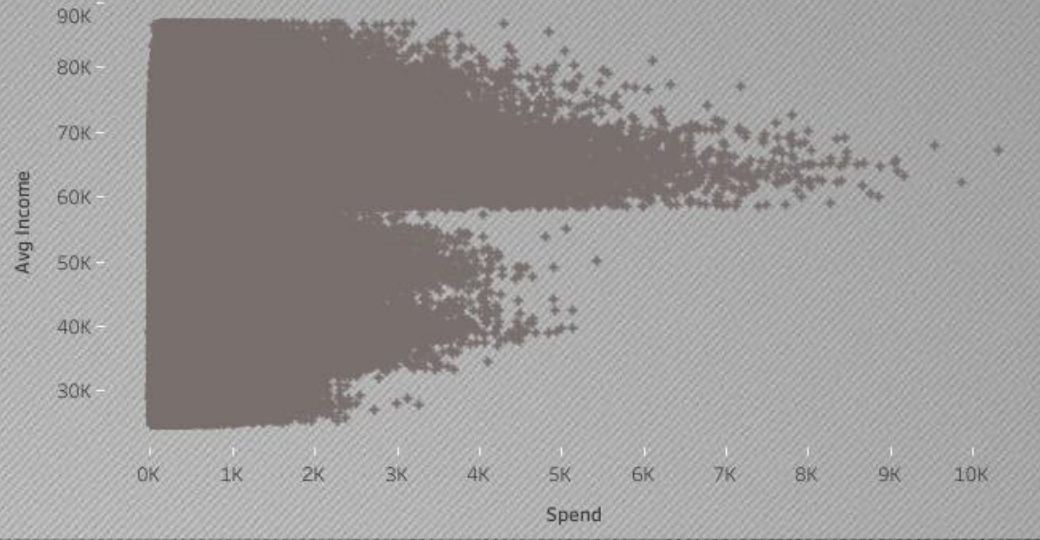
Marital Status

- ☒ Married
- ☒ Single

Total payments based on cities via different payment methods



Relationship between average income and money spent



City

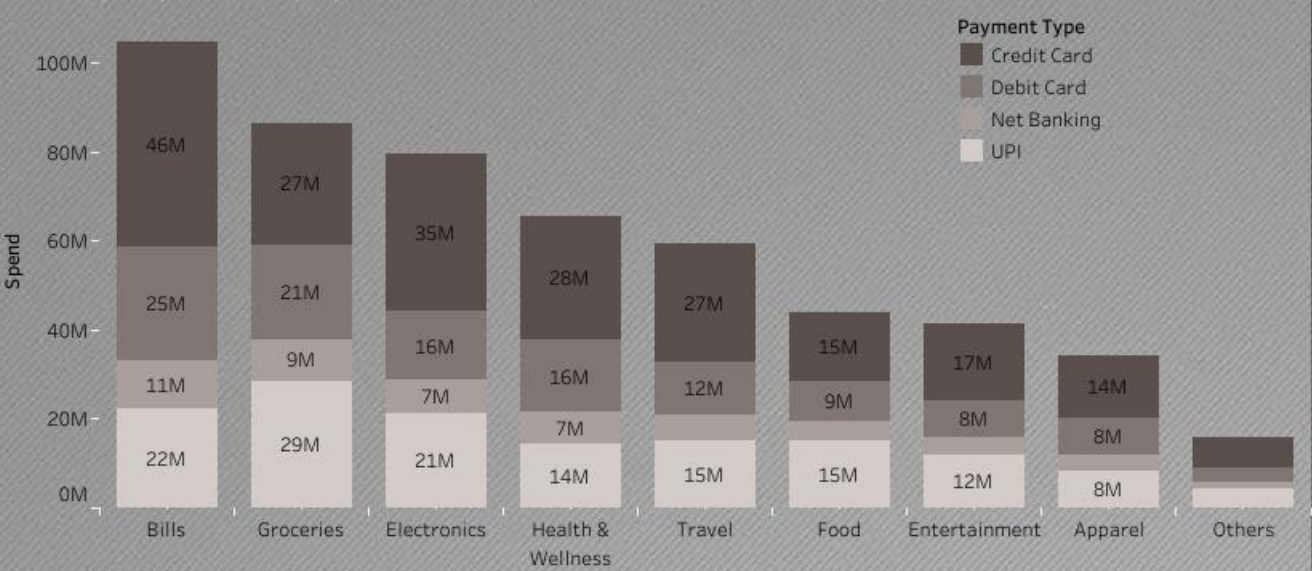
- ☒ Bengaluru
- ☒ Chennai
- ☒ Delhi NCR
- ☒ Hyderabad
- ☒ Mumbai

Category

- ☒ Apparel
- ☒ Bills
- ☒ Electronics
- ☒ Entertainment
- ☒ Food
- ☒ Groceries
- ☒ Health & Wellness
- ☒ Others
- ☒ Travel



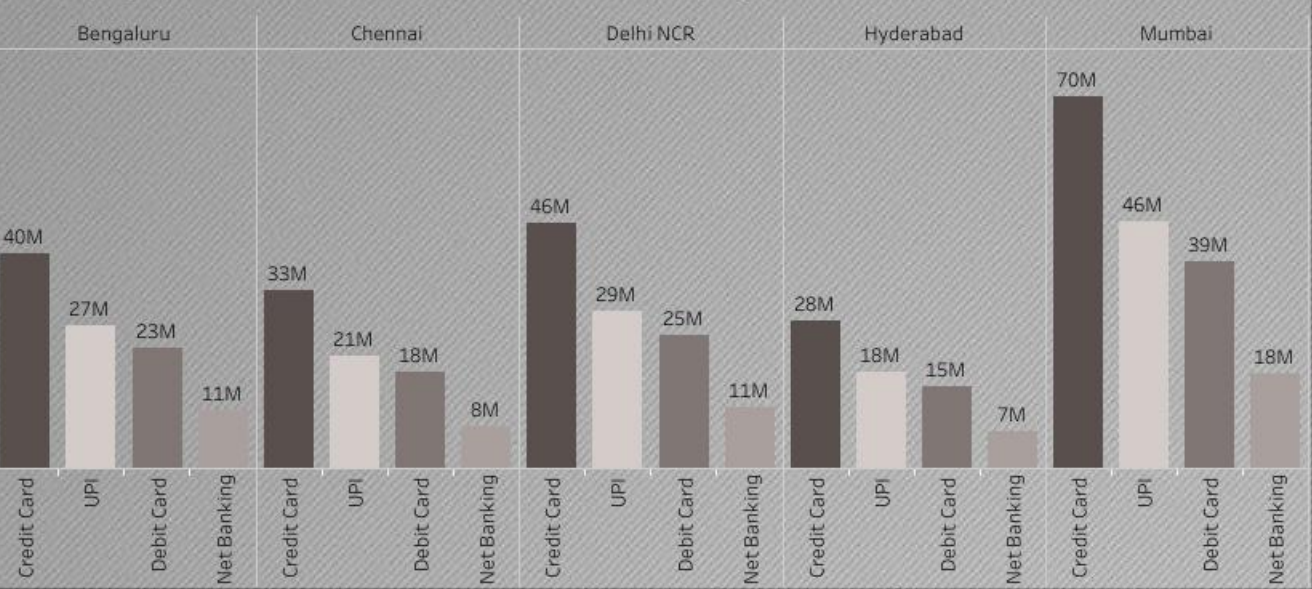
Average spent via payment methods on different categories



From this chart we can infer that:

- 1) Bills, Groceries and Electronic are the top three contributors in total spending by the customers.
- 2) For Credit Card payments, maximum was done for Bills and Electronics.
- 3) For other payment methods, maximum was done for Bills and Groceries.

Total payments based on cities via different payment methods

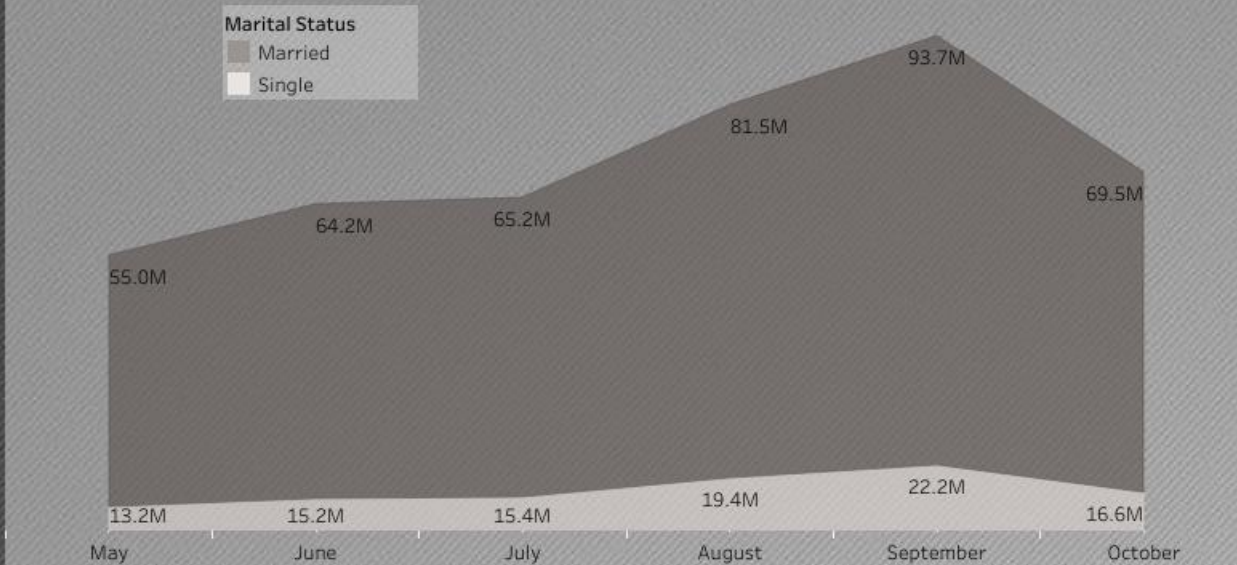


For this chart we can infer that:

- 1) Maximum payments are done in Mumbai and second highest is in Delhi NCR.
- 2) In each city, max to min payments by type of methods follows this pattern - Credit Card > UPI > Debit Card > Net banking.
- 3) For Credit Card payments, maximum total spending is of 70 millions in Mumbai, second highest is in Delhi NCR (46 million) and minimum is of 28 million in Hyderabad.



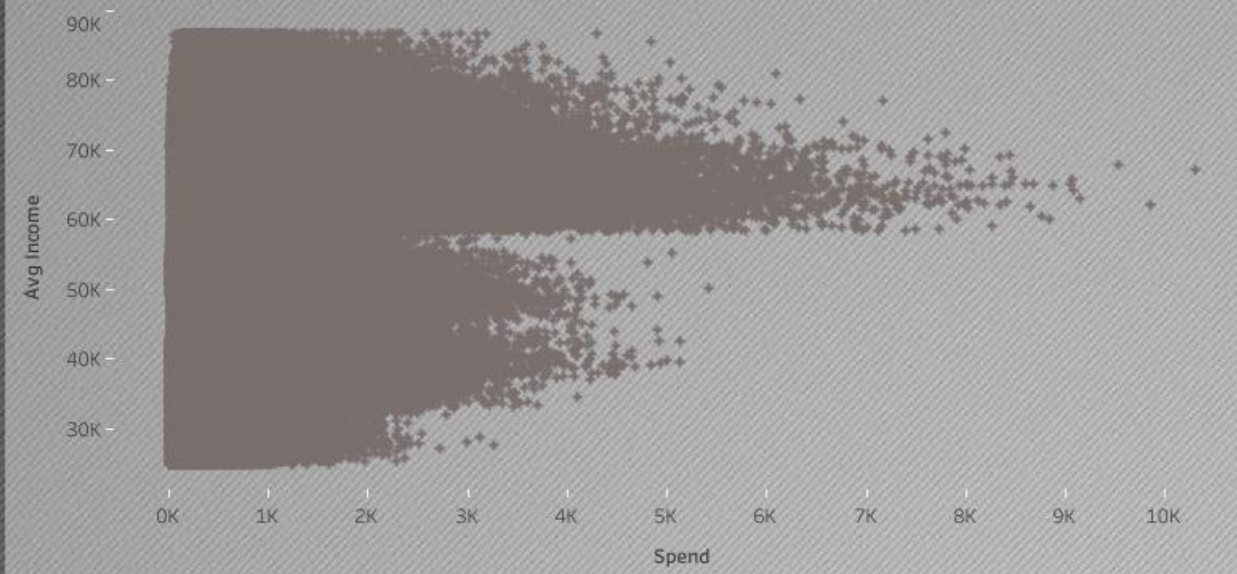
## Total spend in each month by married and single customers



From this chart we can infer that:

- 1) Total spend was made maximum in September, followed by August and October.
- 2) Married people in each month spend nearly 4.2 times what singles spend in that month.

## Relationship between average income and money spent



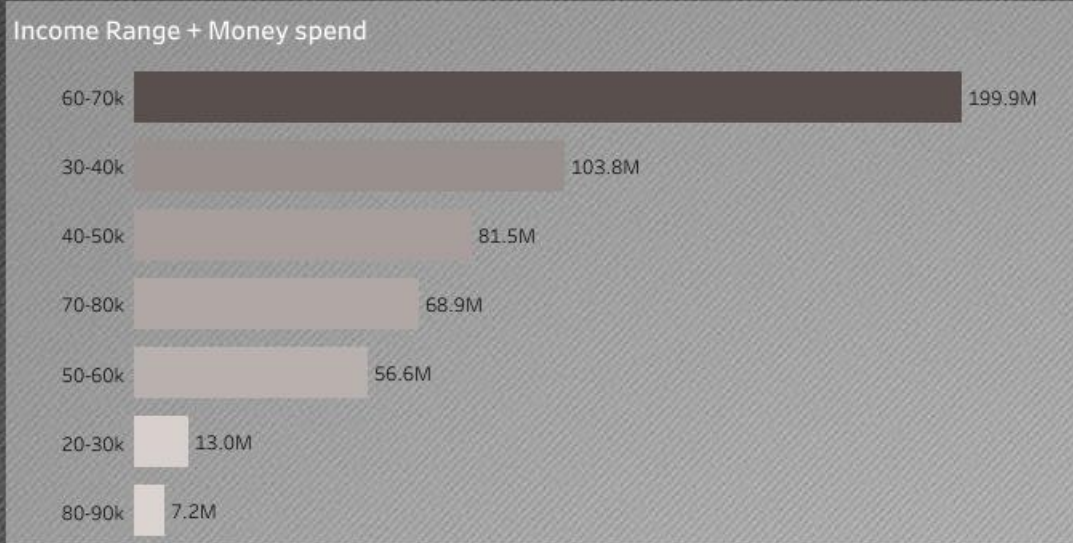
From this chart we can infer that:

- 1) Payments till 2500 are done by all income groups.
- 2) Maximum people with income of 30,000 usually did payment of amount till 2500.
- 3) Maximum people with income of 30,000 - 60,000 and 75,000 - 805,000 usually did payment of amount till 4000.
- 4) Maximum people with income of more than 60,000 and below 75,000 usually did payment of amount till 9000 which is the highest as compared to other income groups.

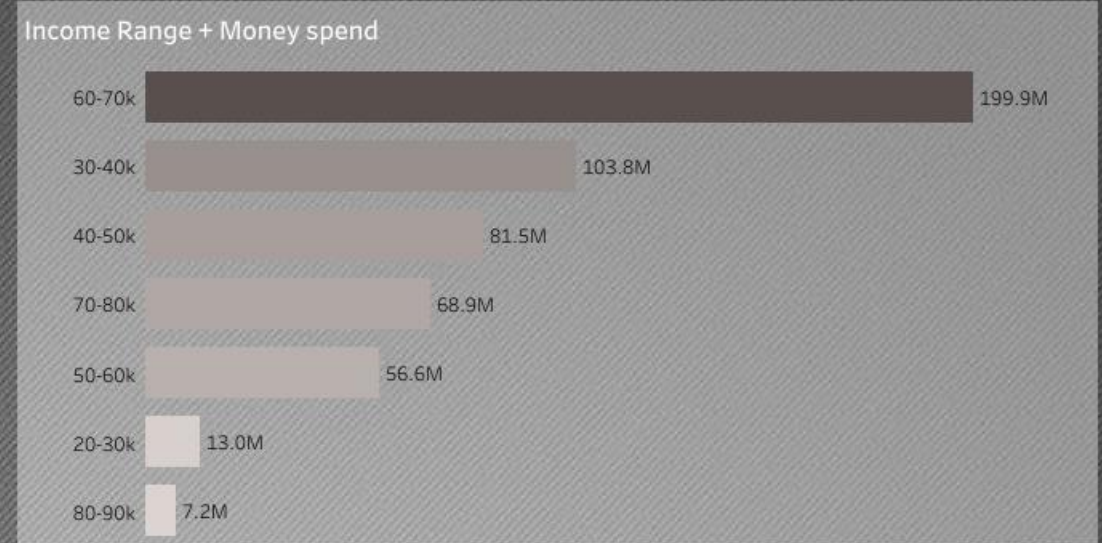


# INCOME RANGE

## Credit Card Payments



## Other Payment Methods



Both above charts show money spend by each income range. The difference is that 1st one shows payments made by credit card only and second one shows payment made by UPI, debit cards, net banking.

We can clearly see that pattern between both charts is same with highest amount of payments by 60-70k income range and minimum by 80-90k with each income range is spending via other payment methods more than what through credit cards. Since customers with 60-70k, 30-40k, 40-50k are already spending a lot in both cases they could be put into 1st category (who are spending maximum and equally in both cases).

We could target 70-80k, 50-60k and 80-90k to spend via more through credit cards by introducing them the benefits of new line of Credit card and put them into category 2 (who are spending more through other payment methods apart from Credit Cards).



## AGE GROUP

### Credit Card Payments

Age Group + Money spend



### Other Payment Methods

Age Group + Money spend



Both above charts show money spend by each age group. The difference is that 1st one shows payments made by credit card only and second one shows payment made by UPI, debit cards, net banking.

We can see that pattern is quite different for both cases. Maximum credit payments are done by age group of 25-34 and minimum by 21-24. On the other hand, maximum spend by other payment methods are done by age group of 35-45 and minimum by 45+. We can put 25-34 age group in category 1 as they are already spending maximum by credit cards and second highest by others, hence we can easily convince them to divert their spending towards credit cards payments by giving them more lucrative offers. Also we can put 35-45 in category 2 as they are spending second highest via credit cards and highest via others, hence we can introduce them new line of credit to give them personalised offers and discount with extra efforts. We can also put 21-24 as attracting youngsters with credit cards would be a good idea.



# OCCUPATION

## Credit Card Payments



## Other Payment Methods



Both above charts show money spend by each occupation. The difference is that 1st one shows payments made by credit card only and second one shows payment made by UPI, debit cards, net banking.

We can see that salaried IT employees are spending most in both cases and minimum are from government employees. Only change in ranking is by salaried other employee and business owners

Since salaried IT employees are spending maximum and nearly equally in both cases, we will put them in category 1. Also, we will also salaried other employees in category 1 inspite of major difference because salaried employees are usually easy targets for credit cards as they are more prone to pay on credit basis.

For category 2 we will first put business owners first as they are spending more by other payment methods. We could convince them by introducing the benefits of new credit lines based on their spending pattern. Freelancers could be the new target as they are also spending more via other payment methods.

Government employees are usually less interested in credit payemnts and they are also contributing less in total payments, hence we will not them at all.



## Category 1

Customer Base who uses Credit Card equally as other Payment methods

Customer Id	Avg Income ..	Occupation	Age Group
ATQCUS0124	60-70k	Salaried IT Employees	25-34
ATQCUS0125	60-70k	Salaried IT Employees	25-34
ATQCUS0126	60-70k	Salaried IT Employees	25-34
ATQCUS0127	60-70k	Salaried IT Employees	25-34
ATQCUS0128	60-70k	Salaried IT Employees	25-34
ATQCUS0129	60-70k	Salaried IT Employees	25-34
ATQCUS0132	60-70k	Salaried IT Employees	25-34
ATQCUS0133	60-70k	Salaried IT Employees	25-34
ATQCUS0134	60-70k	Salaried IT Employees	25-34
ATQCUS0135	60-70k	Salaried IT Employees	25-34
ATQCUS0136	60-70k	Salaried IT Employees	25-34
ATQCUS0137	60-70k	Salaried IT Employees	25-34
ATQCUS0138	60-70k	Salaried IT Employees	25-34
ATQCUS0139	60-70k	Salaried IT Employees	25-34
ATQCUS0140	60-70k	Salaried IT Employees	25-34
ATQCUS0142	60-70k	Salaried IT Employees	25-34
ATQCUS0143	60-70k	Salaried IT Employees	25-34
ATQCUS0145	60-70k	Salaried IT Employees	25-34
ATQCUS0146	60-70k	Salaried IT Employees	25-34
ATQCUS0147	60-70k	Salaried IT Employees	25-34
ATQCUS0148	60-70k	Salaried IT Employees	25-34
ATQCUS0149	60-70k	Salaried IT Employees	25-34
ATQCUS0150	60-70k	Salaried IT Employees	25-34
ATQCUS0151	60-70k	Salaried IT Employees	25-34

Customer Count - 719

Income Group - 30-40k, 40-50k, 60-70k

Occupation - Salaried IT Employee, Salaried Other Employee

Age Group - 25-34

Above Customer IDs are those who are paying via Credit Cards as equally as other payment methods. It means these are those customers whom we can easily attract new Credit Card line by explaining them new offers.

## Category 2

Customer Base who uses other Payment methods more than Credit Card

Customer Id	Avg Income ..	Occupation	Age Group
ATQCUS0023	50-60k	Business Owners	21-24
ATQCUS0024	50-60k	Business Owners	21-24
ATQCUS0025	50-60k	Business Owners	21-24
ATQCUS0026	50-60k	Business Owners	21-24
ATQCUS0027	50-60k	Business Owners	21-24
ATQCUS0028	50-60k	Business Owners	21-24
ATQCUS0029	50-60k	Business Owners	21-24
ATQCUS0052	50-60k	Business Owners	21-24
ATQCUS0053	50-60k	Business Owners	21-24
ATQCUS0054	50-60k	Business Owners	21-24
ATQCUS0055	50-60k	Business Owners	21-24
ATQCUS0056	50-60k	Business Owners	21-24
ATQCUS0074	50-60k	Business Owners	21-24
ATQCUS0076	50-60k	Business Owners	21-24
ATQCUS0077	50-60k	Business Owners	21-24
ATQCUS0099	50-60k	Business Owners	21-24
ATQCUS0100	50-60k	Business Owners	21-24
ATQCUS0101	50-60k	Business Owners	21-24
ATQCUS0116	50-60k	Business Owners	21-24
ATQCUS0117	50-60k	Business Owners	21-24
ATQCUS0118	50-60k	Business Owners	21-24
ATQCUS0989	70-80k	Business Owners	35-45
ATQCUS0990	70-80k	Business Owners	35-45

Customer Count - 233

Income Group - 50-60k, 70-80k, 80-90k

Occupation - Business Owners, Freelancers

Age Group - 21-24, 35-45

Above Customer IDs are those who are paying via other payment methods like UPI, Debit cards, Net Banking more than Credit Cards. It means they are that customer base who are already using non-cash methods of payments but not through Credit Cards. They could be converted into Credit Card customer base if more benefits and awareness about Credit cards are explained to them. Benefits in bills, consumer products, healthcare, travelling could be given.



# SUGGESTIONS

## General Suggestions

### 1) Targeted Marketing:

**Category 1 (Segment 1):** Focus on targeted marketing campaigns for customers in the 25-34 age group, with income groups of 30-40k, 40-50k, and 60-70k, who are already spending equally through both Credit Cards and other payment methods. Highlight new Credit Card benefits, offers, and rewards tailored to their spending patterns.

**Category 2 (Segment 2):** Design specialized campaigns for customers aged 21-24 and 35-45, with income groups of 50-60k, 70-80k, and 80-90k, who are currently using other methods more than Credit Cards. Emphasize the additional advantages of using Credit Cards in bills, consumer products, healthcare, and travel.

### 2) Educational Campaigns:

Launch educational campaigns to create awareness about the benefits of Credit Cards, especially targeting Category 2 customers. Highlight advantages in bills, consumer products, healthcare, and travel to encourage them to shift their spending towards Credit Cards.

### 2) Customized Offers:

Create personalized offers for both categories based on their spending patterns. For Category 1, focus on enhancing the existing credit card benefits, and for Category 2, introduce special incentives to make Credit Cards more appealing.

## Geographic Targeting

### Regional Focus:

Concentrate initial marketing efforts in Mumbai and Delhi NCR, as these cities show the highest payment activities. Tailor campaigns to resonate with the spending behavior and preferences of customers in these regions.



## Monthly & Age-Based Targeting

### 1) Seasonal Promotions:

Capitalize on the monthly spending trends, with a particular emphasis on promotions and offers during the peak spending months, such as September, August, and October.

### 2) Age-Specific Strategies:

For the 25-34 age group, leverage targeted offers and rewards to encourage them to increase their Credit Card usage.

Target the 21-24 age group with campaigns that emphasize the benefits of starting to use Credit Cards early in their financial journey.

Develop special offers for the 35-45 age group, as they show potential for increased Credit Card usage.

## Income & Occupation-Based Targeting

### 1) Employee Engagement:

Engage with salaried IT employees and salaried other employees from Category 1 through workplace partnerships and employer tie-ups. Offer exclusive benefits for using Credit Cards.

Target business owners and freelancers from Category 2 with tailored campaigns highlighting how a Credit Card can simplify business expenses and provide additional perks.

### 2) Income-Specific Promotions:

For income groups of 30,000 - 60,000 and 75,000 - 80,000, design promotions that encourage higher Credit Card usage by showcasing benefits in various spending categories.

### 3) Avoid Government Employees

Given the lower interest and contribution in credit payments, avoid targeting government employees for this credit card launch.



## Customer Segmentation

### **1) Segment-Specific Campaigns:**

Tailor campaigns for each segment. For Segment 1, highlight the equal benefits of using Credit Cards. For Segment 2, emphasize the additional advantages and rewards that Credit Cards can offer compared to other payment methods.

### **2) Dedicated Support:**

Provide dedicated customer support and assistance to both segments, ensuring a seamless transition and addressing any concerns they may have.

### **3) Feedback Mechanism:**

Establish a feedback mechanism to continuously improve Credit Card offerings based on customer preferences and spending behaviors.

By adopting these strategies, the bank can effectively target and convert customers from both segments, maximizing the success of the new line of Credit Cards.