

## PROJECT HBFC

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

Ans : 9.60 % of the banks customers have availed the personal loan

Steps:

1. Select the whole data and insert in to the pivot table
2. Drag the personal loan into the rows and values in the pivot table
3. Select the value field settings and select count then right click and select show values as % of grand total , we get the percentage value.

Row Labels	Count of Personal Loan
No	90.40%
Yes	9.60%
<b>Grand Total</b>	<b>100.00%</b>

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

Numeric Variables	min	max	Average	median
Age	23	67	45.3384	45
Experience	0	43	20.1348	20
Income	8	224	73.7742	64
Family Members	0	4	2.3866	2
Ccavg	0	10	1.937938	1.5
Mortgage	0	635	0	0

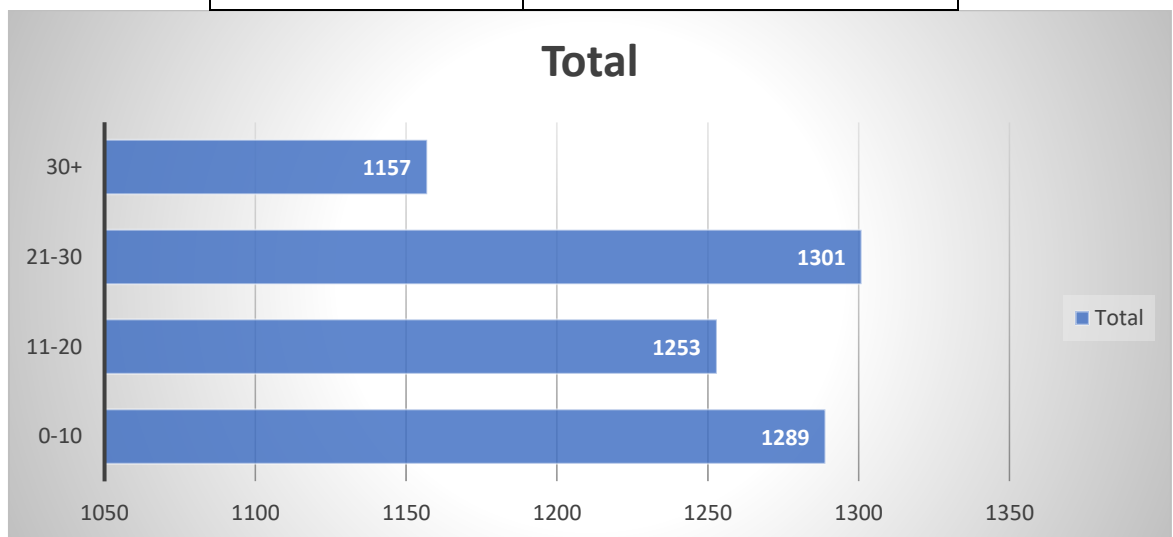
- the min experience , family members , Ccavg , Mortgage values is 0
- The Mortgage's Avg and median is 0
- The avg and median of Income values are different

3. Create a new categorical variable for Experience using 4 categories – 0 to 10 years 11 to 20 years 21 to 30 years and 30+ years. Plot a bar graph for this new categorical variable [Hint – You may make use of if else/nested if statements to

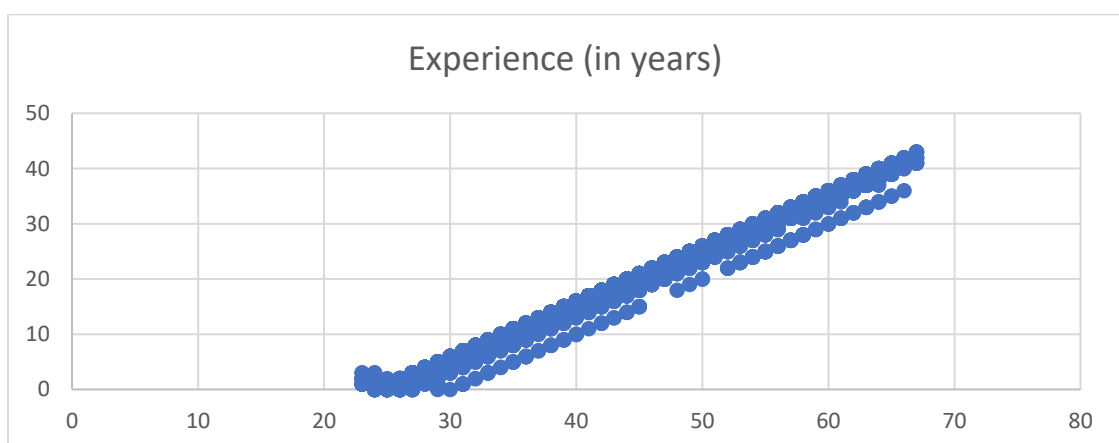
**accomplish this tasks. You can refer how Income\_Category has been created in the dataset]**

We have created a new column name as Experience\_category using nested if condition for the given 4 categories and then inserted the pivot table , to get the report of the category and then inserted the pivot chart graph.

Row Labels	Count of Experience-Category
0-10	1289
11-20	1253
21-30	1301
30+	1157
Grand Total	5000



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



According to the scatter plot there is significant increase in the experience as the age increases.

→ Customers with the age grp of 20-30 have less experience and some of them doesn't have any professional experience that is with 0 experience.

→ Majority of the customers have 5-15 years of experience

→ Customers with in the age group of 60-70 have the highest experience of 43 years.

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

ZIP Code	Count of ZIP Code
94720	169
94305	127
95616	116

→ First insert the pivot table. Then select the zipcode in values and in rows.

→ Then select the data , and copy it then sort the data from largest to smallest then we can get the top 3 areas

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

FC_CC	Personal Loan	Count of FC_CC	
FALSE	No	4373	
	Yes	387	
TRUE	No	147	
	Yes	93	
Grand Total		5000	

→ 147 customers have a combination of the fixed deposits and credit card

1. Created new column for the customers who have both FD and CC using AND condition

2. Then insert the pivot table to get the combination the customers who have FD and CC

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?

→142.5 k/per year is the median income of persons who availed the personal loan

→59 k/per year is the median income of persons who haven't availed the personal loan

8. Create 4 separate Pivot Tables. Summarise your data by percentages. Education vs Personal Loan TD Account vs Personal Loan Online vs Personal Loan Income\_Category vs Personal Loan [Hint: Please drag Personal Loan to the Columns area while creating the Pivot Table to get the required values]

#### Education Vs Personal Loan

Count of Personal Loan	Column Labels		
Row Labels	No	Yes	Grand Total
Graduate	87.03%	12.97%	100.00%
Professional	86.34%	13.66%	100.00%
Undergraduate	95.56%	4.44%	100.00%
<b>Grand Total</b>	<b>90.40%</b>	<b>9.60%</b>	<b>100.00%</b>

#### TD Account Vs Personal loan

Count of Personal Loan	Column Labels		
Row Labels	No	Yes	Grand Total
No	92.76%	7.24%	100.00%
Yes	53.64%	46.36%	100.00%
<b>Grand Total</b>	<b>90.40%</b>	<b>9.60%</b>	<b>100.00%</b>

### Online vs Personal Loan

Count of Personal Loan	Column Labels		
Row Labels	No	Yes	Grand Total
No	90.63%	9.38%	100.00%
Yes	90.25%	9.75%	100.00%
Grand Total	90.40%	9.60%	100.00%

### Income Category vs Personal Loan

Count of Personal Loan	Column Labels		
Row Labels	No	Yes	Grand Total
0-50	100.00%	0.00%	100.00%
100+	63.86%	36.14%	100.00%
51-100	97.76%	2.24%	100.00%
Grand Total	90.40%	9.60%	100.00%

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?

→ Majority of the customers who are undergraduate they cannot opt the personal loan.  
→ Customers with a personal loan 0-50 didn't opt for the personal loan.  
→ Majority of the customers who didn't have the FD account with the bank didn't opt the personal loan.  
→ Customers who have the TD account with the bank are more who opted the personal loan than customers.

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?

According to the analysis:

→Income variable is most effecting variable to the personal loans, income of the customer is high than the probability of taking personal loan is also high.

→So this time I recommend the banks to target the customers to those who have high income so that most of them can opt for personal loans