

The background of the entire slide is a dense, overlapping field of three-dimensional numbers (0-9) in various shades of blue and white. The numbers are rendered with a 3D effect, giving them a sense of depth and volume. They are scattered across the frame, with some appearing larger and more prominent than others, creating a complex, textured visual field.

Lending Club Case Study

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Business Problem



Lending Club is a largest online company that facilitate personal loans, business loans and financing of medical procedures.

Like most companies that grant loans to customers, lending to risky customers is the largest source of financial loss. So, it is essential to adopt deep analysis to know exactly the patterns for those customers who could lead to financial loss.

Identification of these customers through Exploratory Data Analysis is the goal of this case study.

In other words, the company wants to know the real driving factors behind loan default i.e. the variables which are strong indicators of a customer to default.



Analysis Methodology

Title Lorem Ipsum



**Data
Loading**



**Data
Preprocessing**



**Univariate &
Bivariate
Analysis**



Inferences & Insights

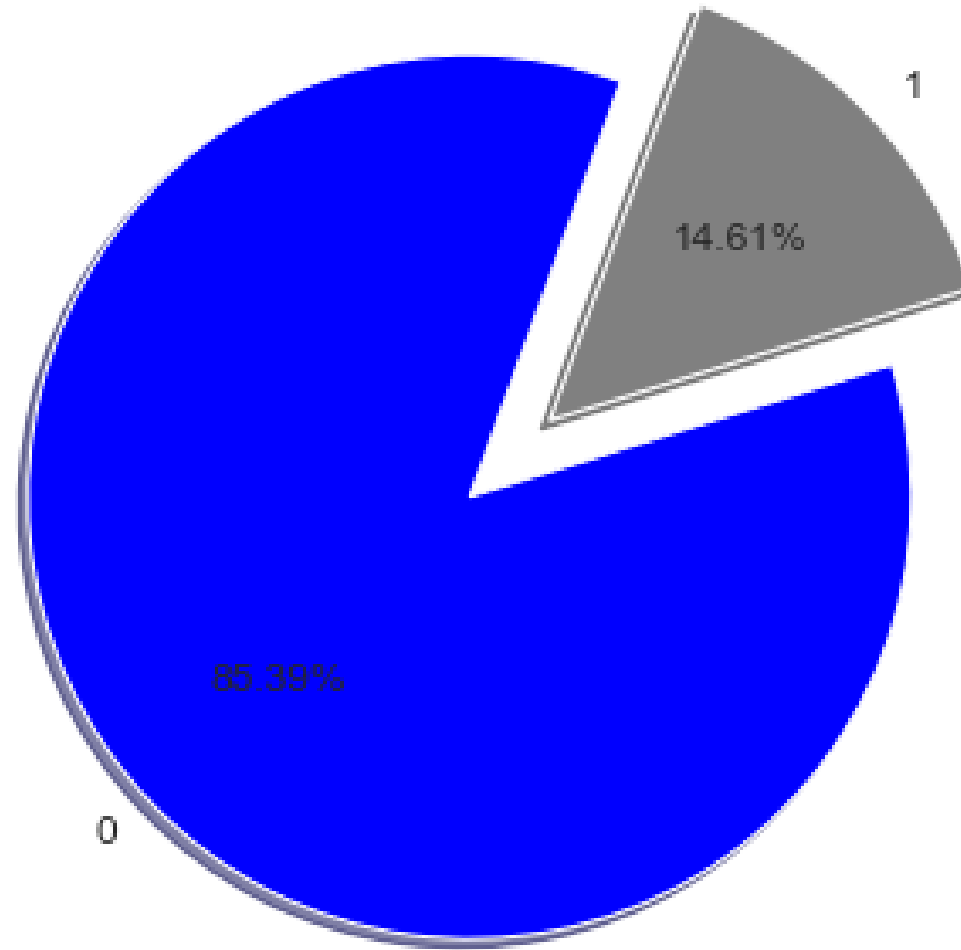


Recommendations



Data Analysis

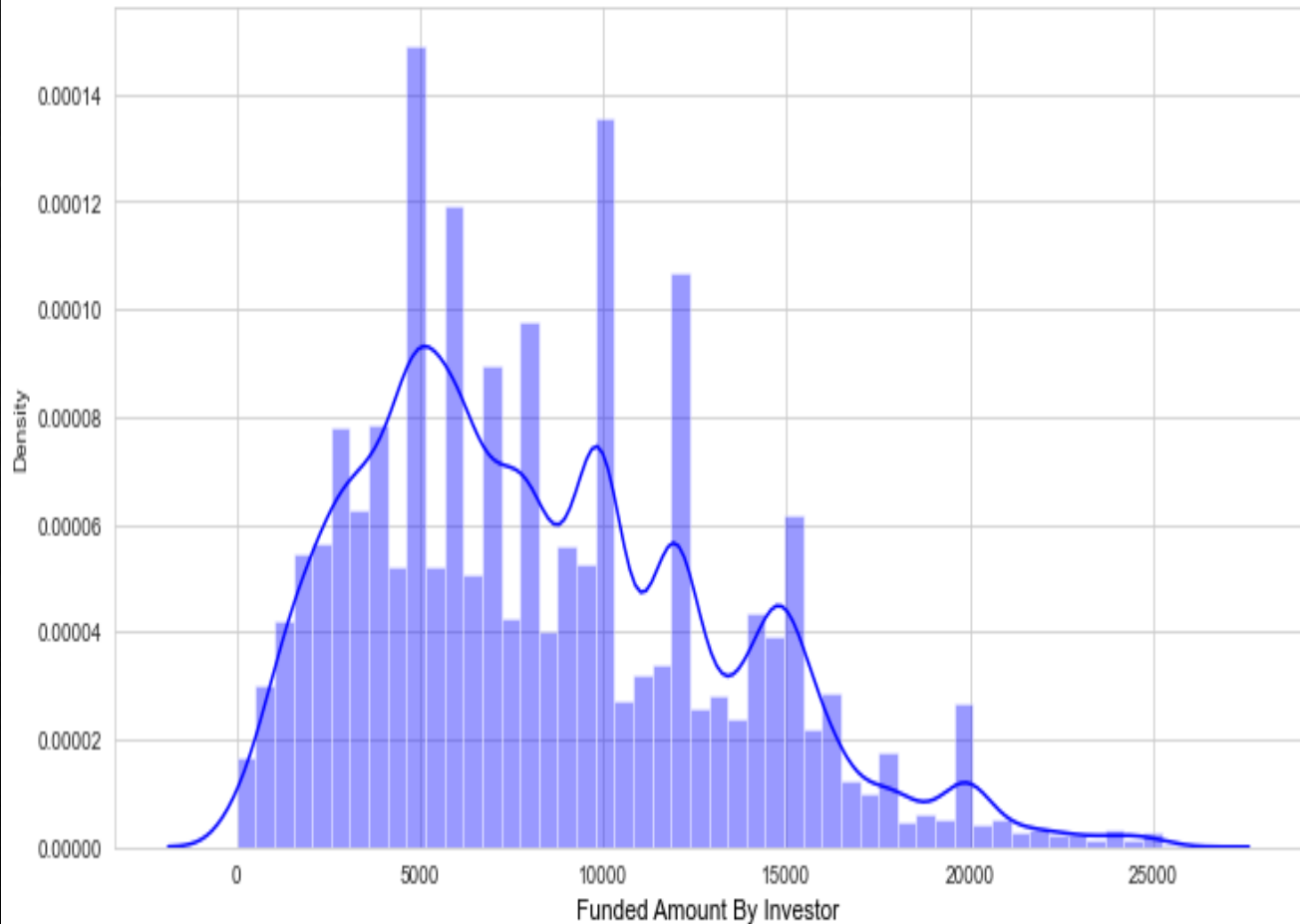
Loan Status



Loan Status:

Generally, 14% of Customers are defaulters. While 85% are fully paid customers

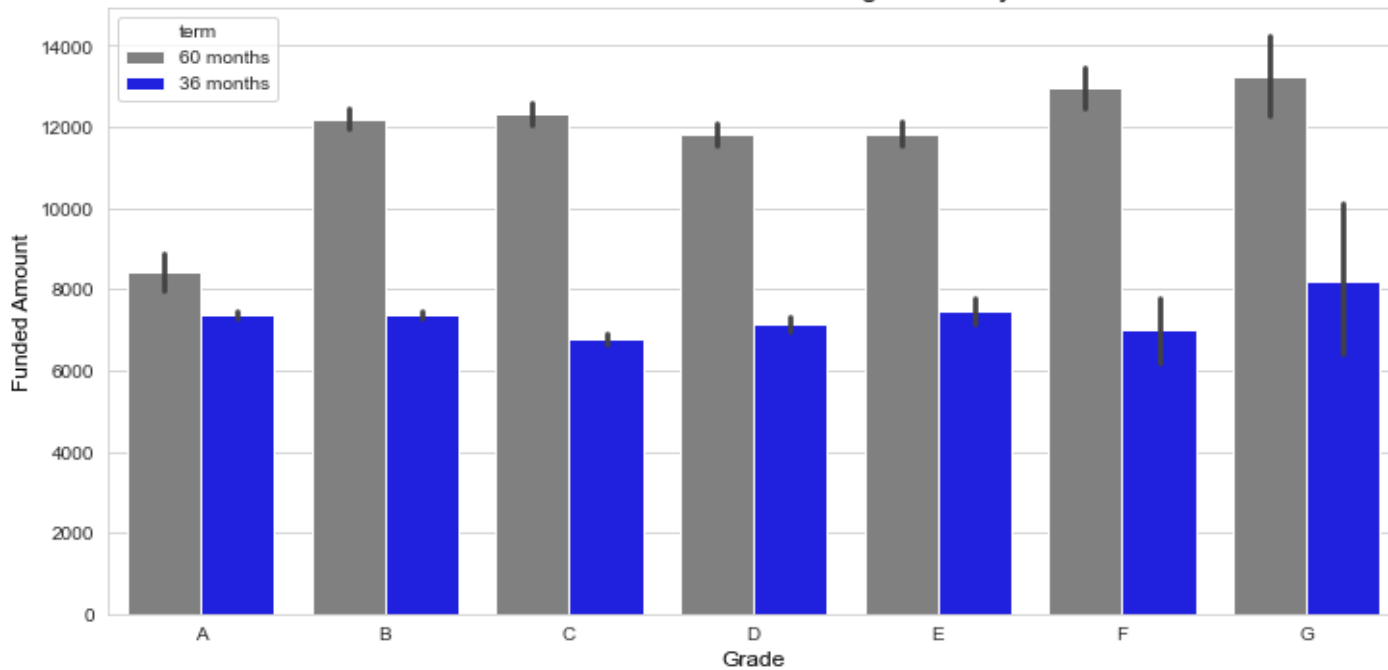
Funded Amount Distribution



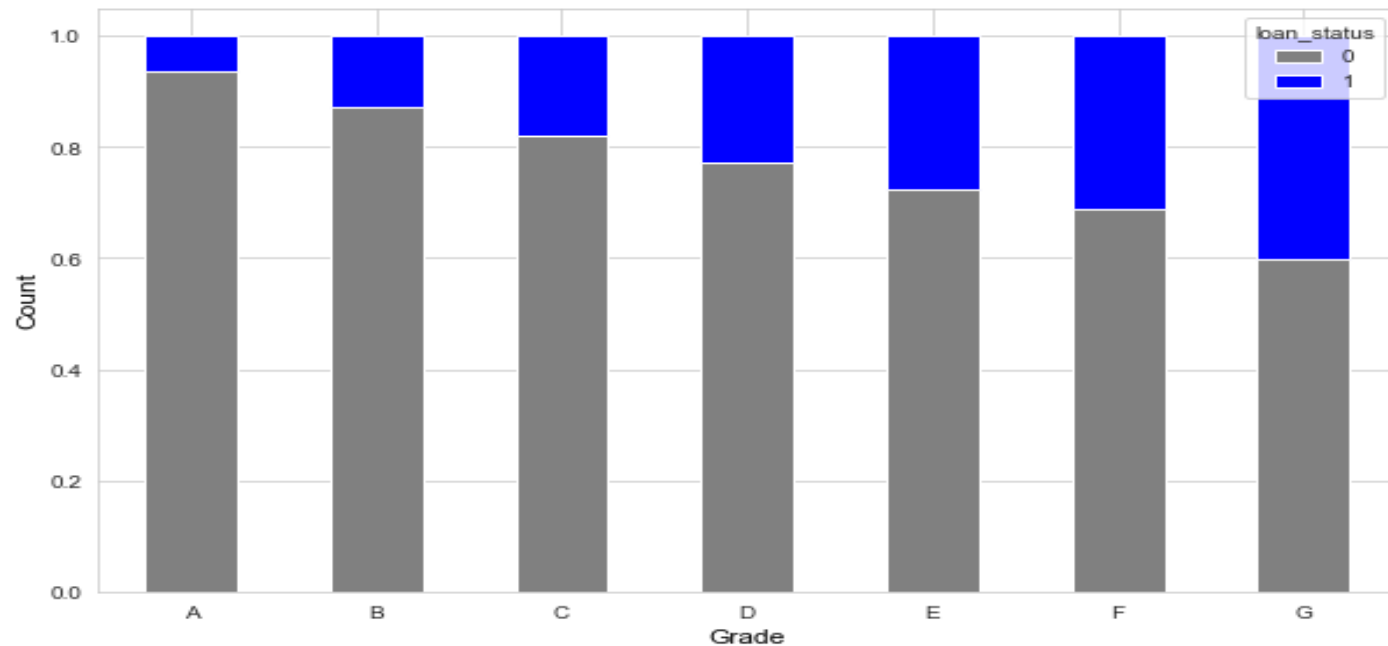
Funded Amount:

Most of the Funded Amount by investors is between 5K and 10K with spikes in 5K multiples

Funded Amount across Grade segmented by Term

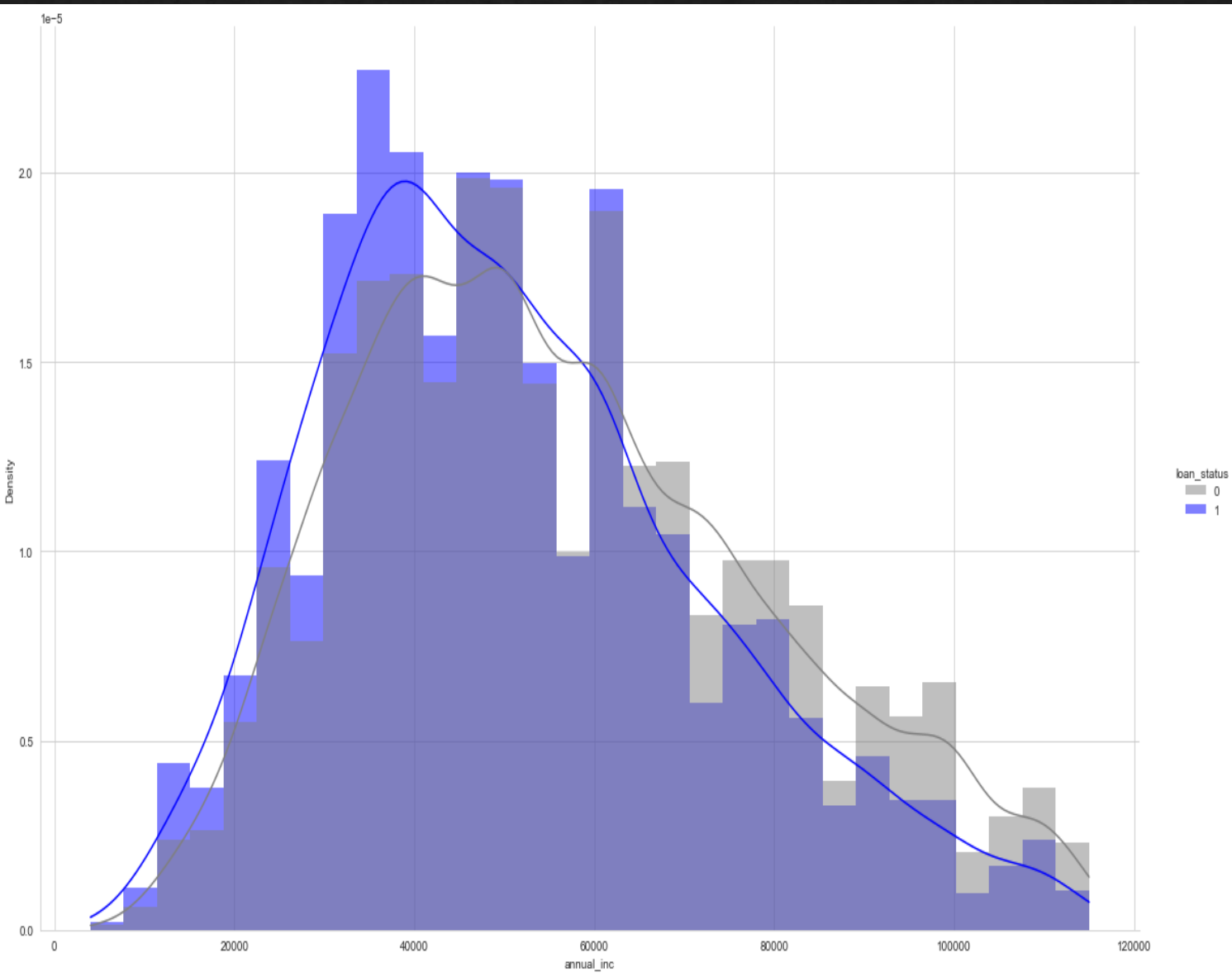


Number of Application across Grade segmented by Loan Status

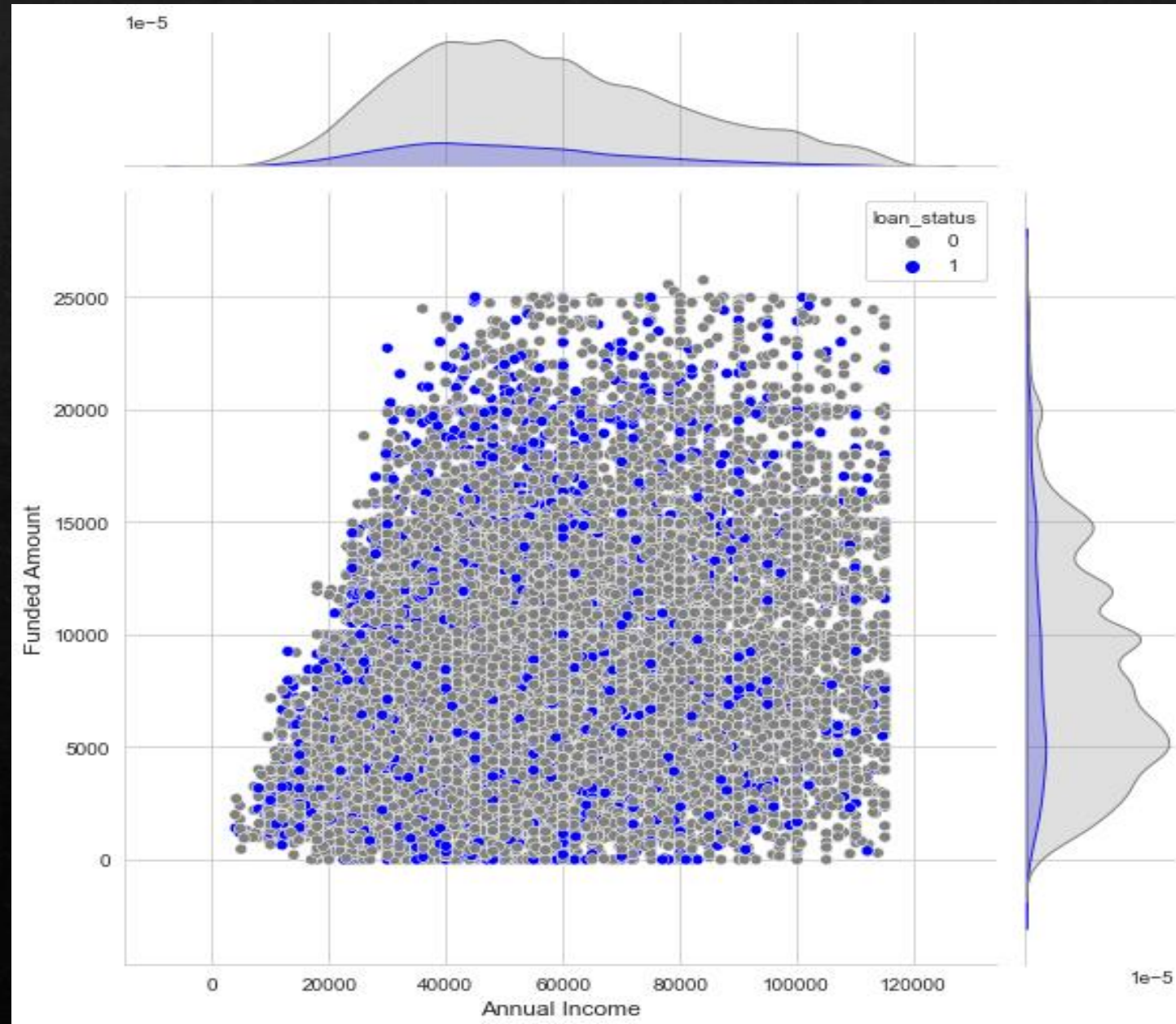


Grade & Term & Funded Amount:

Grade 'G' has the highest rate of customers who defaults on their loan yet it is the most funded category and has the highest interest of all grades.

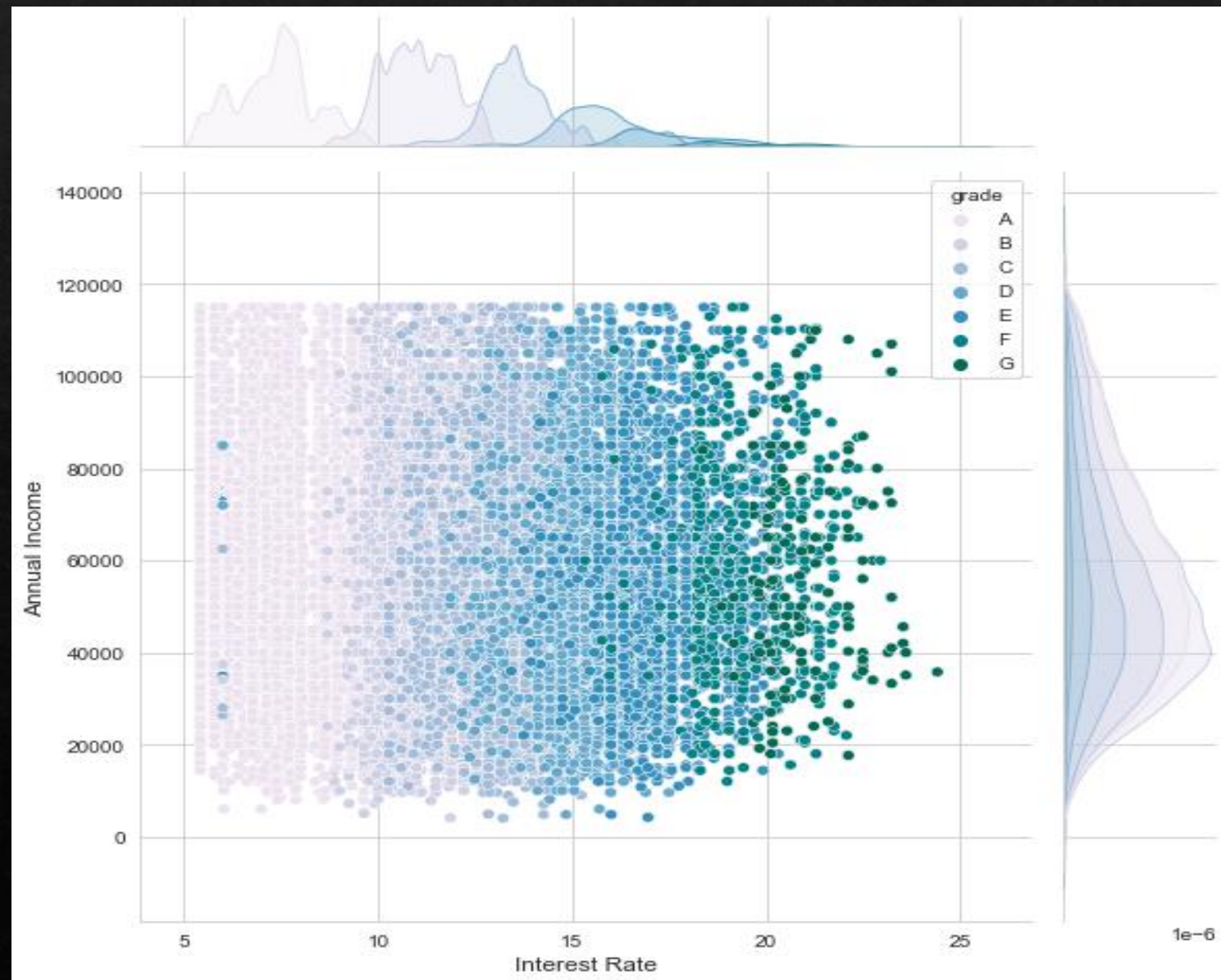


Annual Income:
Customers with annual income less than or equal to 40K are likely default.



Annual Income:

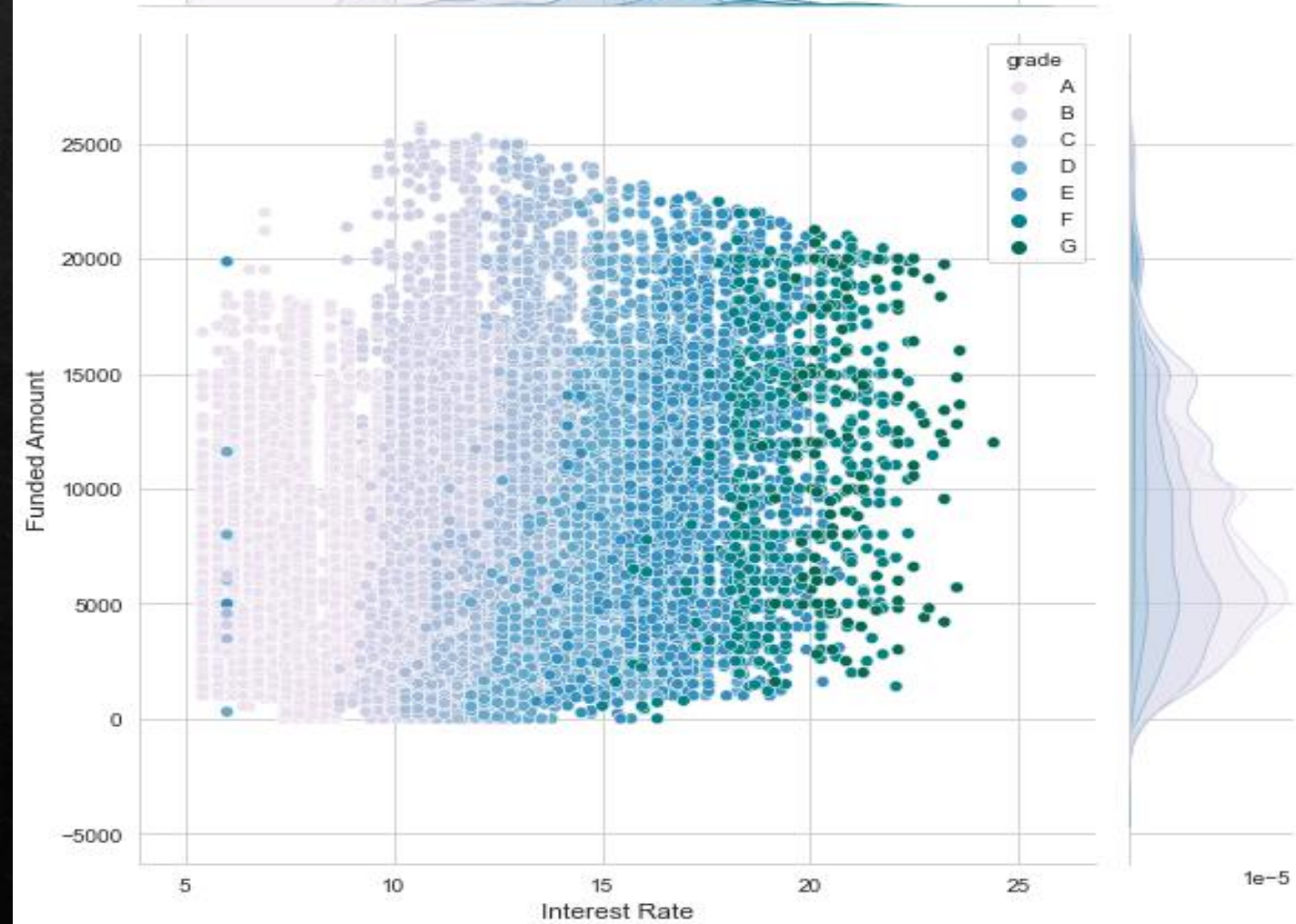
Customers with around 40K annual income who are funded with around 20K are likely to default. Meaning, funding with half of the annual income could lead to defaulting customer.



Interest Rate & Annual Income with Grades:

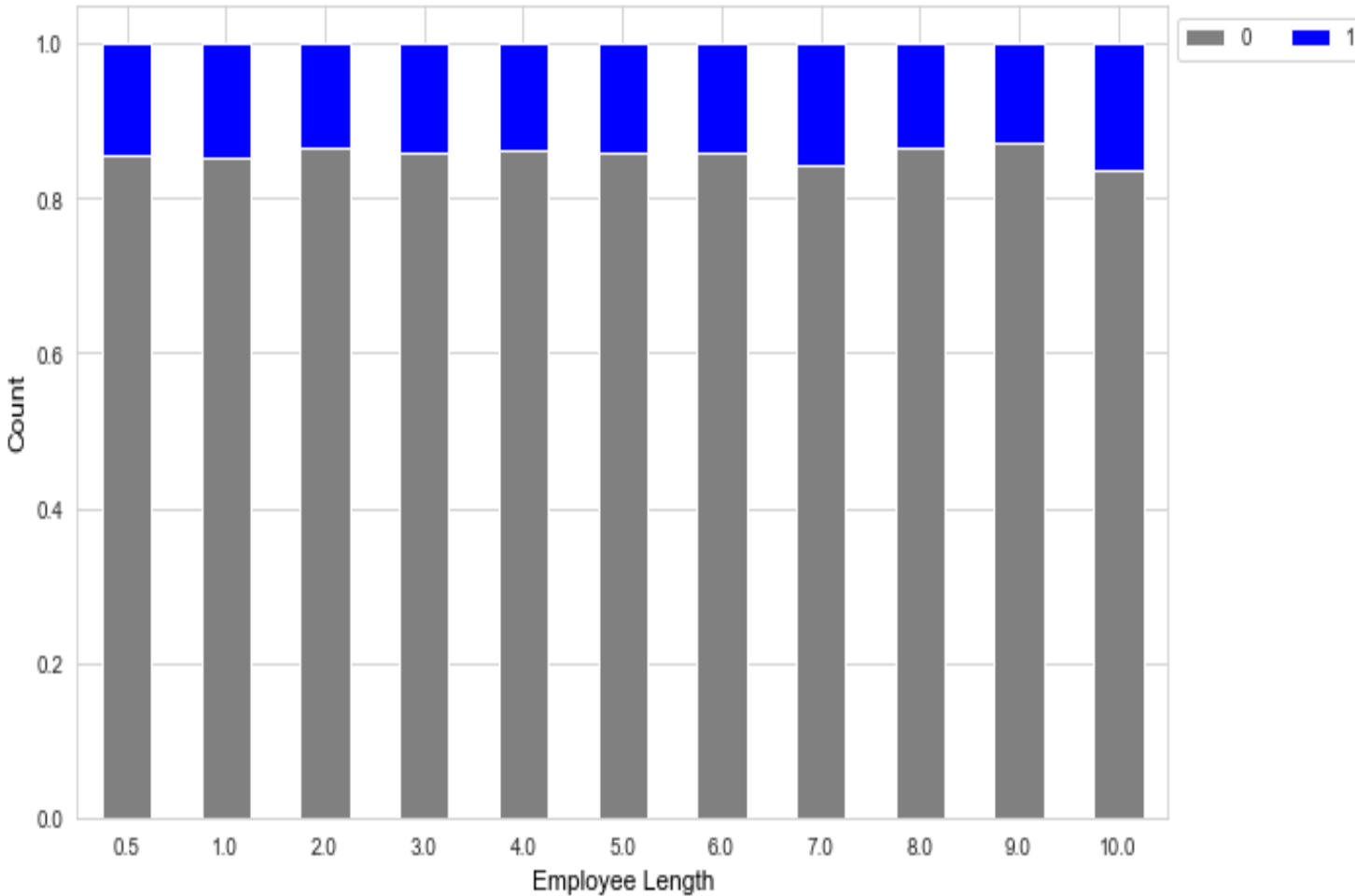
Keeping in mind that Grade “G” is most defaulting grade, from the graph on the left, it is showing that as grade goes down (towards Grade “G”), interest rate goes up regardless of the annual income or the funded amount (As in the next graph). Interest Rate is very strong factor of a customer to default. Whenever the interest rate increases, the probability of default increases.

Funded Amount vs Interest Rate
across Grades

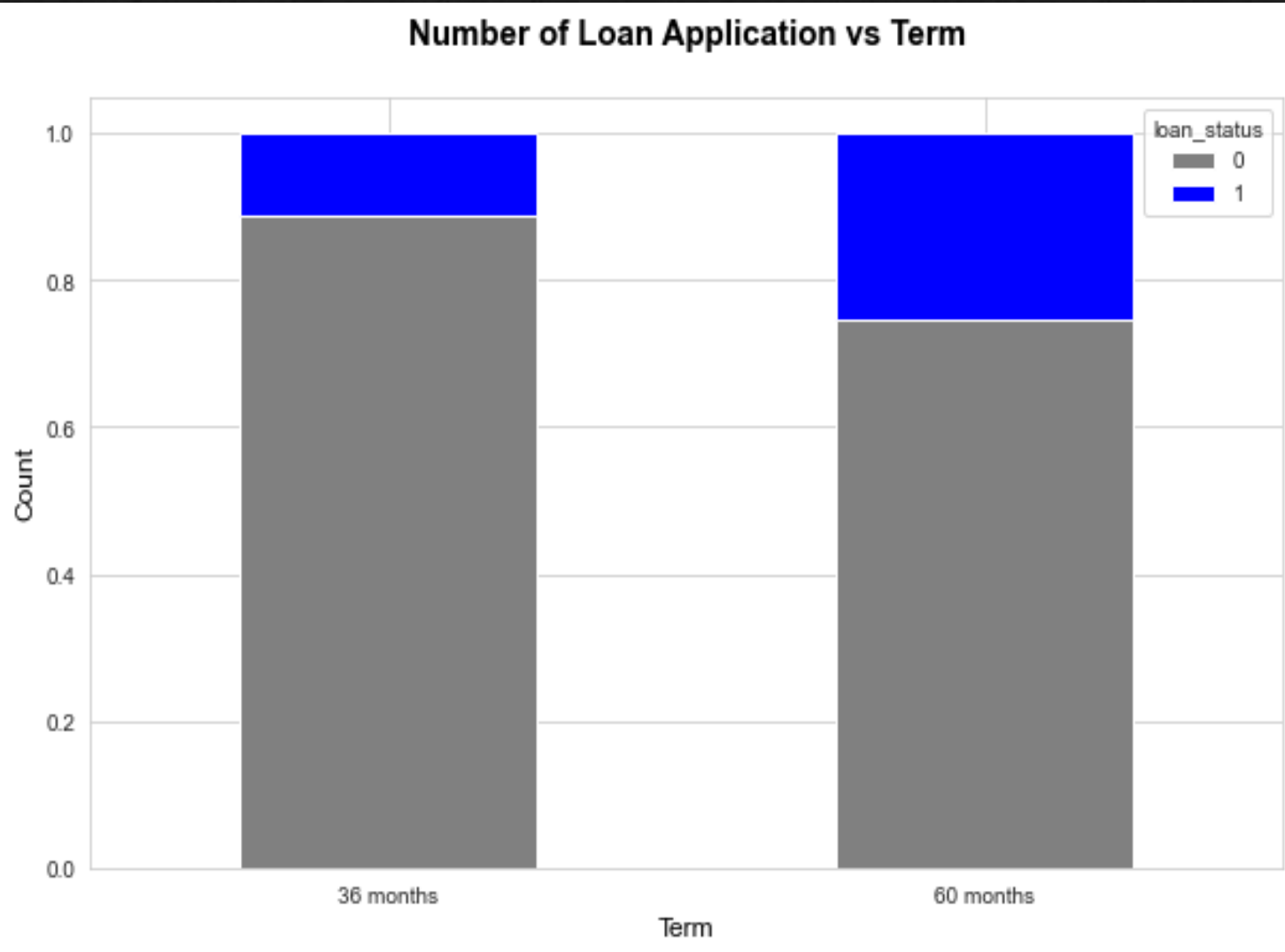


Interest Rate
&
Funded Amount

Number of Loan Application vs Employee Length

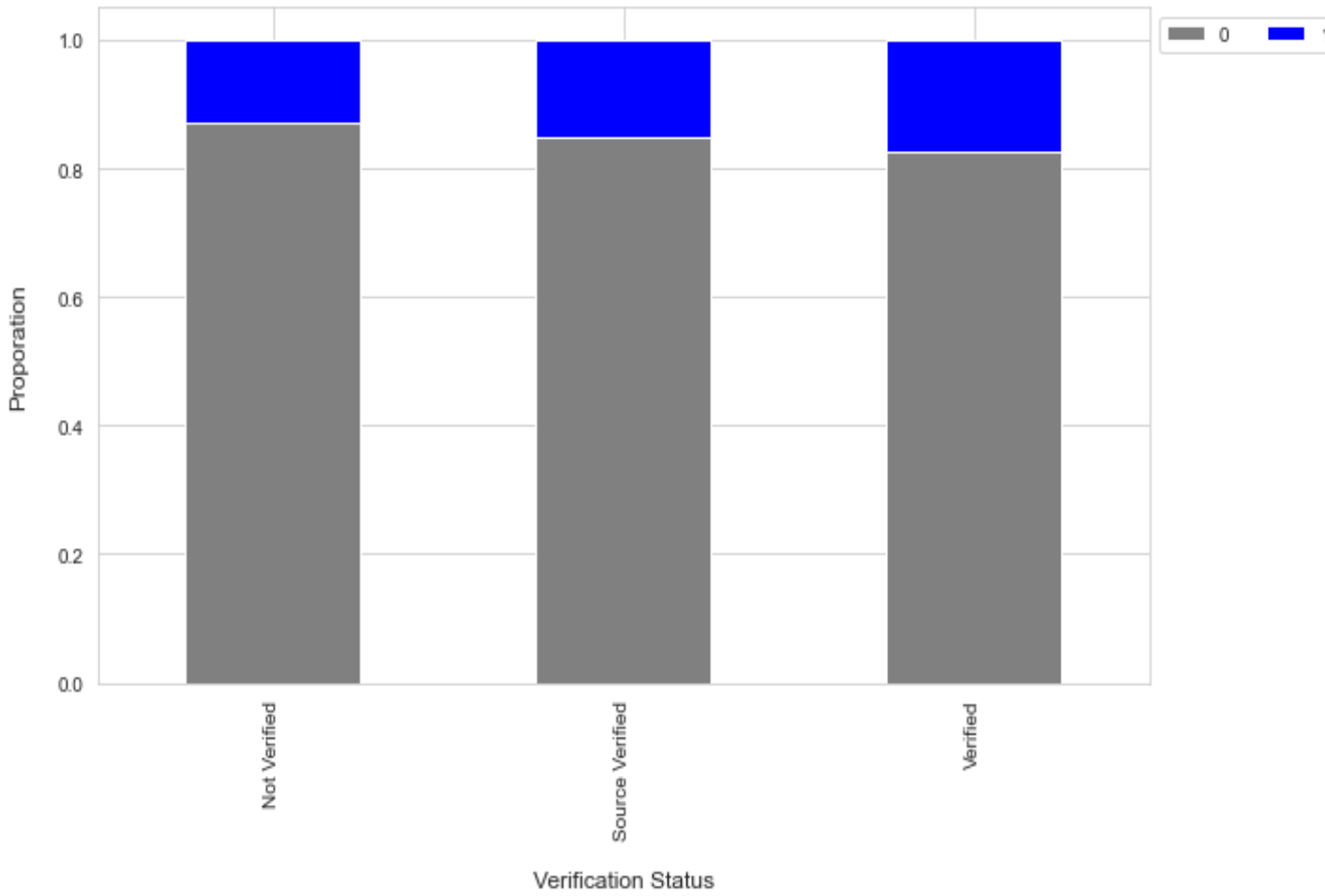


Customers with more than 10 years of employment have higher probability of defaulting in their loan, with a slight variation from other segments



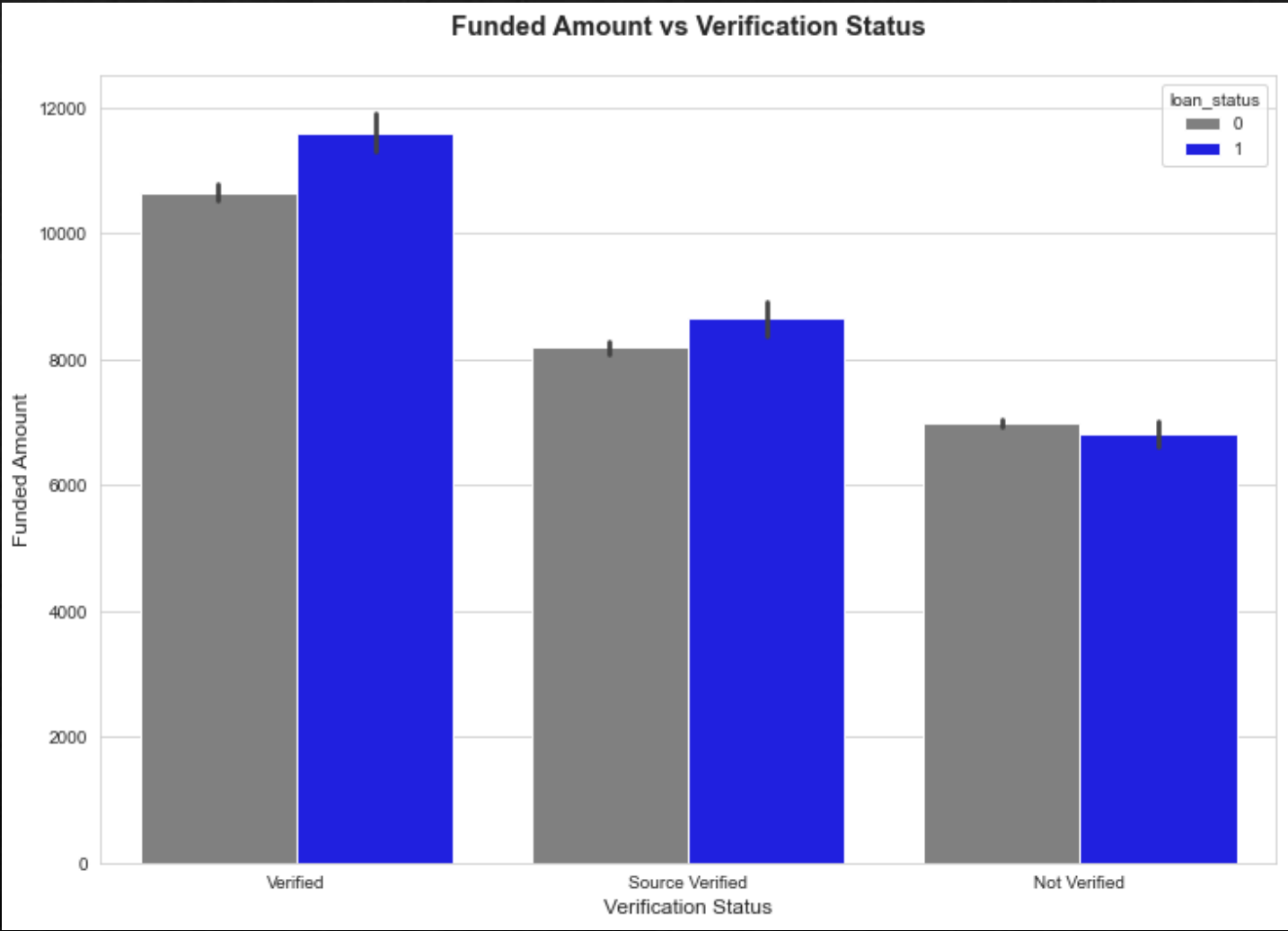
Loan Application & Term:
60 Months Term increases the chances
of a
customer to default.

Verification Status across Loan Status

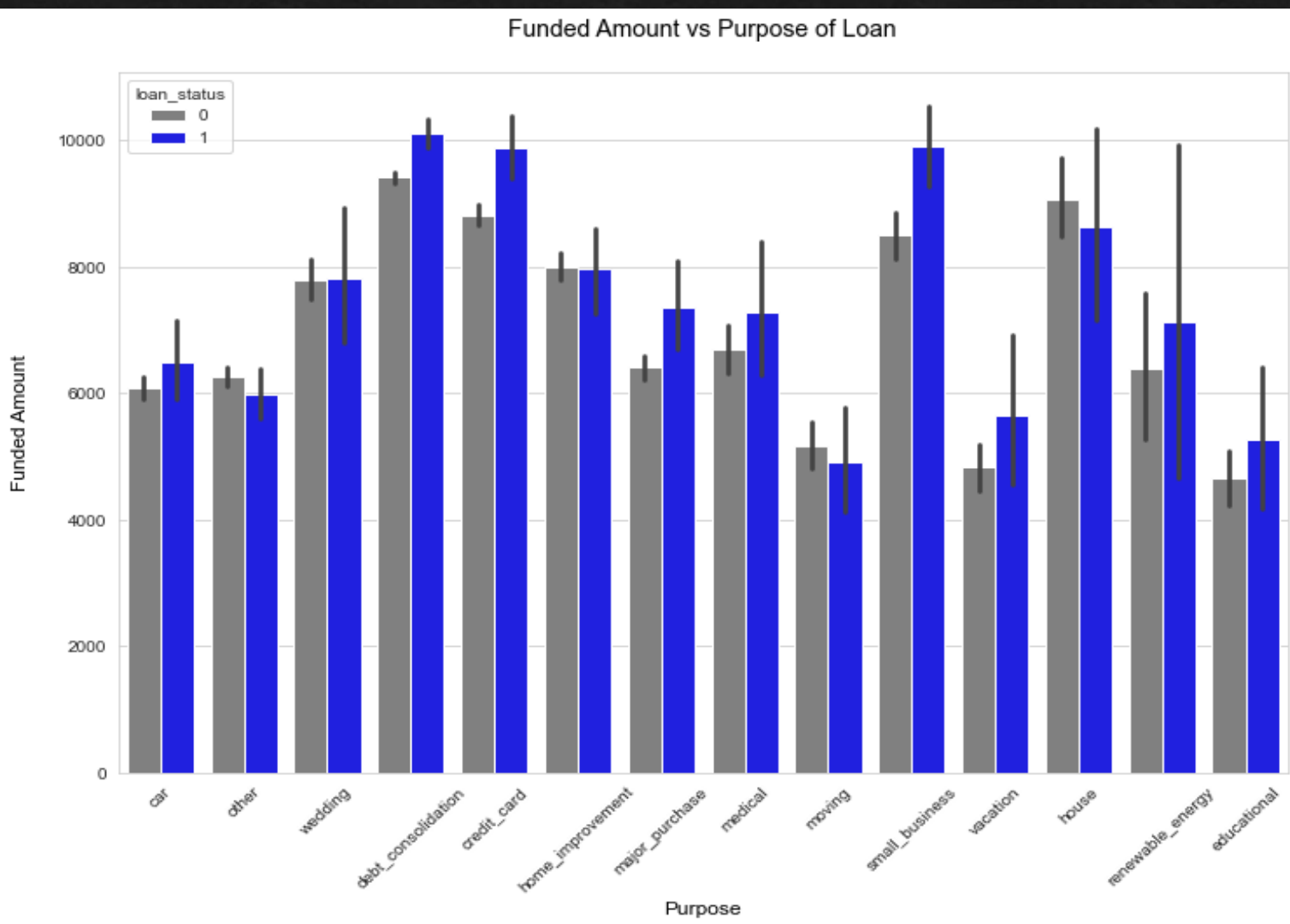


Loan Application & Term:

Verified applicants are getting an advantage of being funded more (As in the next slide), even though they have a high probability of default. So, Lending Club has to be sure of their verification documents.



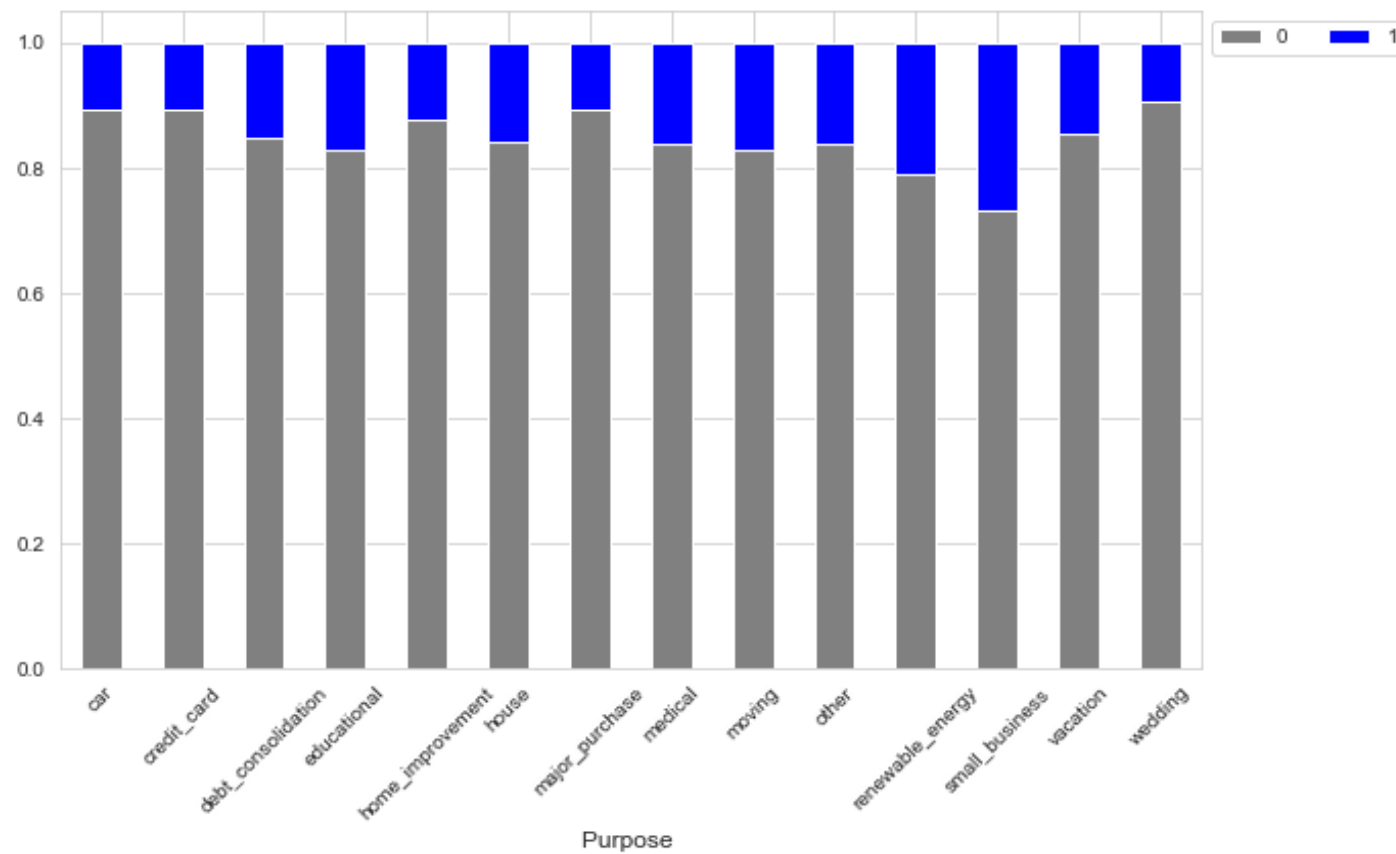
Funded Amount
&
Verification Status



Purpose:

Small Businesses then Debt Consolidation purposes funded more than any other purpose, and despite that they have the highest probability of a customer to default (As in the next slide)

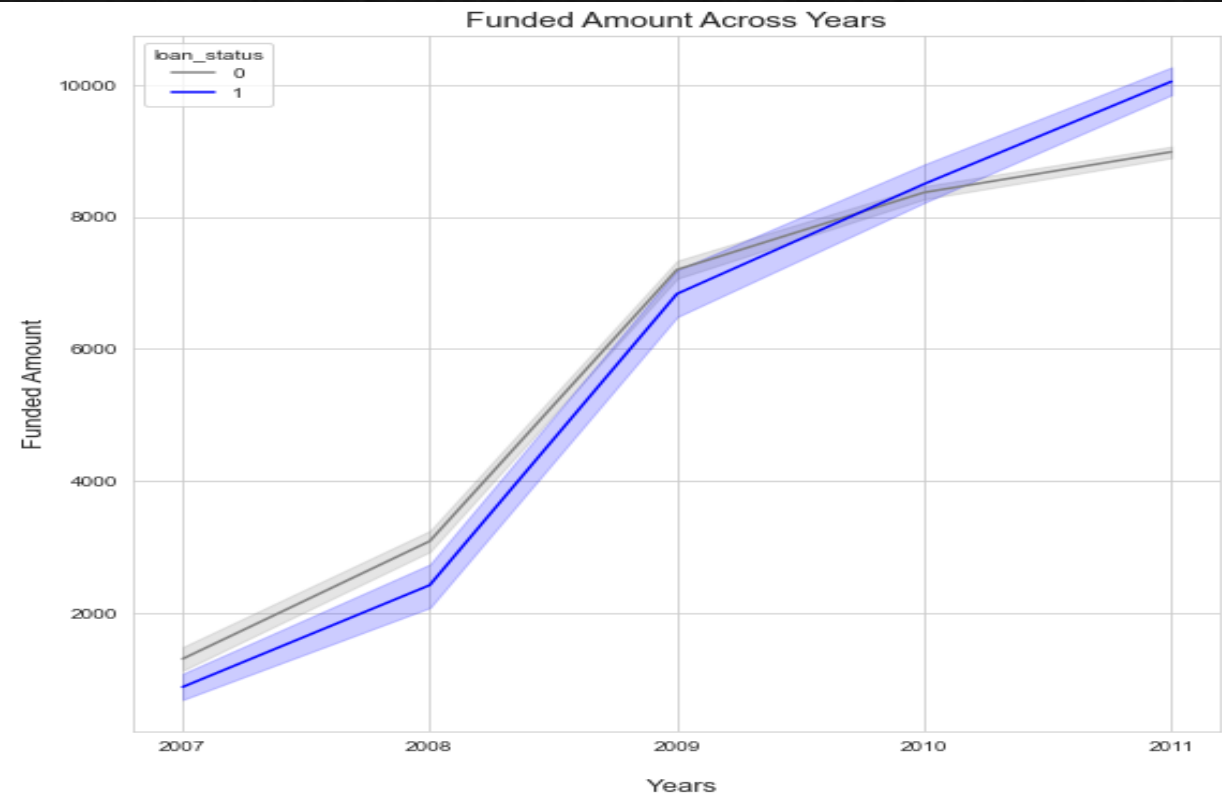
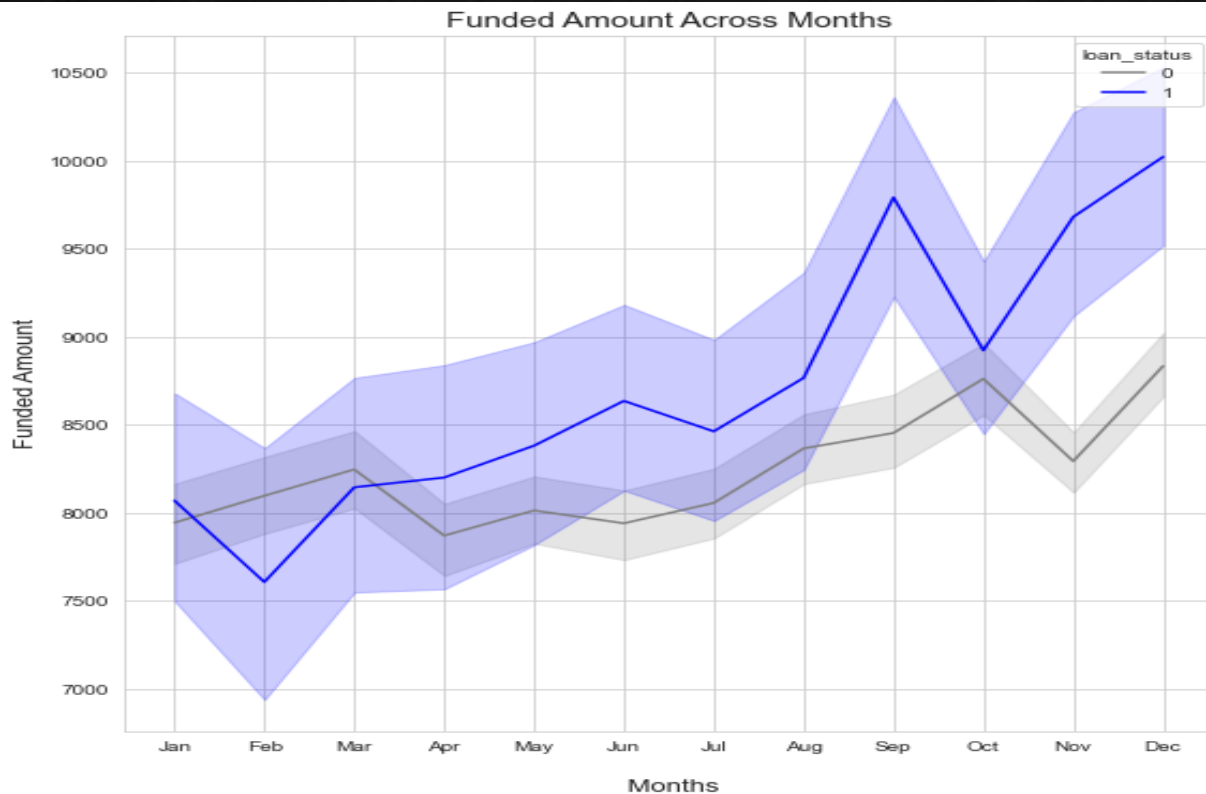
Purpose across Loan Status



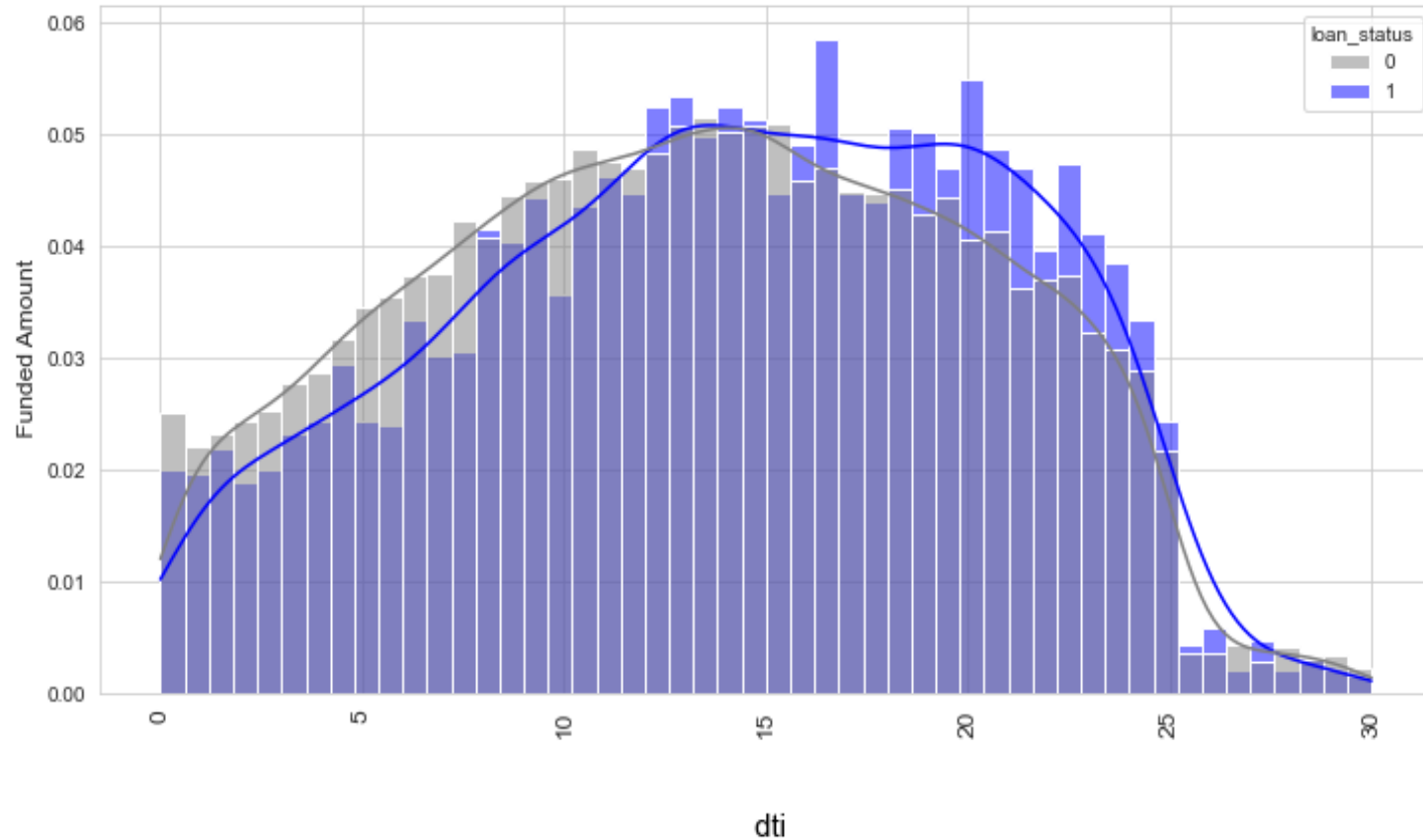
Purpose
Across
Loan Status

Funded Amount:

With time, funded amount reached its maximum in 2011. And December and September have the highest funded amount of all months during these years.

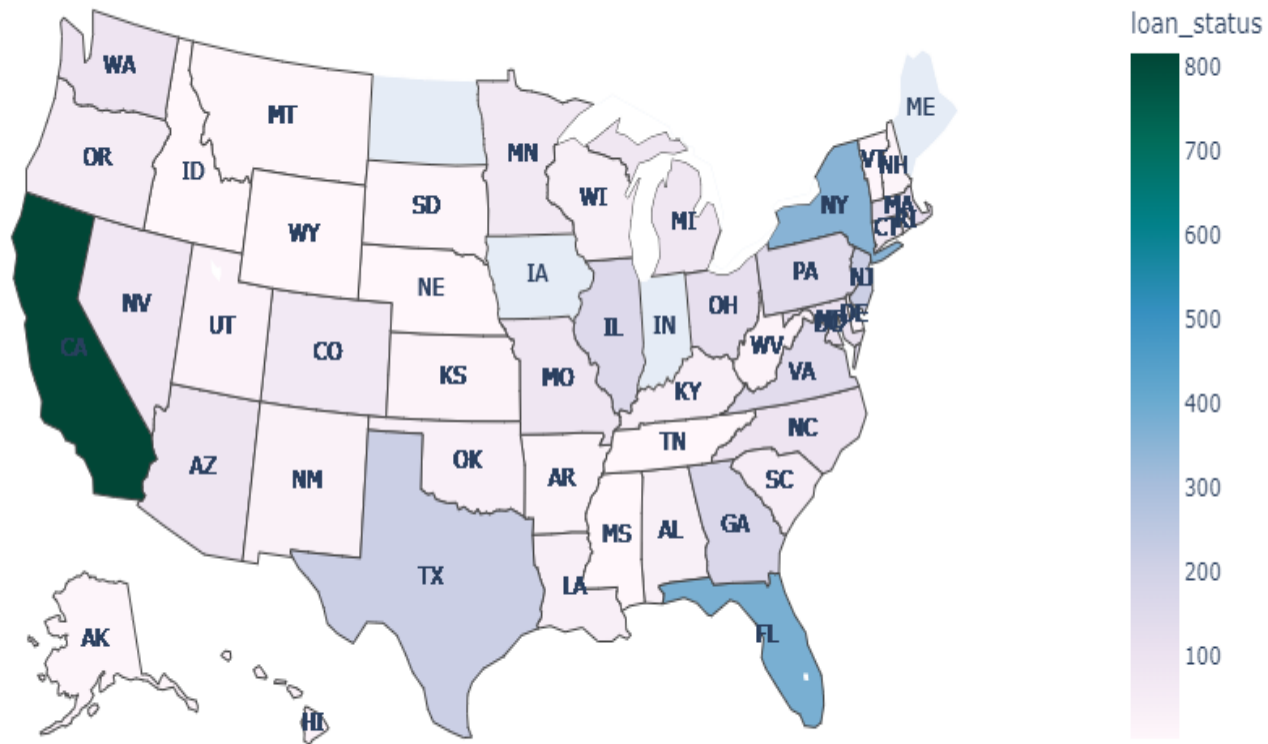


Funded Amount across DTI and Loan Status



Debt to income:
Customers with debt to income from approx. 17 until 25 have higher probability to default.

Default Counts by State



State:

Customers from California has the highest number of defaulters



Recommendations



- It is recommended for Lending Club to be cautious about loans where the purpose is “Small Business” and “Debt Consolidation”. And accept those loans for the other than these purposes.
- The Higher the loan amount, the higher the chances of a customer to default. Therefore Lending Company should consider accepting loans of lower amount. Amounts to be funded from 5K to 10K is the safest zone for Lending Club to grant customers as the probability of the loan being charged off is minimal.
- For applicants whose Annual Income is 70K, their probability of their loan to be charged off is minimal.
- Interest Rate above 12.5% would highly drive a customer to default. So, it is recommended to keep the interest rate below that.
- Of course Grade “A” & “B” are the least grades that default on their loans. Grade “G” “F” should be cautious of or as much as possible be avoided.
- Lending Club should be careful at the end of every year, that is because the number of applied loans are increasing massively. So, it is better to really know the customers that is granted the loan.
- 36 months Term is safer than 60 Months for Lending Club, plus it has lower interest rate. So, the chances of default in 36 Months is less than 60 Months.
- Applicants from California are most inclined to default on their loans, then NewYork.



Thank You