**HBFC Business Report**

1. **What percentage of the bank’s customers (according to the data) have availed Personal Loans?**

* Ans. For doing this question there is two approaches:

1) By using COUNTIF FUCTION

2) By using pivot table

In both the situation you will get the answer as 9.60% (480 customers out of 5000 customers)

So, 9.60% of the bank’s customers have availed personal loan.

1. **Generate a table with min, max, median & average for all numeric variables (age, experience, income, family members, CCAvg, Mortgage). What are your observations?**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **TABLE** | |  |  |  |
| **PARAMETERS** | **Age (in years)** | **Experience (in years)** | **Income (in K/year)** | **Family members** | **CCAvg** | **Mortgage** |
| **MIN** | **23** | **0** | **8** | **1** | **0** | **0** |
| **MAX** | **67** | **43** | **224** | **4** | **10** | **635** |
| **MEDIAN** | **45** | **20** | **64** | **2** | **1.5** | **0** |
| **AVERAGE** | **45.3384** | **20.1348** | **73.7742** | **2.397230028** | **1.937938** | **56.4988** |

* AGE – There are more customers of age group of 45years.The customers who have their bank a/c is above 22 years (no one is under age). We can target the specific group of people for specific loan policy. We can also check from which age group our revenue mostly come from.

* Experience- mostly the customers are having the experience of 20 years and there are other customers also who have no professional experience. We can also give educational loans to the persons who have less professional experience.
* Income -I can see that there is large difference in income of the customers (i.e., some are earning very huge money 224 k/year in $000 and some are earning only 8k/year in $000). And the average person is earning between 64k to 73k. we can target the middle-income group to take loans from bank and advice the high-income group of people to invest in FD OR RD. By knowing the income of the customer, we can decide the rate of interest.
* Family members- customers are having on an average of 3-4 members as a family. So, it’s good for the bank to target those family members to open their a/c in our bank.
* CCAVG-By seeing the average I can infer that very less number of customers are spending on credit card. It needs to be increased by targeting the middle- and upper-class people.
* Mortgage- very less number of people are giving their house as mortgage. so, it’s bad for the bank that they are getting less value of the house as a mortgage that can lead to increase in bad debt or NPA.

1. **Create a new categorical variable for Experience using 4 categories – a. 0 to 10 years b. 11 to 20 years c. 21 to 30 years and d. 30+ years. Plot a bar graph for this new categorical variable**

I have created my experience category variable by using nested if function

1. **Create a scatter plot of the Age and the Experience variable. What do you observe?**

“Scatter plot is used in order to visualize the numerical relationship between variables.”

I observe that there is a positive corelation (i.e., it’s closer to +1) between age and experience as data point move from bottom to upward.

That means there is positive linear relationship between age and experience. So, if the value of age increases, then the value of experience also increases.

As we can see that all the data points lie near the trendline so they are strongly related with each other.

1. **What are the top 3 areas (ZIP Codes) where the bank’s customers are located?**

|  |  |
| --- | --- |
| 94720 | 169 |
| 94305 | 127 |
| 95616 | 116 |

TOP 3 areas (zip codes) are-

**6.How many customers have a combination of Fixed Deposits and Credit Cards but not Personal Loan?**

|  |  |  |  |
| --- | --- | --- | --- |
| **Count of CreditCard** |  | **Personal Loan** |  |
| **CreditCard** | **TD Account** | **No** | **Grand Total** |
| **Yes** | Yes | 147 | 147 |
| **Yes Total** |  | **147** | **147** |
| **Grand Total** |  | **147** | **147** |

147 CUSTOMERS have a combination of fixed deposits and credit card but not personal loan.

There are two methods: 1**) COUNTIFS** **2) pivot table**

1. **What is the median income of the customers who have availed personal loans and compare it with the median income of those customers who have not availed personal loans? What do you infer?**

|  |  |  |
| --- | --- | --- |
|  | AVAILED PERSONAL LOAN | NOT AVAILED PERSONAL LOAN |
|  |
| MEDIAN  INCOME | 142.5 | 59 |

I can infer that most of the customers who are earning more money are taking the loan from the bank whereas less income people are avoiding to take loans.

**8. Create 4 separate Pivot Tables. Summarise your data by percentages.**

This answer is in excel sheet ANS 8

**9. Analyse the Pivot tables created in the previous question and state any anomaly that you observe. Which categorical variables appear most important for your further study if you want to analyse which customers are most likely to take personal loans and why?**

* The anomaly I have observed is that the customers who are undergraduate should take more loans for their further studies but they are taking fewer personal loans as compared to graduate and professional.

Usually low or middle-income people tends to take more personal loans in their daily life but according to our data rich people who have income more than 100 k/year in $000 are taking more loans.

* For me credit card and securities categorical variables appear most important for my further study to analyse which customers are most likely to take personal loans.

Customers holding credit card usually more prone to heavy transactions so we can target to give personal loan to those potential customers who have good credit score. This will lead to increase the loan facility for our bank.

* We can also give personal loans to potential customers against the securities like bonds, shares, mutual funds etc. As the customers who have securities generally have ample amount of money so bank can target and give more and more personal loans and thus increases their profit.

**10. In the last campaign, bank reached out to 5000 customers out of which 480 customers accepted the personal loan offer. The bank incurred a huge cost in running a marketing campaign to reach out to so many customers. This is where you as a strategic business consultant step in. You are tasked to optimise the cost of this campaign by identifying the correct target base (without significant reduction in number of acceptance of offers). The bank can then send Personal Loan offers to these target customers who have a higher chance of accepting the offer. Based on your analysis, what strategy would you suggest to the management of HBFC bank?**

* From the data I can infer that income people between1-100(in k/year in $000) are taking less loans. So, bank can also target these customers to increase their loans. Also provide large amount of personal loans to the rich people so that their % of taking loans can also be increased.
* More experience person is also taking less loans so bank should give more clarity (provide more useful information ) to the experienced person about personal loans so that they can be convinced and increase their % of taking loans from the bank.
* I can say that the persons who have securities a/c in the bank has taken less loans so we should target these customers to take loans in lower interest rates for the short term due the fluctuations in securities.
* The bank can also approach to undergraduate students to take loans for their further education at lower rates which will increase the loan facilities for the bank. BANK should also try to increase their loan facility to the professionals at lower interest rates so that their % of taking personal loans from HBFC BANK can increase gradually.
* At last, I want to say that bank should encourage all customers to take online facilities which further will increase the awareness among the customers about personal loan (bank should show their campaign in their platform or dashboard) and customers will be able to take the loan with less paperwork at affordable interest rates.