**BUSINESS REPORT**

**HBFC BANK**

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

ANS.WE KNOW THAT TOTAL NUMBER OF CUSTOMER IS 5000 AND FOR TOTAL NUMBER OF CUSTOMER WHO TAKE LOAN FROM BANKWE CAN USE COUNTIF FUNCTION FOR THE COLUMN PERSONAL LOAN AND CRITERIA “YES”

|  |  |
| --- | --- |
| total number of customer in data table | 5000 |
| total number of customer who take loan from bank | 480 |
| percentage | 9.6 |

PERCENTAGE=480/5000\*100=9.6%

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

ANS. FUNCTIONS USED TO FIND

MIN=(=MIN VARIABLES RANGE)

MAX=(=MAX VARIABLES RANGE)

MEDIAN=(=MEDIAN VARIABLES RANGE)

AVERAGE=(=AVERAGE VARIABLES RANGE)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | AGE | EXPERIENCE | INCOME | 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 | 2.39723 | 1.937938 | 56.4988 |

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**

ANS. FIRST I CREATE A NEW COLUMN HIS HEADING NAME IS NEW C.V AND I USED THREE NESTED IF FUNCTION IN THIS CATEGORY FUNCTION THEN I DRAGDOWN

|  |  |
| --- | --- |
| BIN | FREQUENCY |
| 0-10 | 1289 |
| 11-20 | 1253 |
| 21-30 | 1301 |
| 30+ | 1157 |

FUNCTION USED : - {=IF(C2<=10,"0-10",IF(C2<=20,"11-20",IF(C2<=30,"21-30","30+")))}

AFTER THIS I CREATE A BIN RANGE AND FIND FREQUENCY DISTRIBUTION USING BY COUNTIF FUNCTION AND I CREATE A BAR CHART AND ALSO COLUMN CHART

FUNCTION USED :- { =COUNTIF($P$2:$P$5001,T4)}

I CREATED COLUMN CHART ALSO IN EXCEL FOR SAME BIN RANGE.

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

ANS.FOR INSERTING A SCATTERPLOT FIRST WE HAVE SELECT THE VARIABLES THEN GO TO THE INSERT TAB THEN IN CHARTS THEN SCATTER CHART.

WE CAN SEE THAT WHEN AGE IS INCREASED THEN THE EXPERIENCE IS ALSO INCREASED SO WE CAN SAY THAT AGE IS DIRECTLY PROPORTIONAL TO EXPERIENCE OR VICE-VERSA.

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

|  |  |  |
| --- | --- | --- |
|  | ZIP CODE | CONT OF ZIP CODE |
| TOP 1 AREA----- | 94720 | 169 |
| TOP 2 AREA----- | 94305 | 127 |
| TOP 3 AREA----- | 95616 | 116 |

ANS. FIRST I CREATED PIVOT TABLE THEN I PUT ZIP CADE IN ROWS AND COUNT OF ZIP CODE IN VALUES. COUNT OF ZIP CODE COME FROM VALUE FIELD SETTING. AND AFTER THIS I COPY PIVOT TABLE IN SAME SHEET THEN I USE FILTER AND CLICK ON LARGEST TO SMALLEST AND PICK TOP THREE VALUES WHICH IS MY ANS.

|  |
| --- |
| USING COUNTIFS METHOD |
| 147 |

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

ANS. I USED COUNTIFS FUNCTION AND I GET THE ANS. I ALSO USED SECOND METHOD FIRST I USED NESTED IF THEN I GET 0 TO 1 IN DIFFERENT COLUMN THEN I ADD ALL. WE GOT ANS 147 FROM BOTH METHOD. { =COUNTIFS(M2:M5001,"YES",O2:O5001,"YES",K2:K5001,"NO")}

|  |  |
| --- | --- |
| MEDIAN INCOME | 64 |
| AVAILED LOAN | 142.5 |
| WITHOUT LOAN | 59 |

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?**

ANS. FIRST I USE FILTER IN TABLE THEN USE FILTER ON PERSONAL LOANS I COPIED INCOME VALUES SEPERTELY AFTER USING FILTER IN PERSONAL LOAN “YES” AND “NO” IN ANOTHER SHEET WHICH IS ANSWER7ROUGH SHEET IN EXCEL THEN IN ROUGH SHEET I USED MEAN FUNCTION TO DETERMINE MEDIAN OF AVAILED LOAN PEOPLE AND ALSO WITHOUT LOAN PEOPLE.

WE CAN SAY THAT THOSE CUSTOMER WHO TAKE LOAN THEY HAVE HEIGHER MEDIAN AND THOSE CUSTOMER WHO DIDN’T TAKE LOAN THEY HAVE VERY LESS MEDIAN INCOME 59 IN COMPARE TO AVAILED LOAN WHO HAVE 142.5.

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

• Education vs Personal Loan

|  |  |  |  |
| --- | --- | --- | --- |
| EDUCATION VS PERSONAL LOAN | |  |  |
| **Count of Personal Loan** | **Column Labels** |  |  |
| **Row Labels** | **No** | **Yes** | **Grand Total** |
| Graduate | 24.42% | 3.64% | 28.06% |
| Professional | 25.92% | 4.10% | 30.02% |
| Undergraduate | 40.06% | 1.86% | 41.92% |
| **Grand Total** | **90.40%** | **9.60%** | **100.00%** |

• TD Account Vs Personal Loan

|  |  |  |  |
| --- | --- | --- | --- |
| TD ACCOUNT VS PERSONAL LOAN | |  |  |
| **Count of Personal Loan** | **Column Labels** |  |  |
| **Row Labels** | **No** | **Yes** | **Grand Total** |
| No | 87.16% | 6.80% | 93.96% |
| Yes | 3.24% | 2.80% | 6.04% |
| **Grand Total** | **90.40%** | **9.60%** | **100.00%** |

• Online vs Personal Loan

|  |  |  |  |
| --- | --- | --- | --- |
| ONLINE VS PERSONAL LOAN | |  |  |
| **Count of Personal Loan** | **Column Labels** |  |  |
| **Row Labels** | **No** | **Yes** | **Grand Total** |
| No | 36.54% | 3.78% | 40.32% |
| Yes | 53.86% | 5.82% | 59.68% |
| **Grand Total** | **90.40%** | **9.60%** | **100.00%** |

• Income\_Category vs Personal Loan

|  |  |  |  |
| --- | --- | --- | --- |
| INCOME CATEGORY VS PERSONAL LOAN | |  |  |
| **Count of Personal Loan** | **Column Labels** |  |  |
| **Row Labels** | **No** | **Yes** | **Grand Total** |
| 0-50 | 38.28% | 0.00% | 38.28% |
| 100+ | 15.48% | 8.76% | 24.24% |
| 51-100 | 36.64% | 0.84% | 37.48% |
| **Grand Total** | **90.40%** | **9.60%** | **100.00%** |

1. **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?**

ANS.

* IN THIS QUESTION IN INCOME CATEGORY VS PERSONAL LOAN WE CAN SEE THAT THE CATEGORY OF 0-50 PEOPLE THE PEOPLE WHO IS VERY POOR THEY DIDN’T TAKE LOAN AND THE OTHER CATEGORY 51-100 VERY LESS PEOPLE 0.84% PEOPLE WHICH IS ALSO VERY LESS THEY ARE TAKING LOAN BUT MOST IMPORTANT THOSE PEOPLE WHOSE INCOME IS VERY HEIGH THEY ARE TAKING LOAN WHICH IS 8.76% OF THE GRAND TOTAL SO THIS THE THING WHICH IS VERY SURPRISING THAT POOR PEOPLE IS NOT TAKING LOAN BUT RICH PEOPLE IS TAKING LOAN.
* INCOME CATEGORY VARIABLES APPEAR MOST IMPORTANT FOR OUR FUTURE STUDY. BECAUSE WE KNOW THAT IN PERSONAL LOAN THOSE PEOPLE WHOSE INCOME IS MORE THAN 100 THEY ARE TAKING LOAN SO WE CAN TARGET THOSE PEOPLE WHOSE INCOME IS MORE THAN 100 THEY PEREFER LOAN MOST.
* THOSE PEOPLE WHOSE INCOME IS MORE THAN 100 THEY ARE TAKING LOAN MOST BECAUSE I THING THEIR NEED IS BIG OTHER PEOPLE WHOSE INCOME IS LOAN THRY ARE NOT TAKING LOAN BUT USELLY WE KNOW THAT POOR PEOPLE IS TAKING LOAN MOST BUT IN THIS CASE STUDY HEIGHER INCOME CATEGORY PEOPLE TAKING MORE LOAN BECAUSE THE INCOME OF THOSE PEOPLE IS NOT SUFFICENT TO FULFILL THEIR WISH.

1. **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**?

* WE KNOW THAT IN THE LAST CAMPAIGN BANK HUGE COST GONE IN MARKETING FOR 5000 PEOPLE AND THE BANK IS SUCCESSFUL TO CONVERT IN LOAN FOR ONLY 480 PEOPLE OUT OF 5000 BUT WE KNOW THAT THE PEOPLE WHOSE INCOME IS 100+ THEY ARE THE MOST WHO IS TAKING LOAN THEY ARE 8.76% OF THE GRAND TOTAL 5000.
* BUT SUPPOSE WE WILL SEND OUR BANK PERSONAL TO ONLY THOSE PEOPLE WHOSE INCOME IS 100+ WHICH 1212 PEOPLE OUT OF 5000 IS. THEN WE CAN REDUCE OUR COST THE COST WHICH WE SPEND ON 5000 PEOPLE WE DON’T HAVE TO SPEND ON THEM WE CAN SPEND ON ONLY THOSE PEOPLE WHOSE INCOME IS MORE THAN 100+ WHICH IS ONLY 1212. THIS IS APPROX 4 TIMES WILL WE THE LESS THAN TOTAL COST.
* WE CAN SPEND SOME OF THE MONEY ON THE CATEGORY OF 51-100 SO WE CAN CONVERT SOME MORE CUSTOMER ON THE LOAN. WE DON’T HAVE A NEED TO SEND OUR LOAN AGENT ON THE INCOME CATEGORY OF 0-50, BECAUSE WE KNOW THAT IN THAT AREA THERE IS NO CUSTUMER WILL TAKE LOAN AND THAT’S WAY WE CAN REDUCE OUR COST.