

HBFC BANK – PERSONAL LOAN

1.What percentage of the bank's customers (according to the data) have availed Personal Loans vs the ones who have not availed it?



- As per chart I analytics 9.6% of customer availed a personal loan, but 90.46% customer not availed in personal loan.

2.Generate a table with min, max, median & average for all numeric variables (age, experience, income, family members, CCAvg, Mortgage)

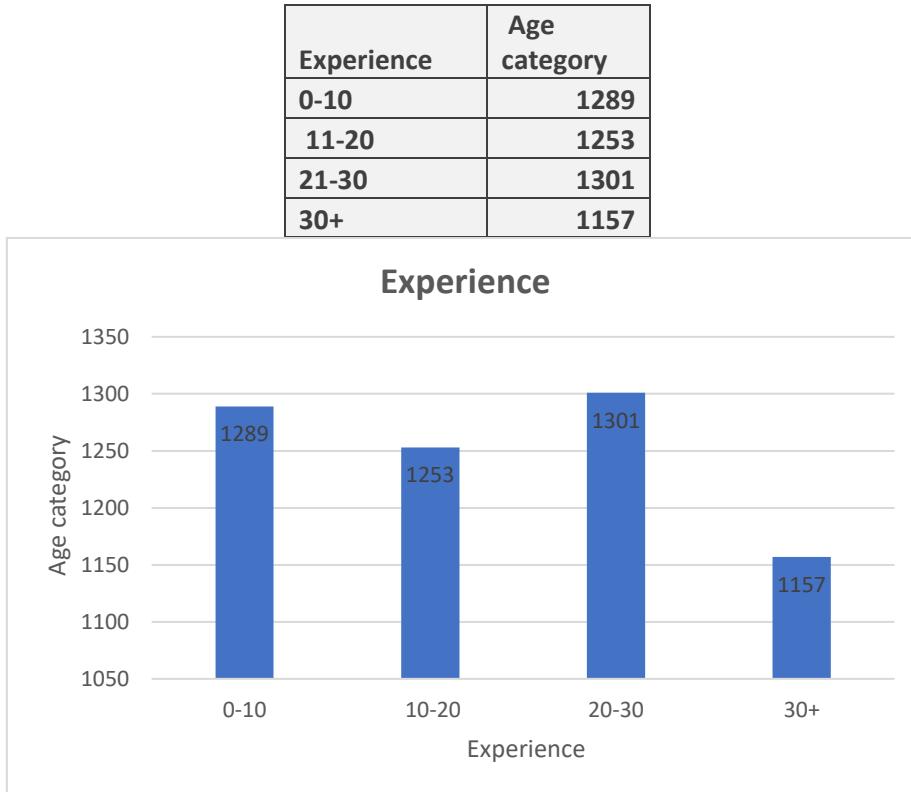
Value	Age	Experience	Income	Family Members	CCAvg	Mortgage
Minimum	23	0	8	1	0	0
Maximum	67	43	224	4	10	635
Median	45	20	64	2	1.5	0
Average	45.34	20.13	73.77	2.40	1.94	56.50

- From the above data, I am to observe the experience of the customer is proportional to their income. So their CC Avg also have a decent rate. We can see that family members count is increasing , the income is also increasing.

3) Create a new categorical variable for Experience using 4 categories –

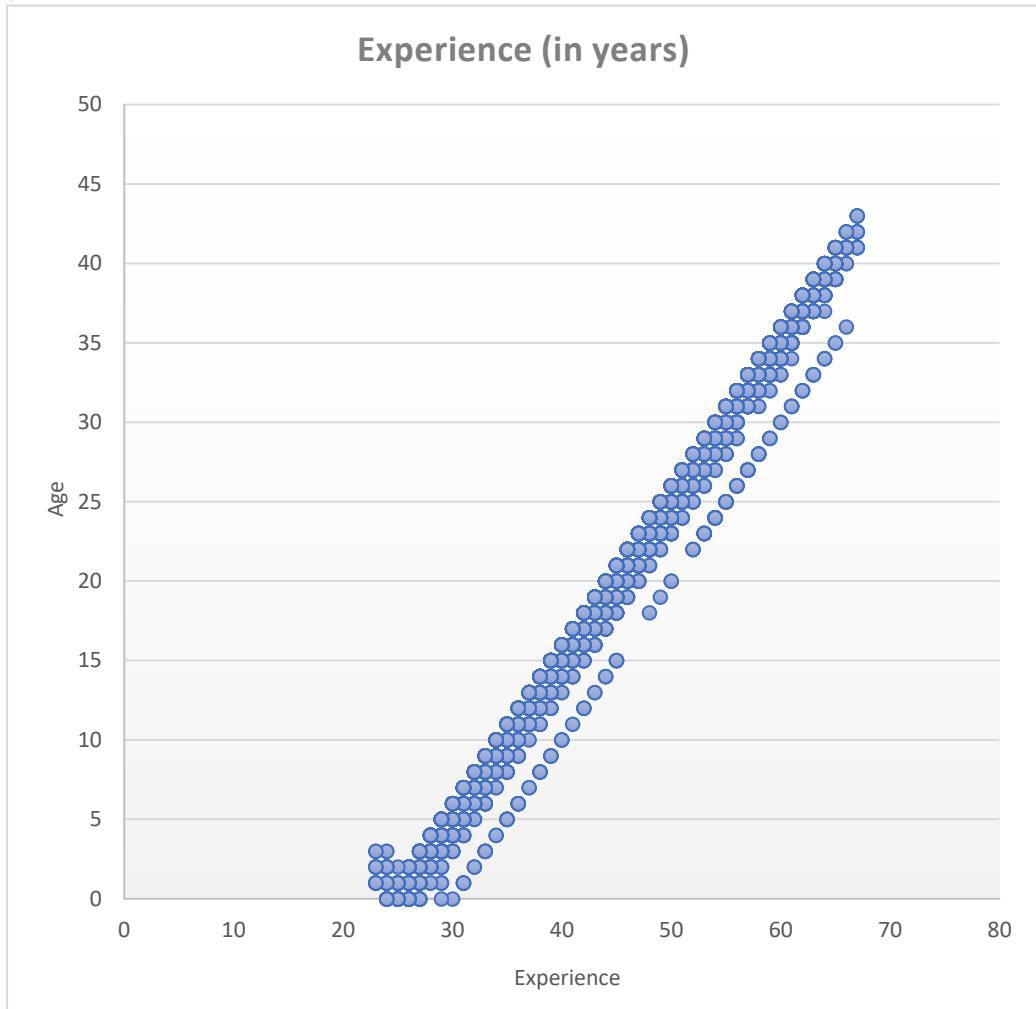
- 0 to 10 years • 11 to 20 years • 21 to 30 years • 30+ years.

Plot a bar graph for this new categorical variable [Hint – You may make use of if else/nested if statements to accomplish this task. You can refer how Income Category has been created in the dataset]



- From the above data, we can see age category and experience is higher 21 -30 experience , 1301 is higher when we compare to others.

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



- From the scatter plot, we can see that age and experience are related to each other. so age is increasing then experience also increase. The scatter plot the trend is towards in positive correlation.

5) What are the top 3 areas (ZIP Codes) where the bank's customers are located?

ZIPCODE	COUNT
94720	169
94305	126
95616	116

- From the above zip code data , I analyse that bank customer are there in this top three zip code.

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

- The customers have a good chances to avail the loan from the bank. So 147 customer have a good score to avail loans.

7) 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?

Avail personal Loan	Not Avail personal loan
142.5	59

- In this table, we can see that median income value of the customers who has availed loans has higher median value compare to customers who haven't availed loan. We can come to the conclusion that who have higher income avail the personal loan.

8) Create 4 separate pivot tables. Summarize your data by percentage values.

- Education vs personal loan
- TD Account vs Personal loan
- Online Vs Personal loan
- Income _ category vs personal loan

A.EDUCATION VS PERSONAL LOAN

Row Labels	Column 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%

B.TD ACCOUNT VS PERSONAL LOAN

Count of Personal Loan	Column Labels		Grand Total
	No	Yes	
Row Labels	No	Yes	
No	87.16%	6.80%	93.96%
Yes	3.24%	2.80%	6.04%
Grand Total	90.40%	9.60%	100.00%

C.ONLINE VS PERSONAL LOAN

Count of Personal Loan	Column Labels		Grand Total
	No	Yes	
Row Labels	No	Yes	
No	36.54%	3.78%	40.32%
Yes	53.86%	5.82%	59.68%
Grand Total	90.40%	9.60%	100.00%

D.INCOME_CATEGORY VS PERSONAL LOAN

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

- The comparing the personal loan with the other components, we can predict that the chances of the new customer who are able to get personal loan from the bank.

9) Analyze 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 analyze which customers are most likely to take personal loans and why?

- The analyse pivot table compared to graduate , undergraduate, and professional most of people interested to personal loan easy to reach people to make for accepted the personal loan ,so personal loan is useful to education so most of professional (4.10%) personal loan. I observe most lowest percentage of undergraduate very lowest like to personal loan (1.86%).

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 optimize the cost of this campaign by identifying the correct target base (without significant reduction in number of acceptances 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?

- Huge Possibility to accept we run the offer through the loan campaigns. We can execute the campaign by good advertisement and cover it with media support. We can surely Achieve the good number of loan acceptance from the customer.