

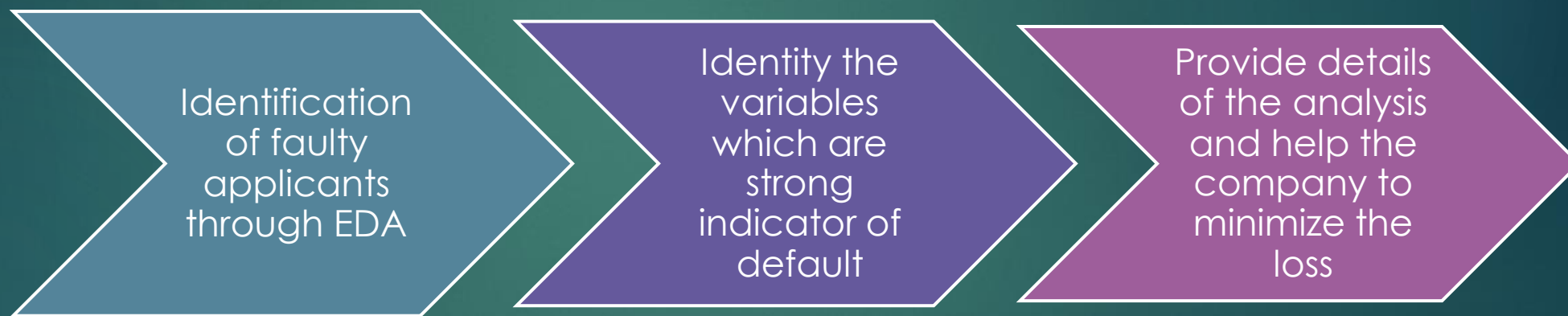


CASE STUDY : LENDER CLUB

AUTHORS

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Business Objectives



DATA CLEANING

Fix the rows and columns

Fix the missing values

Standardized values

Fix the invalid values in dataframe

Filtered the data as per the requirement

Driving Factor :

Interest Rate (int_rate)

EDA Type:

Univariate Analysis and segmented univariate

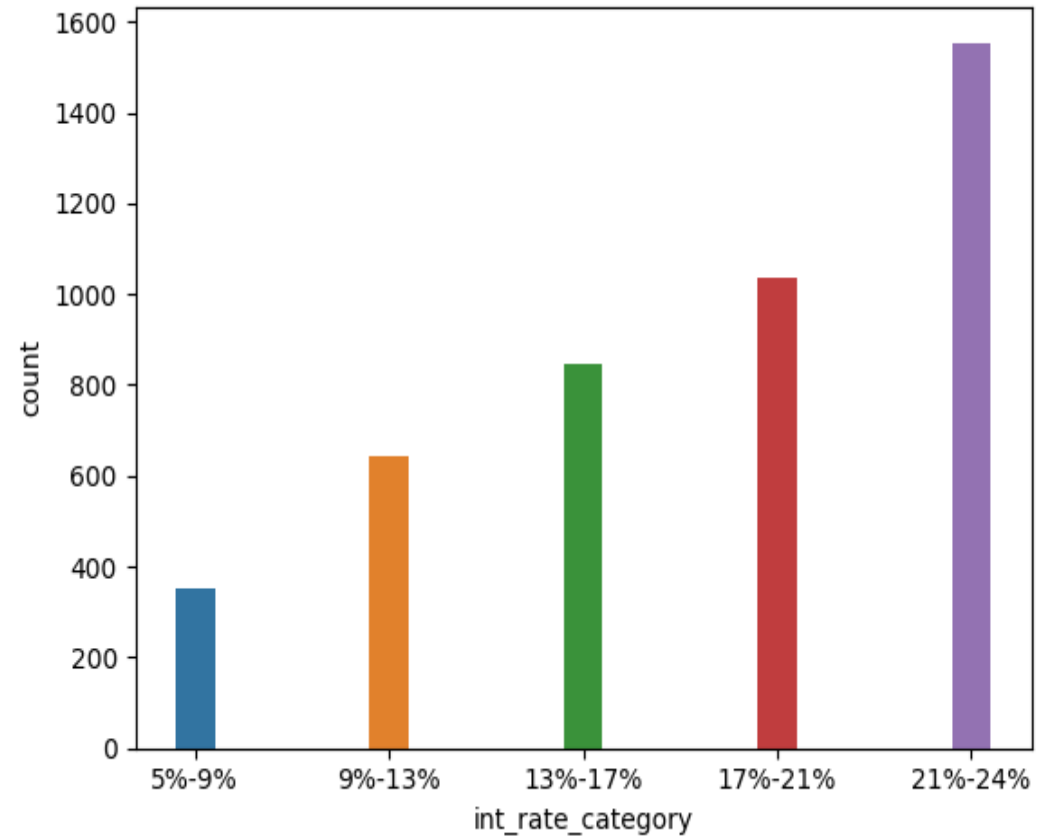
Graph Type:

Bar Plot

Analysis:

As the graphs inform,
1. Applicants having the higher interest rate in loan are more likely to be defaulter.

Out[91]: []



Driving Factor :

Purpose

EDA Type:

Univariate Analysis and segmented univariate

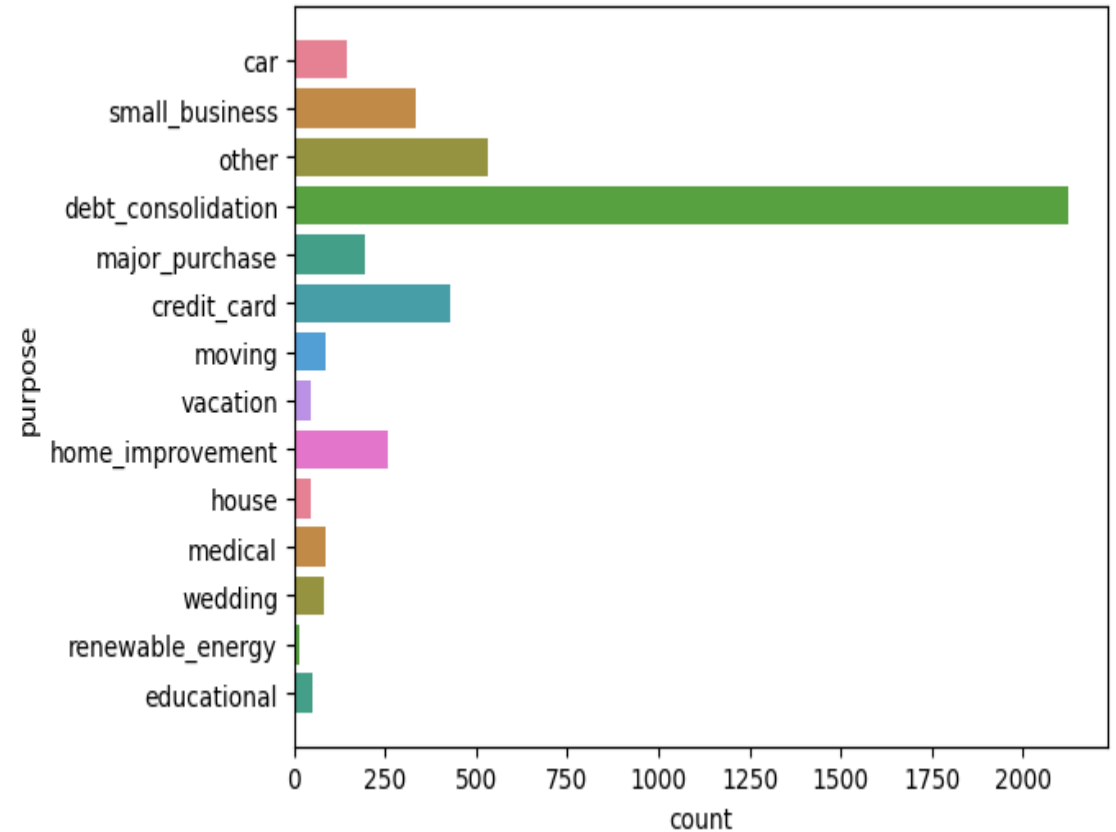
Graph Type:

Bar chart

Analysis:

More people took a new loan to clear up the old loans, this kinds of applicants having high possibility they might default the loan.

```
Out[87]: []
```



Driving Factor :

revol_util

EDA Type:

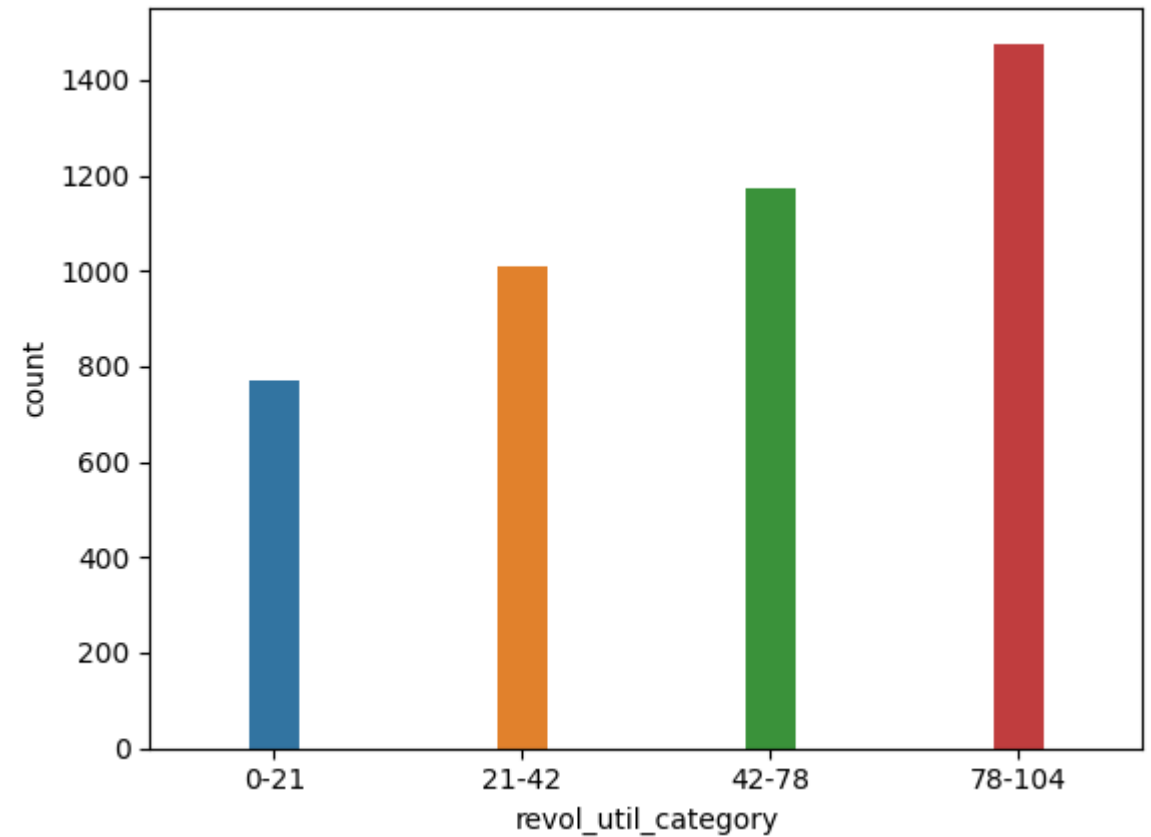
Univariate Analysis and segmented univariate

Graph Type:

Bar chart

Analysis:

Higher the revolving utilization rate more chances of getting default.



Driving Factor :

dti

EDA Type:

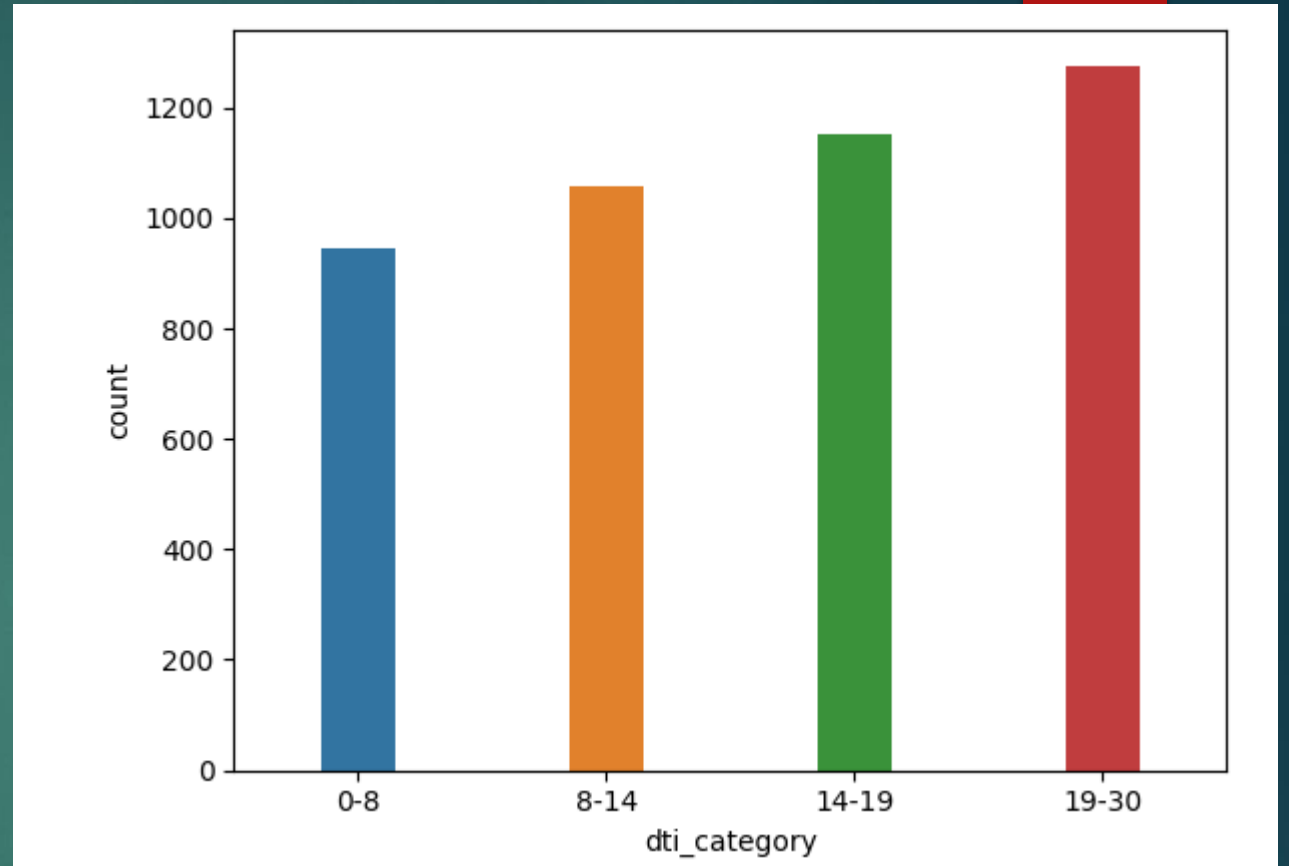
Univariate Analysis and segmented univariate

Graph Type:

Bar chart

Analysis:

Higher the debt-to-income higher is the chances of getting default



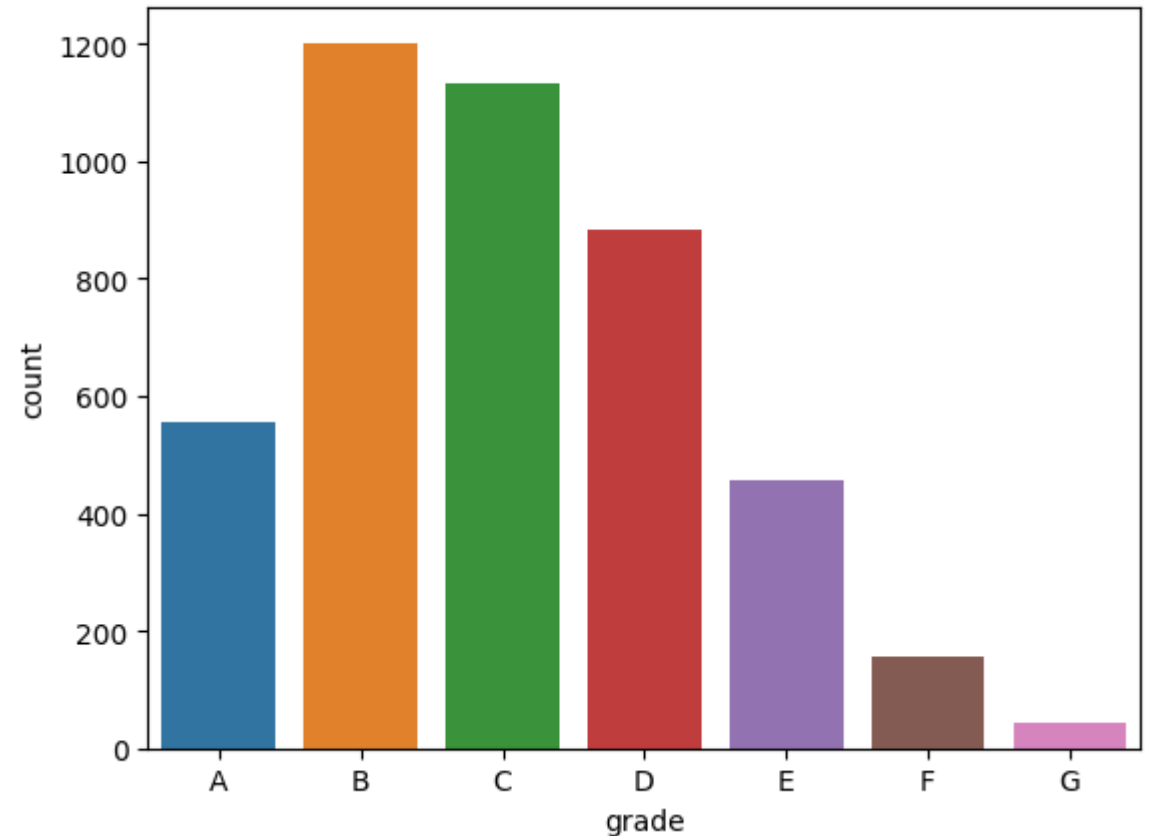
Driving Factor :
grade

EDA Type:
Univariate Analysis and segmented univariate

Graph Type:
Bar chart

Analysis:
Applicants loan which are marked as the as B by LC are more likely to be fall under defaulter list.

```
Out[81]: <Axes: xlabel='grade', ylabel='count'>
```



Driving Factor :

loan vs dti

EDA Type:

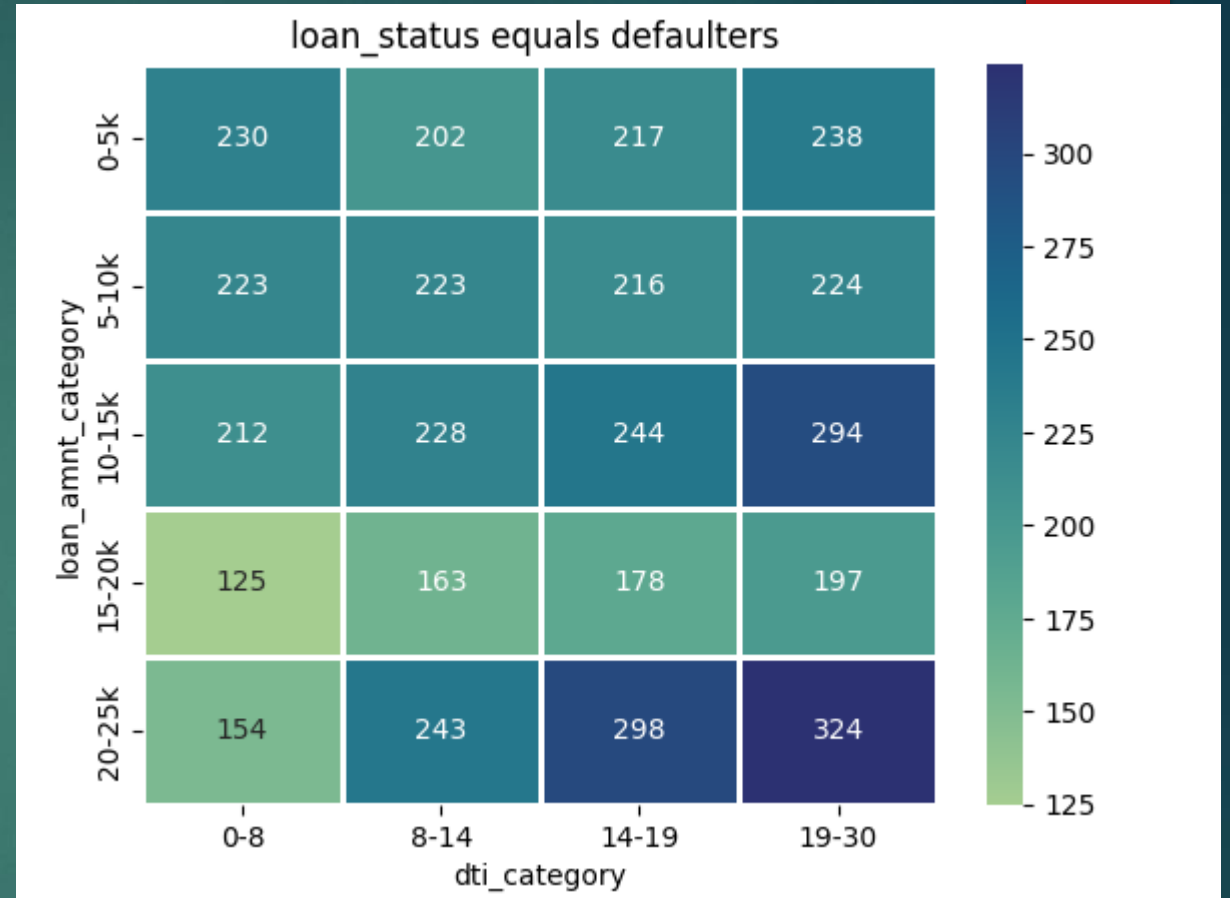
Bivariate Analysis

Graph Type:

Heatmap

Analysis:

Applicants whose high dti range and high loan amounts having higher chances of getting their loan default.

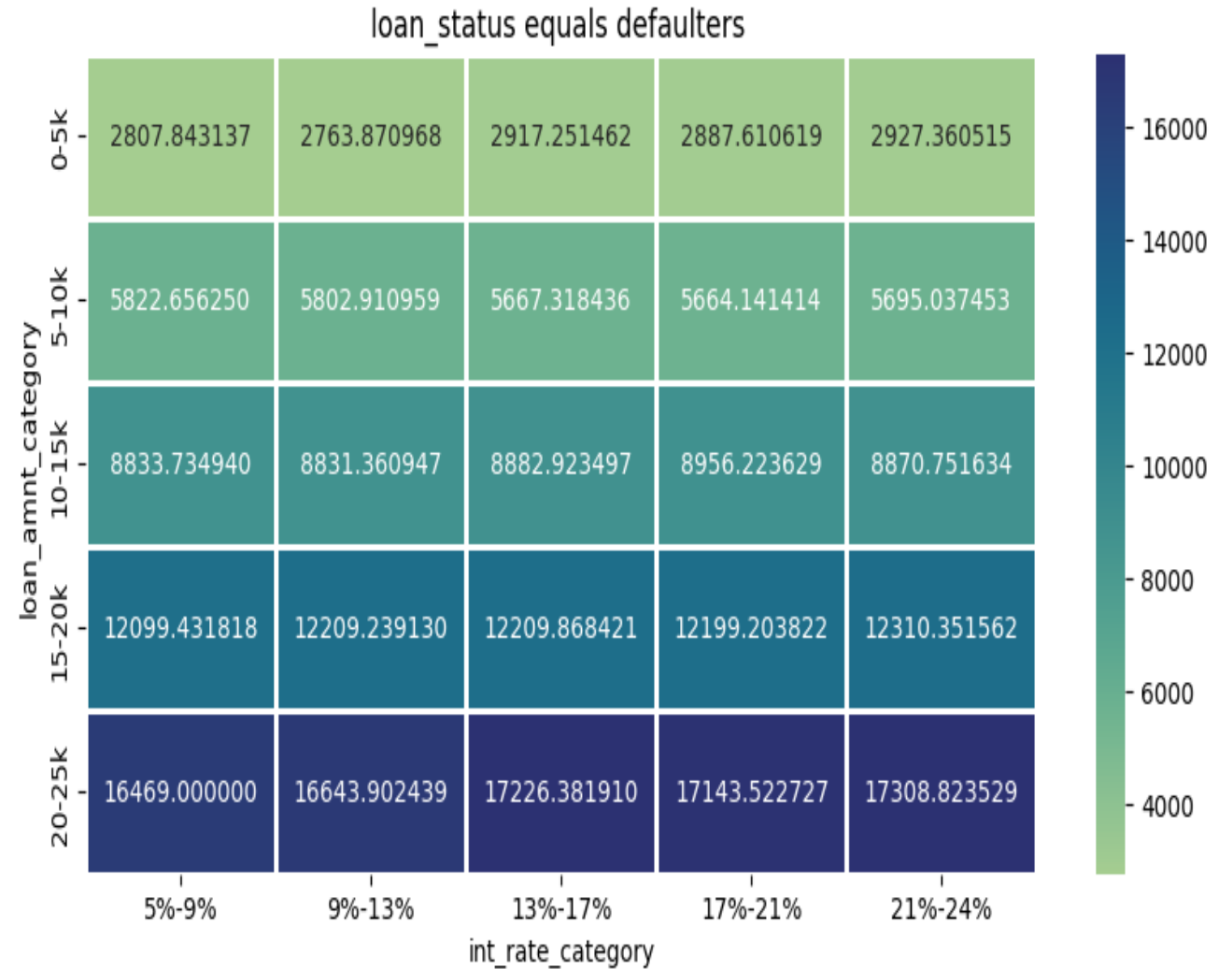


Driving Factor :
loan vs interest_rate

EDA Type:
Bivariate Analysis

Graph Type:
Heatmap

Analysis:
Applicants who have take loans
at much higher interest rate
more like likely to be a defaulter



Driving Factor :

int_rates vs annual_inc on
loan_amnt.

EDA Type:

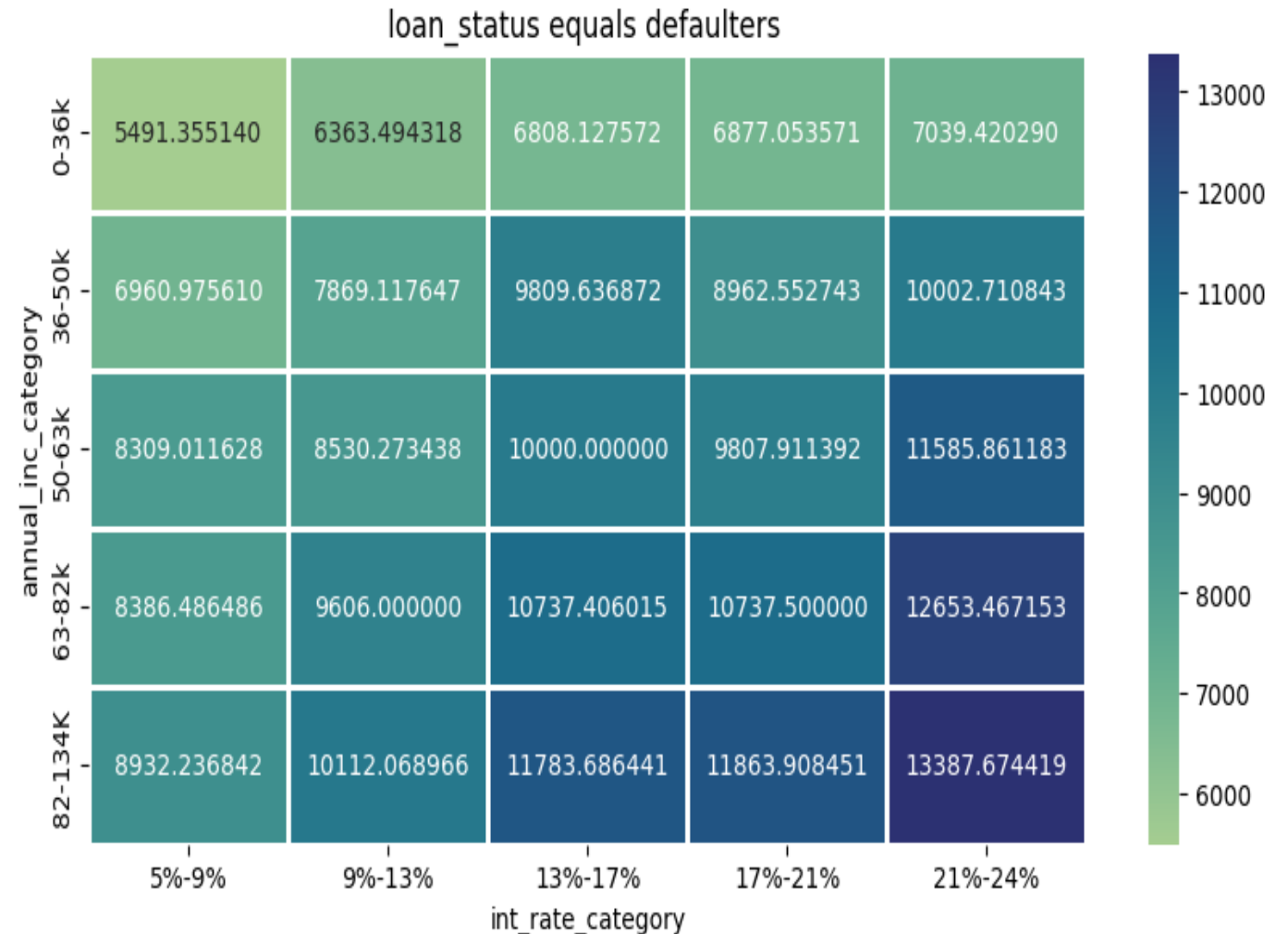
Multivariate Analysis

Graph Type:

heatmap

Analysis:

1. Even people with high annual income also falls under defaulter list.
2. The people who has taken loans for any purpose in high interest rate are more likely to fall under defaulter list

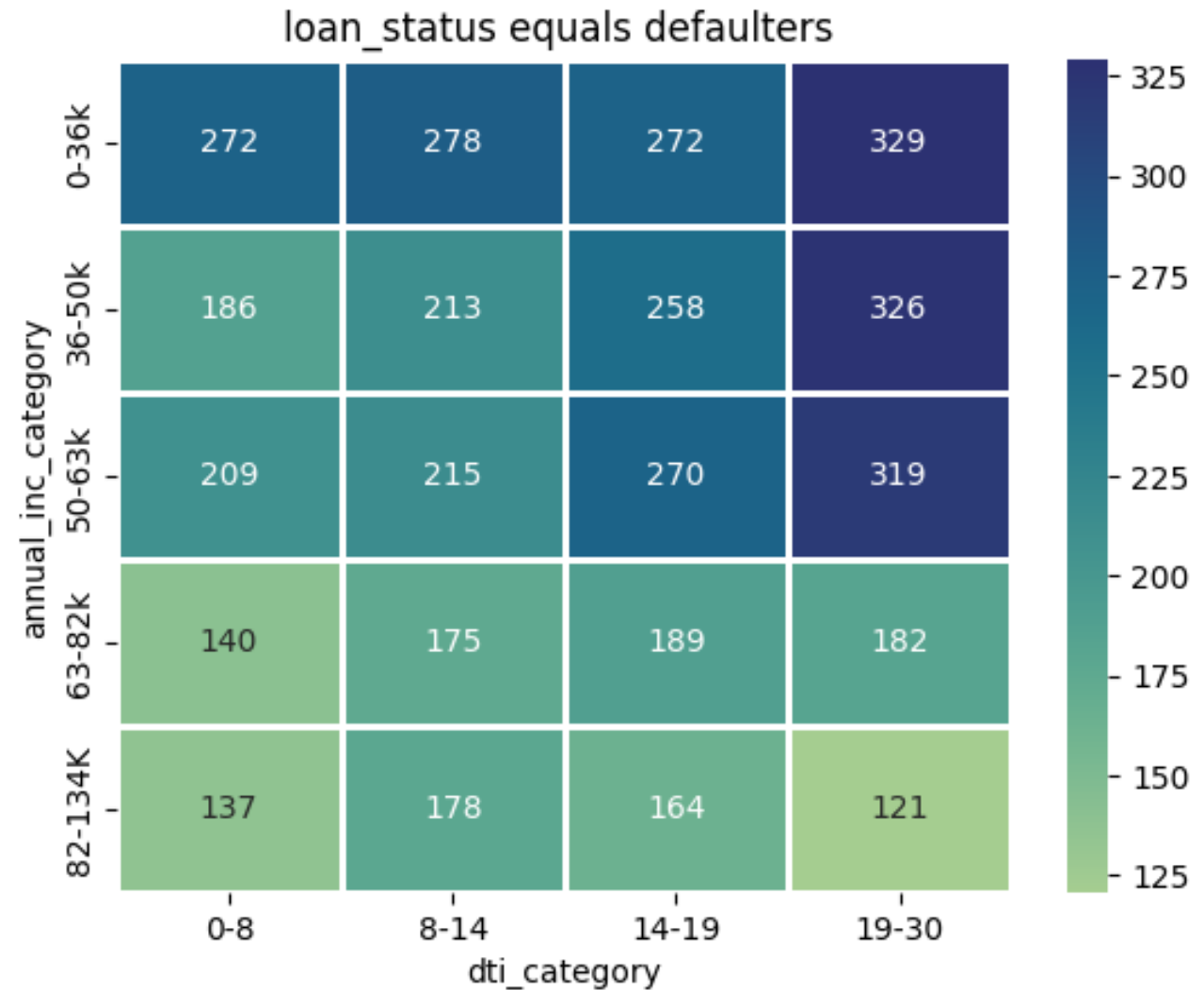


Driving Factor :
dti vs annual_inc

EDA Type:
Bivariate Analysis

Graph Type:
heatmap

Analysis:
Applicants having lower income range and having higher dti rate more likely to fall under defaulter list.

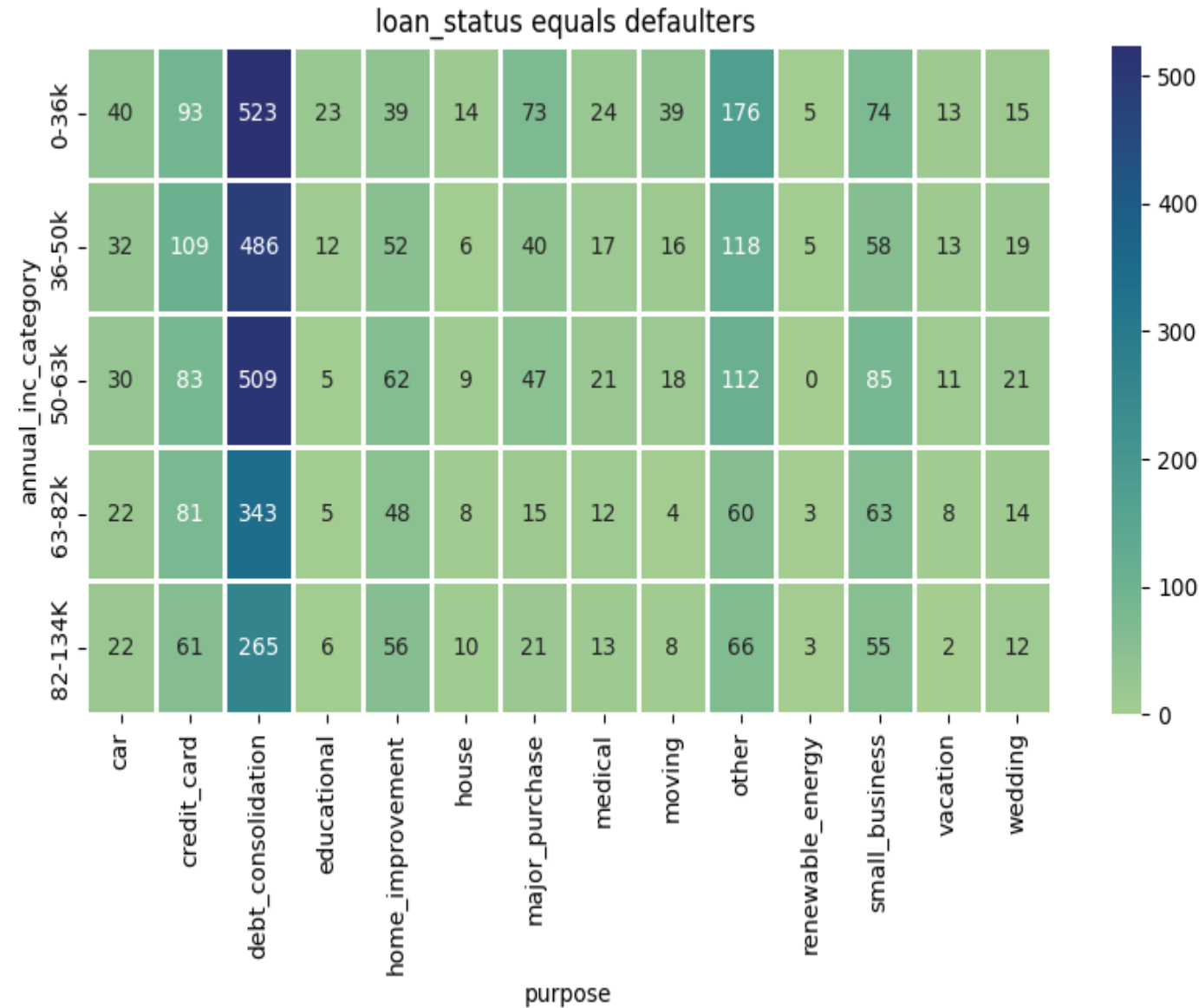


Driving Factor :
purpose vs annual_inc

EDA Type:
Bivariate Analysis

Graph Type:
heatmap

Analysis:
Applicants having lower
income range and took loans
for debt consolidations.



Driving Factor :
loan_amnt vs grade

EDA Type:
Bivariate Analysis

Graph Type:
heatmap

Analysis:
Applicants borrow high loan amounts and marked as Grade G by LC more likely to be a defaulter.



Driving Factor :

purpose vs charged off proportions

EDA Type:

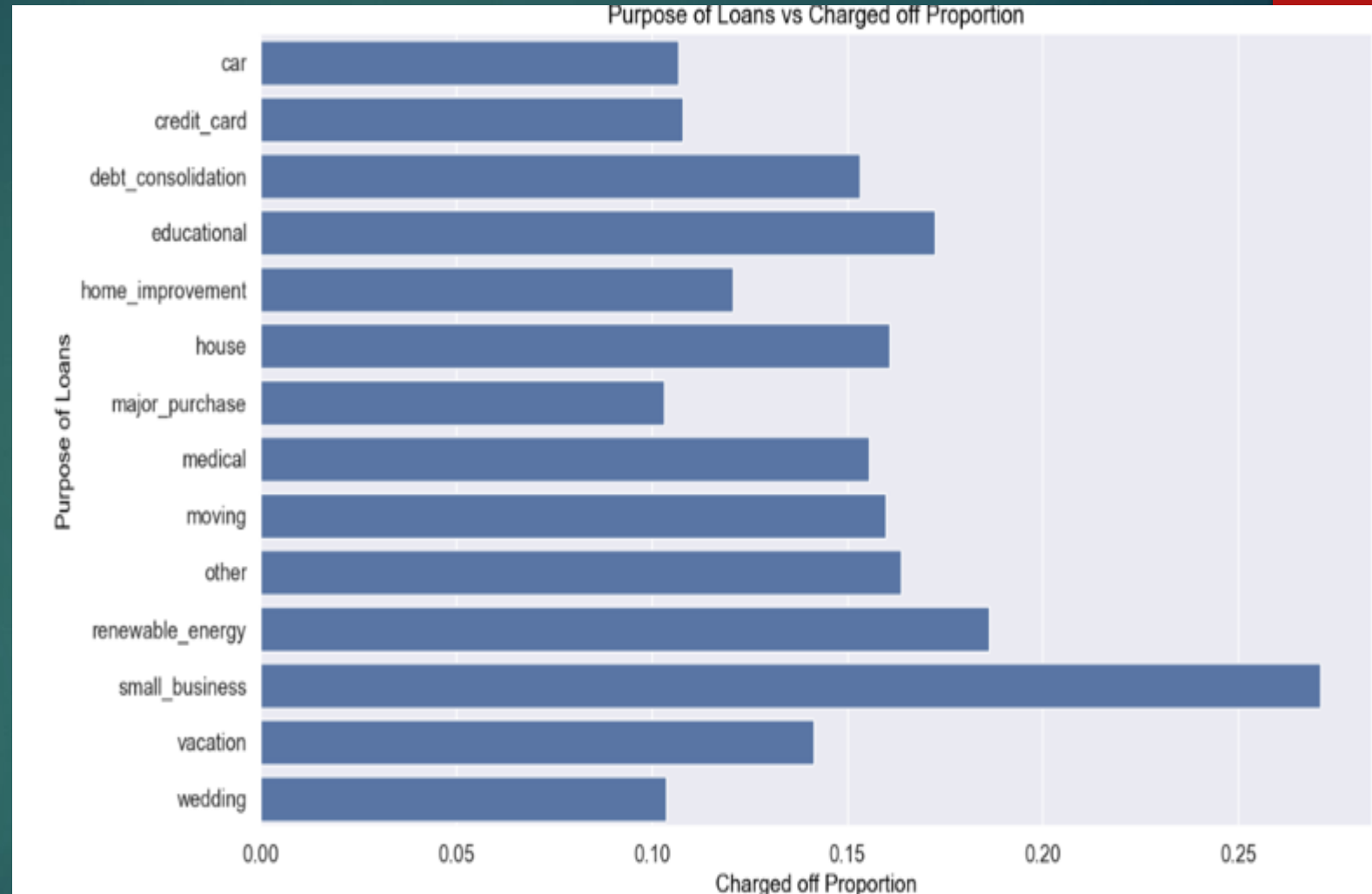
Bivariate Analysis

Graph Type:

bargraph

Analysis:

We have calculated the proportion of each loan purpose which are marked as Charged Off it seems that we got high proportion for small business.



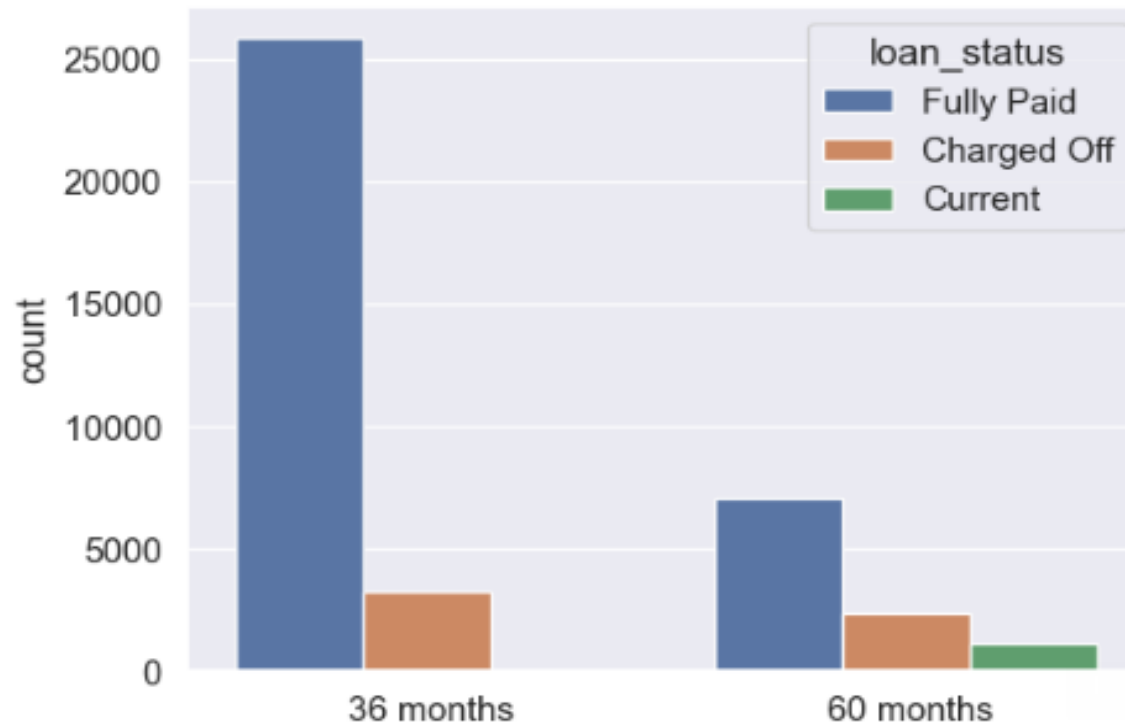
Driving Factor :
terms vs loan status

EDA Type:
Bivariate Analysis

Graph Type:
bargraph

Analysis:
When comparing the loan status vs charged off proportions there is observed a high chance of being charged off for 36 months also high chance for fully paid .

```
term    loan_status    count
36 months    Charged Off    3227
            Fully Paid    25869
60 months    Charged Off    2400
            Current    1140
            Fully Paid    7081
dtype: int64
<Axes: xlabel='term', ylabel='count'>
```



Conclusions:

1. The people who has taken loans for any purpose in high interest rate are more likely to fall under defaulter list.
2. Higher DTI (debt to income ratio) suggests higher chance of default.
3. There is an increased chance of default when purpose is debt_consolidation.
4. Higher loan amount results in higher chance of default.
5. Applicants having lower income range and having higher dti rate more likely to fall under defaulter list.
6. Applicants whose high dti range and high loan amounts having higher chances of getting their loan default.
7. Applicants who have take loans at much higher interest rate more like likely to be a defaulter.
8. Applicants having lower income range and took loans for debt consolidations.
9. Higher the revolving utilization rate more chances of getting default.
10. We have calculated the proportion of each loan purpose which are marked as Charged Off it seems that we got high proportion for small business.
11. When comparing the loan status vs charged off proportions there is observed a high chance of being charged off for 36 months also high chance for fully paid .

DRIVING FACTORS:

1. Interest rate
2. Purpose
3. Grade
4. revol_util
5. DTI (Debt to income ratio)
6. charged off proportions for each loan purpose
7. terms



**THANKYOU
BATCH MAY 31,2024**