

ANALYSIS OF HOME LOANS APPROVAL- FACTORS AFFECTING



BRIEF SUMMARY ON THE TOPIC:

- **A FINANCE COMPANY DEALS IN ALL HOME LOANS.**
- **THEY HAVE PRESENCE ACROSS ALL URBAN, SEMI URBAN AND RURAL AREAS.**
- **CUSTOMER FIRST APPLY FOR HOME LOAN AFTER THAT COMPANY VALIDATES THE CUSTOMER ELIGIBILITY FOR LOAN.**
- **COMPANY CAPTURES MANY DETAILS TO PROCESS THE LOAN ELIGIBILITY PROCESS BASED ON CUSTOMER DETAIL PROVIDED WHILE FILLING ONLINE APPLICATION FORM.**
- **THESE DETAILS ARE GENDER, MARITAL STATUS, EDUCATION, NUMBER OF DEPENDENTS, INCOME, LOAN AMOUNT, CREDIT HISTORY AND OTHERS.**
- **A NUMBER OF FACTORS CAN AFFECT A COMPANY FOR TAKING DECISION ABOUT AN APPLICATION.**



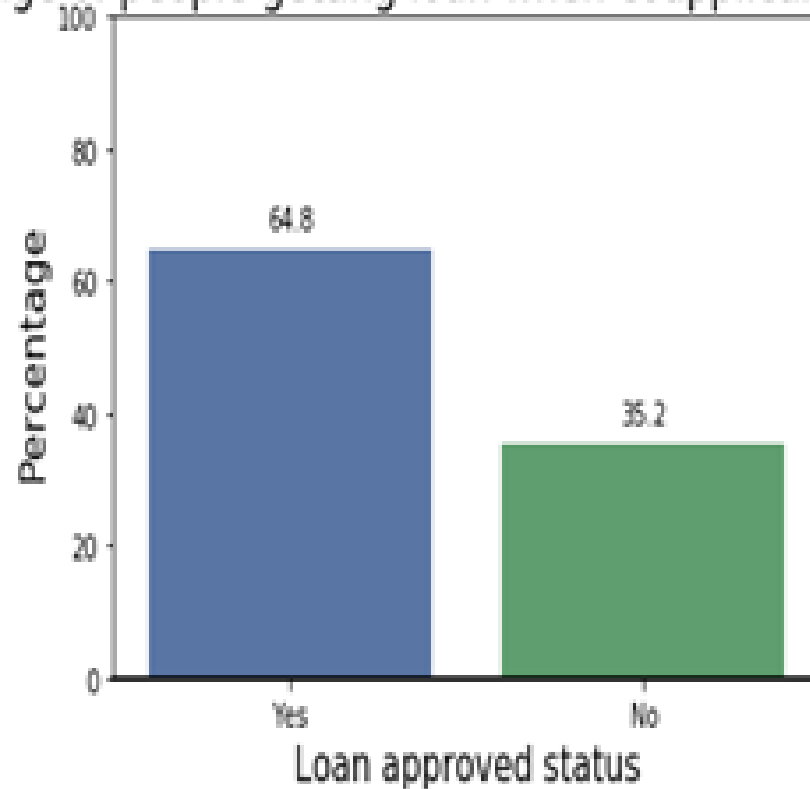
LIST OF R CODES USED IN ANALYSIS:

- **#CHANGING OF WORKING DIRECTORY**
- **IMPORT OS**
- **OS.GETCWD()**
- **OS.CHDIR (R"/USERS/HARSH/DESKTOP/PYTHON PROGRAMMING COURSE /PRIPROJECT")**
- **# IMPORTING OF IMPORTANT PACKAGES FOR ANALYSIS**
- **IMPORT PANDAS AS PD**
- **IMPORT NUMPY AS NP**
- **IMPORT MATPLOTLIB.PYLOT AS PLT**
- **IMPORT SEABORN AS SNS**
- **#READING OF CSV DATA FILE.**
- **LS=PD.READ_CSV("LOAN.CSV")**
- **#COPY OF MAIN DATA SET**
- **LSW=LS**
- **LSW.COLUMNS**

OBJECTIVE-1 TO FIND OUT THE PERCENTAGE OF PEOPLE GETTING LOAN WITH ZERO CO- APPLICANT INCOME?

```
24# 1. Percentage of people getting loan with 0 coapplicant income
25ppci=lsw[(lsw.CoapplicantIncome==0)]
26ppcils=ppci.Loan_Status.value_counts()
27ppcils1=ppcils.to_frame()
28ppcils1["Percentage"]=round((ppcils1/ppcils1.sum())*100,2)
29ppcils1["Category"]={"Yes": 'Y', "No": 'N'}
30ppcilsbar=sns.barplot(data=ppcils1,x="Category",y="Percentage"\
31                        ,palette="deep")
32plt.axhline(0, color="k", clip_on=False)
33plt.title("Percentage of people getting loan when coapplicant income is '0'",fontsize=18)
34plt.xlabel("Loan approved status",fontsize=15)
35plt.ylabel("Percentage",fontsize=15)
36plt.ylim(0,100)
37rects = ppcilsbar.patches
38for rect in rects:
39    y_value = rect.get_height()
40    x_value = rect.get_x() + rect.get_width() / 2
41    space = 5
42    va = 'bottom'
43    label = "{:.1f}".format(y_value)
44    plt.annotate(label,(x_value, y_value),xytext=(0, space),\
45                textcoords="offset points",ha='center',va=va)
46plt.figure(figsize=(4,5))
47
```


Percentage of people getting loan when coapplicant income is '0'



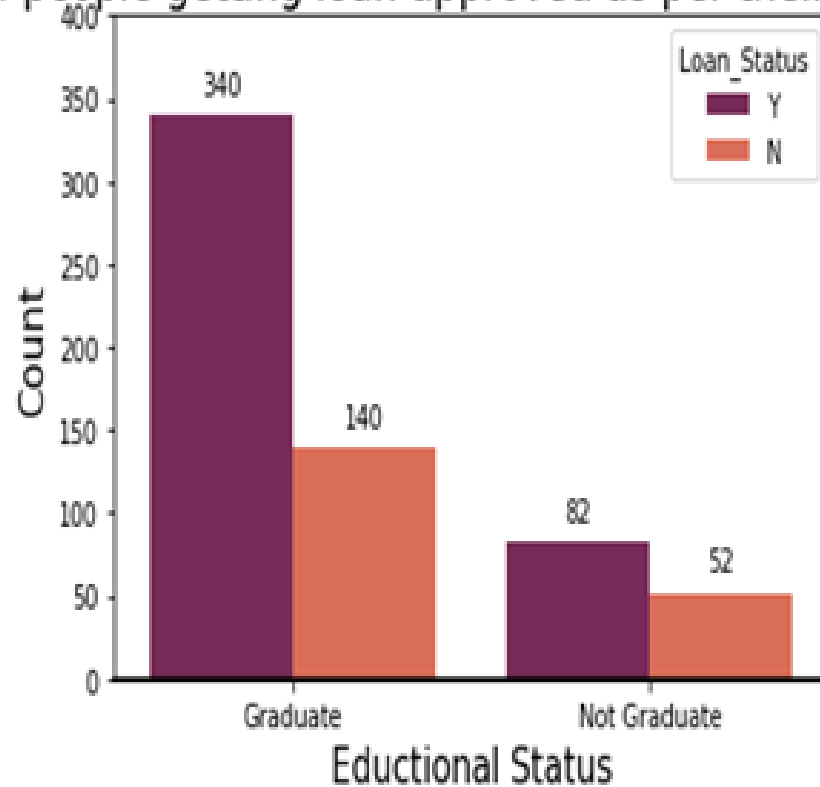
OBJECTIVE-1 TO FIND OUT THE PERCENTAGE OF PEOPLE GETTING LOAN WITH ZERO CO-APPLICANT INCOME?

- **WITH CO-APPLICANT HAVING NO INCOME ARE ALSO ELIGIBLE FOR LOAN APPROVAL PROVIDED MAIN LOAN APPLICANTS INCOME IS HIGH.**

OBJECTIVE-2 TO FIND OUT THE NUMBER OF PEOPLE GETTING LOAN APPROVED AS PER THEIR EDUCATION LEVEL?

```
48# 2. Number of people getting loan approved as per their education level
49ppedbar=sns.countplot(data=lsw,x="Education",\
50                        hue="Loan_Status",palette="rocket",)
51plt.axhline(0, color="k", clip_on=False)
52plt.title("Number of people getting loan approved as per their education level",fontsize=18)
53plt.xlabel("Educational Status",fontsize=15)
54plt.ylabel("Count",fontsize=15)
55plt.ylim(0,400)
56rects = ppedbar.patches
57for rect in rects:
58    y_value = rect.get_height()
59    x_value = rect.get_x() + rect.get_width() / 2
60    space = 5
61    va = 'bottom'
62    label = "{:}".format(y_value)
63    plt.annotate(label,(x_value, y_value),xytext=(0, space),\
64                textcoords="offset points",ha='center',va=va)
65plt.figure(figsize=(2,4))
66
```

Number of people getting loan approved as per their education level



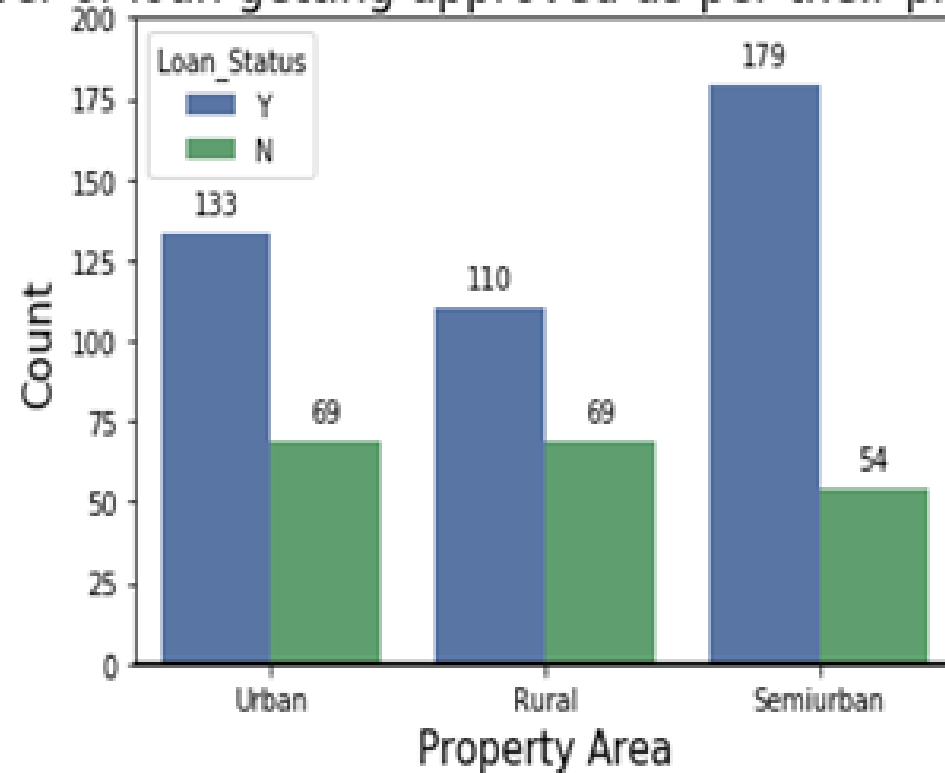
OBJECTIVE-2 TO FIND OUT THE NUMBER OF PEOPLE GETTING LOAN APPROVED AS PER THEIR EDUCATION LEVEL?

- **GRADUATES HAVE THREE TIMES MORE CHANCES OF GETTING A LOAN SANCTIONED AS COMPARED TO NON-GRADUATES.**

OBJECTIVE-3 TO FIND OUT THE NUMBER OF LOAN GETTING APPROVED AS PER THEIR PROPERTY AREA?

```
66
67# 3. Number of Loan getting approved as per their property area
68pabar=sns.countplot(data=lsw,x="Property_Area",\
69                    hue="Loan_Status",palette="deep",)
70plt.axhline(0, color="k", clip_on=False)
71plt.title("Number of loan getting approved as per their property area",fontsize=18)
72plt.xlabel("Property Area",fontsize=15)
73plt.ylabel("Count",fontsize=15)
74plt.ylim(0,200)
75rects = pabar.patches
76for rect in rects:
77    y_value = rect.get_height()
78    x_value = rect.get_x() + rect.get_width() / 2
79    space = 5
80    va = 'bottom'
81    label = "{:}".format(y_value)
82    plt.annotate(label,(x_value, y_value),xytext=(0, space),\
83                textcoords="offset points",ha='center',va=va)
84plt.figure(figsize=(2,4))
85
```


Number of loan getting approved as per their property area



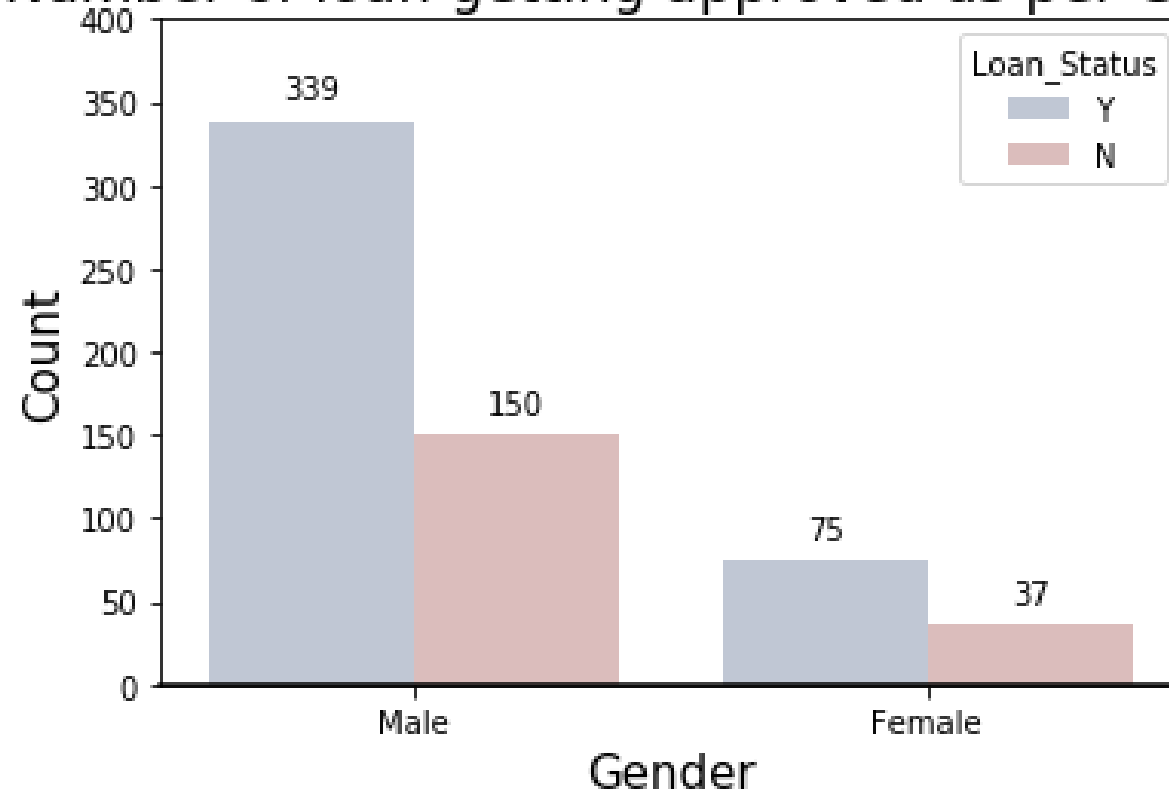
OBJECTIVE-3 TO FIND OUT THE NUMBER OF LOAN GETTING APPROVED AS PER THEIR PROPERTY AREA?

- **RESIDENTS OF SEMI-URBAN AND URBAN AREAS APPLY MORE FOR HOME LOAN AS COMPARED TO RURAL AREAS, WHICH IS CLEARLY AFFECTED BY CULTURE LIKE JOINT FAMILIES IN RURAL AREAS & OTHER SOCIAL DETERMINANTS.**

OBJECTIVE-4 TO FIND OUT THE NUMBER OF LOAN GETTING APPROVED AS PER GENDER?

```
85
86# 4.Number of loan getting approved as per Gender
87glbar=sns.countplot(data=lsw,x="Gender",\
88                    hue="Loan_Status",palette="vlag",)
89plt.axhline(0, color="k", clip_on=False)
90plt.title("Number of loan getting approved as per Gender",fontsize=18)
91plt.xlabel("Gender",fontsize=15)
92plt.ylabel("Count",fontsize=15)
93plt.ylim(0,400)
94rects = glbar.patches
95for rect in rects:
96    y_value = rect.get_height()
97    x_value = rect.get_x() + rect.get_width() / 2
98    space = 5
99    va = 'bottom'
100    label = "{:}".format(y_value)
101    plt.annotate(label,(x_value, y_value),xytext=(0, space),\
102               textcoords="offset points",ha='center',va=va)
103plt.figure(figsize=(2,4))
104
```

Number of loan getting approved as per Gender



**OBJECTIVE-4 TO FIND OUT THE
NUMBER OF LOAN GETTING
APPROVED AS PER GENDER?**

**THIS DATA EXHIBITS THAT
ONLY ONE FOURTH OF TOTAL
APPLICANTS ARE FEMALE.**

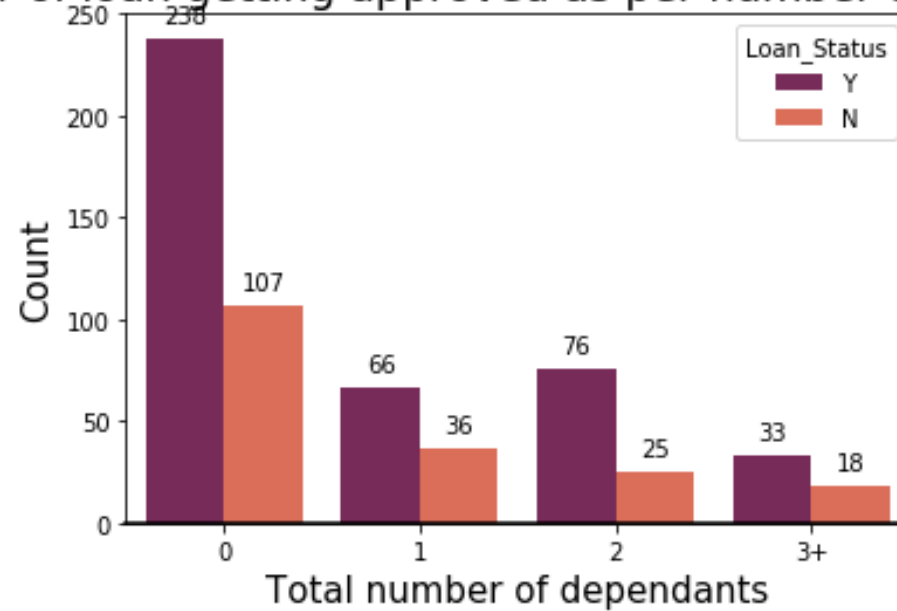
OBJECTIVE-5 TO FIND OUT THE NUMBER OF LOAN GETTING APPROVED AS PER NUMBER OF DEPENDENTS?

```
104
105# 5.Number of loan getting approved as per number of dependants
106dbar=sns.countplot(data=lsw,x="Dependents",\
107                    hue="Loan_Status",palette="rocket")
108plt.axhline(0, color="k", clip_on=False)
109plt.title("Number of loan getting approved as per number of dependants",fontsize=18)
110plt.xlabel("Total number of dependants",fontsize=15)
111plt.ylabel("Count",fontsize=15)
112plt.ylim(0,250)
113rects = dbar.patches
114for rect in rects:
115    y_value = rect.get_height()
116    x_value = rect.get_x() + rect.get_width() / 2
117    space = 5
118    va = 'bottom'
119    label = "{:}".format(y_value)
120    plt.annotate(label,(x_value, y_value),xytext=(0, space),\
121                textcoords="offset points",ha='center',va=va)
122plt.figure(figsize=(2,4))
123
```


OBJECTIVE-5 TO FIND OUT THE NUMBER OF
LOAN GETTING APPROVED AS PER NUMBER
OF DEPENDENTS?

- **NUMBER OF DEPENDENTS
HAVE AN INVERSE
RELATIONSHIP WITH LOAN
APPROVAL.**

Number of loan getting approved as per number of dependants



THANK YOU