Gramener Bank Case Study

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Data Cleaning & Manipulation

➢ Checked & found no duplicate records for customer id.
➢ Removed the columns which were not impacting the analysis.
➢ We have rounded of the few fields.

Business Objective : To identify the probable defaulters.

Univariate Analysis :
We performed Univariate analysis to understand the segment where the bank has sanctioned highest amount of loans & with high number of customers.

Derived Metrics : After performing the univariate analysis, we have considered Current & Charged off loan status for the purpose debt-consilidation as it being highest amount lended by the bank. As the risk being high where the amount being invested is high, we have further analyzed in this segment of data to identify the probable defaulters.
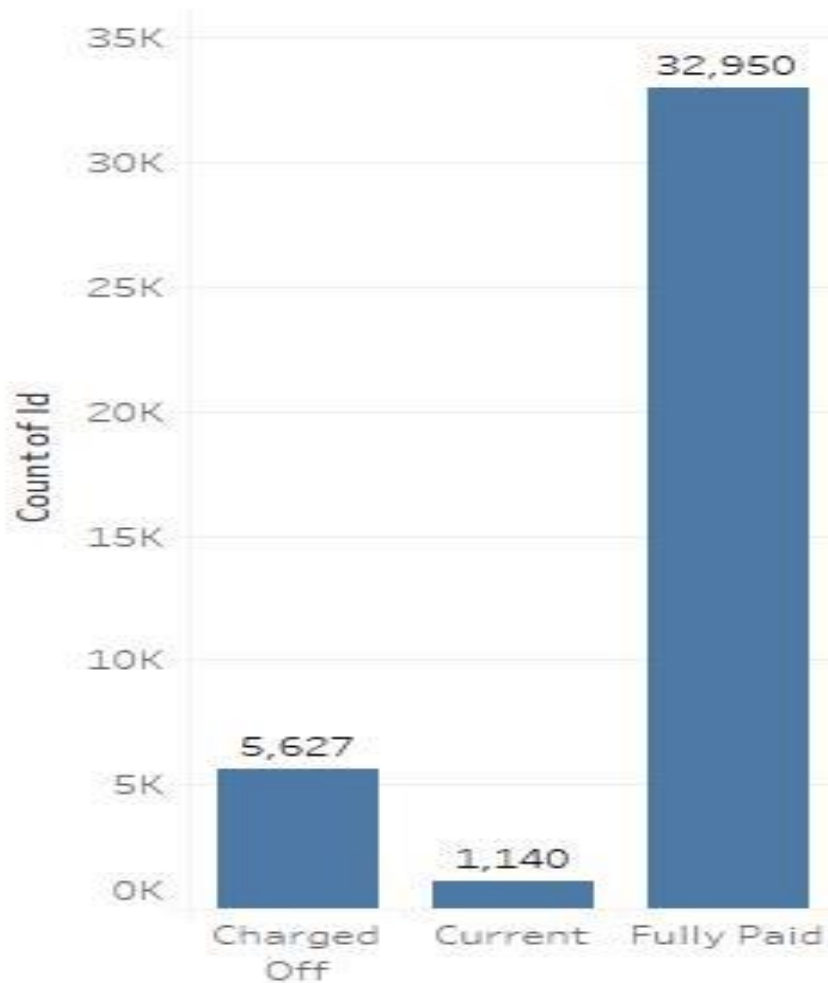
Calculated Pending Loan amount = Loan Amount – Total Received Principal Amount for the selected segment of customers:
1. 10000 <Loan Amount<36000 &)
2. 12%< Rate of Interest <17%
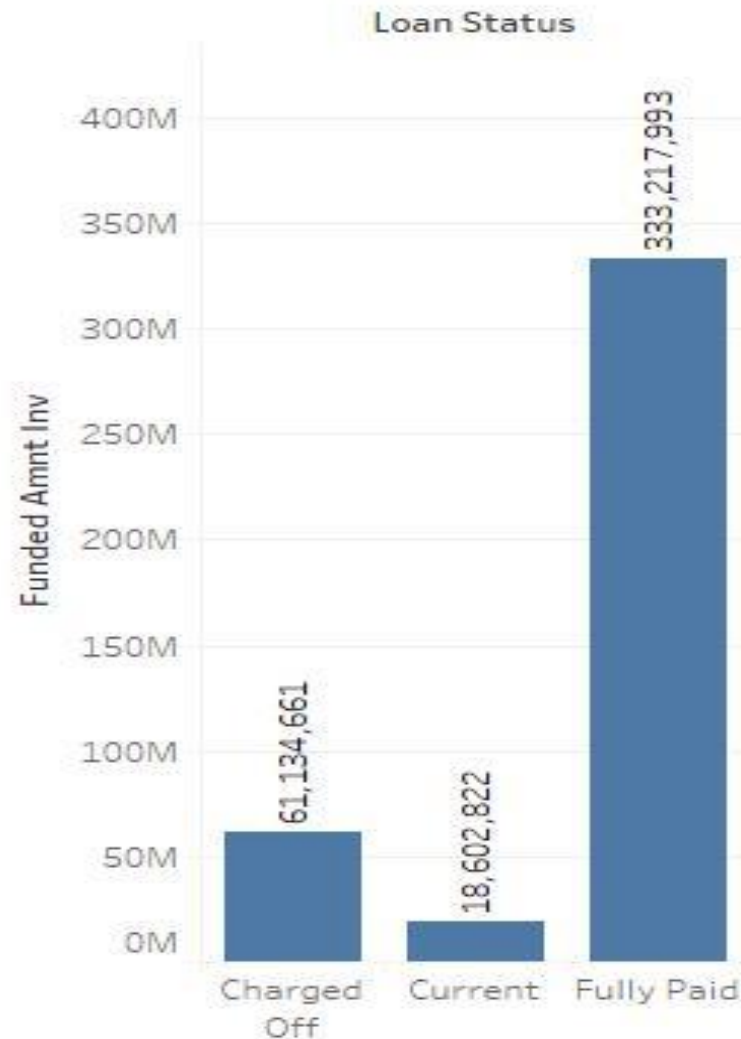3. Rate of Interest >20%

Methodology Opted For Analysis
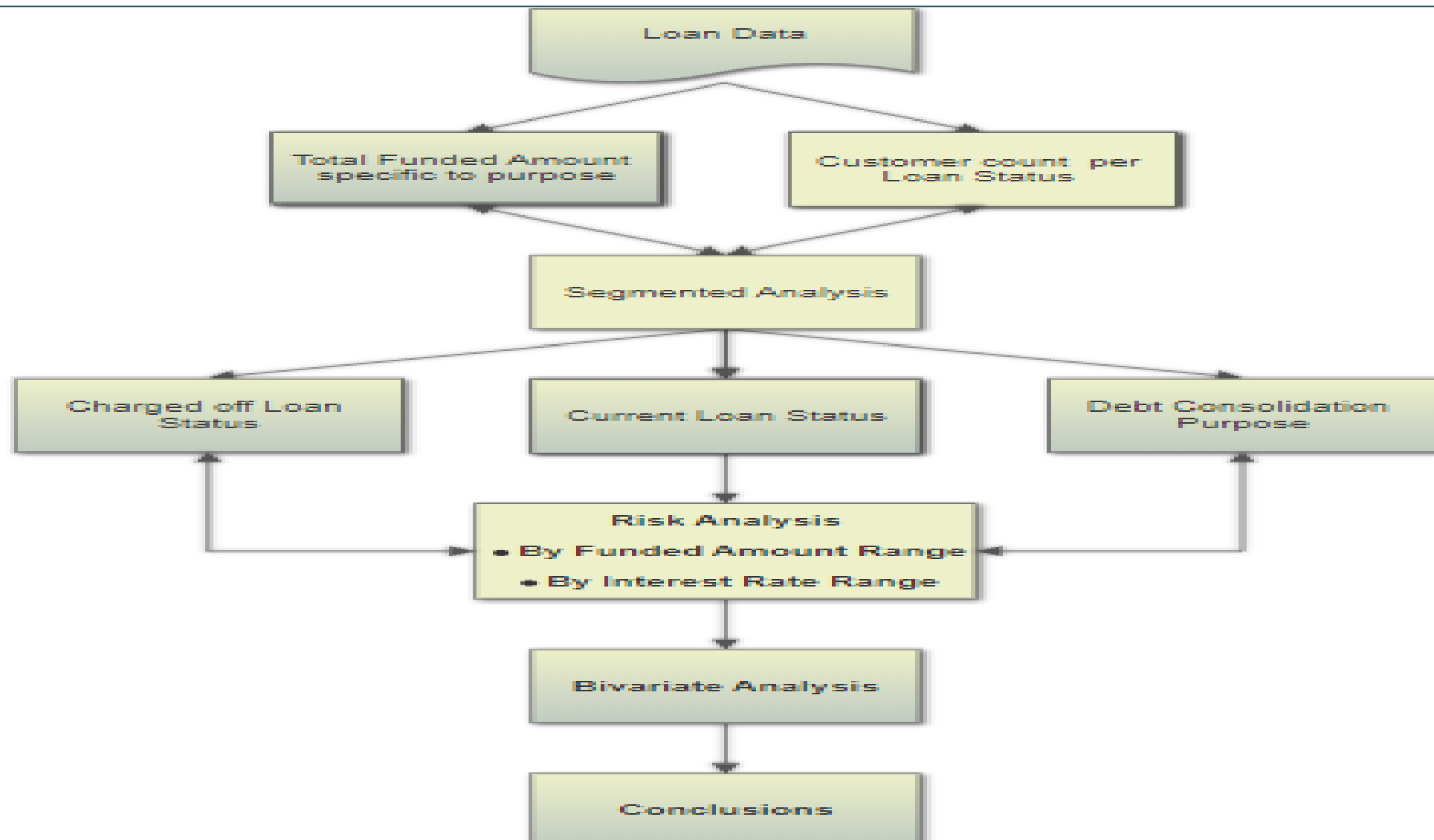
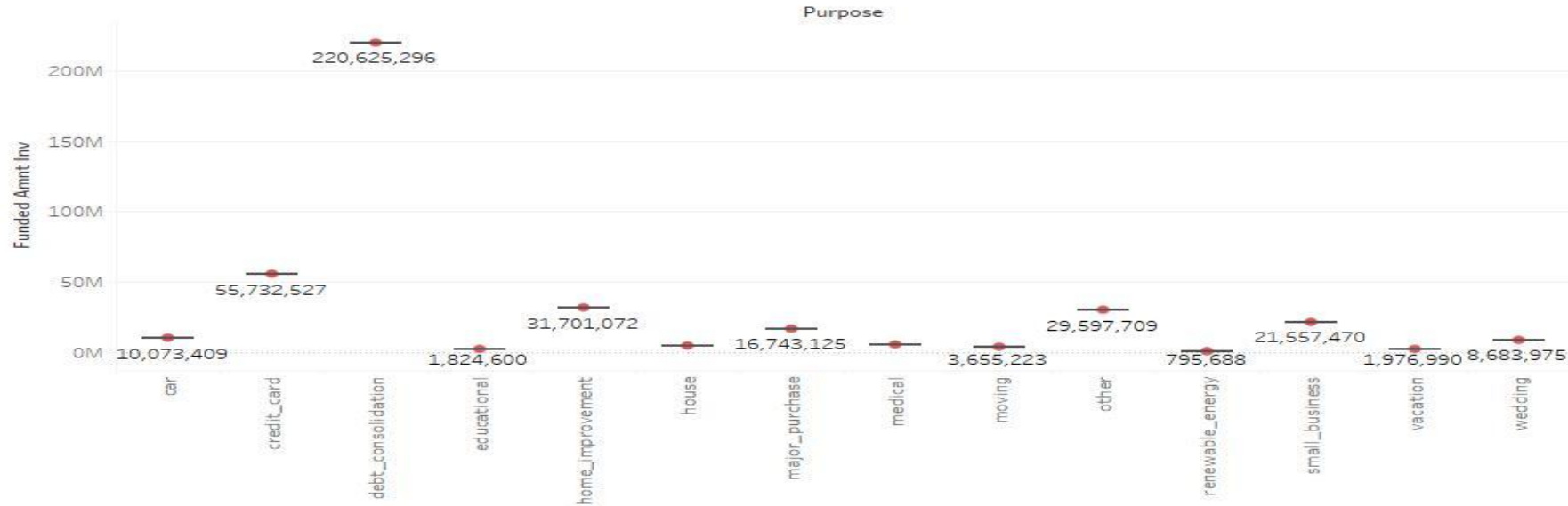# Loan Status of Customers

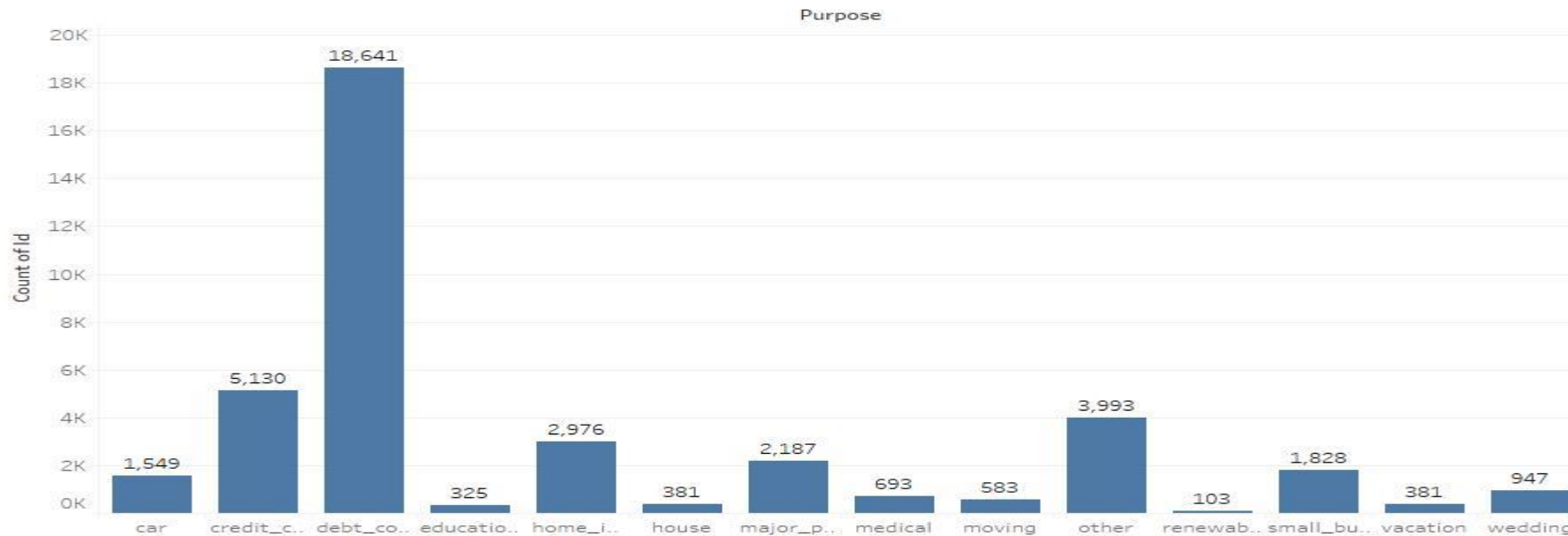Count Per Each Loan Status.

Funded Amount per Loan Status

To identify the total number of customers and the Loan amount under the each loan status of the bank :-

➢In the given set of customers, we have more number of customers who have fully paid the Loan amount.

➢ Also we can see the amount funded under each loan status.
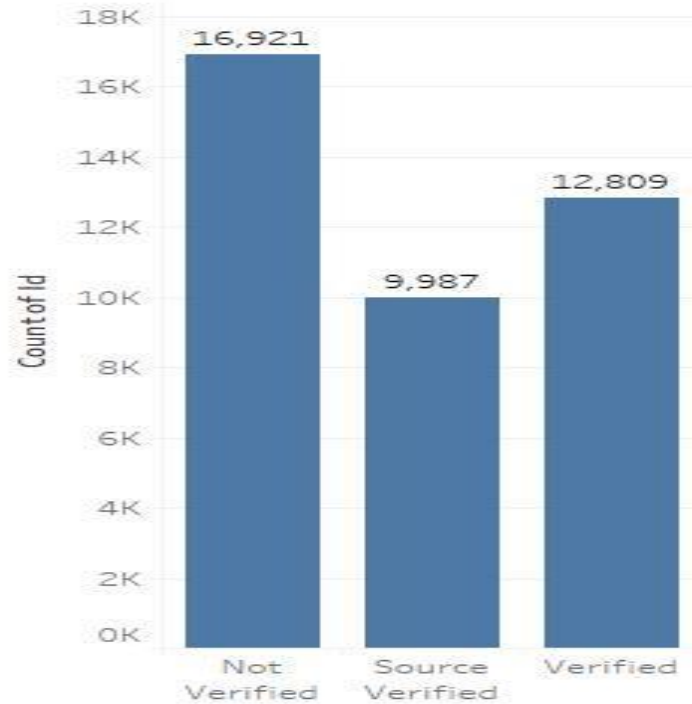
Loan Status as per Total Funded Amount Inv

Purpose

Funded Amnt Inv

220,625,296
55,732,527
31,701,072
29,597,709
21,557,470
16,743,125
10,073,409
8,683,975
3,655,223
1,976,990
1,824,600
795,688

car · credit_card · debt_consolidation · educational · home_improvement · house · major_purchase · medical · moving · other · renewable_energy · small_business · vacation · wedding

Purpose By Number of Customers

Purpose

Count of Id

18,641
5,130
3,993
2,976
2,187
1,828
1,549
947
693
583
381
381
325
103

car · credit_c.. · debt_co.. · educatio.. · home_i.. · house · major_p.. · medical · moving · other · renewab.. · small_bu.. · vacation · wedding
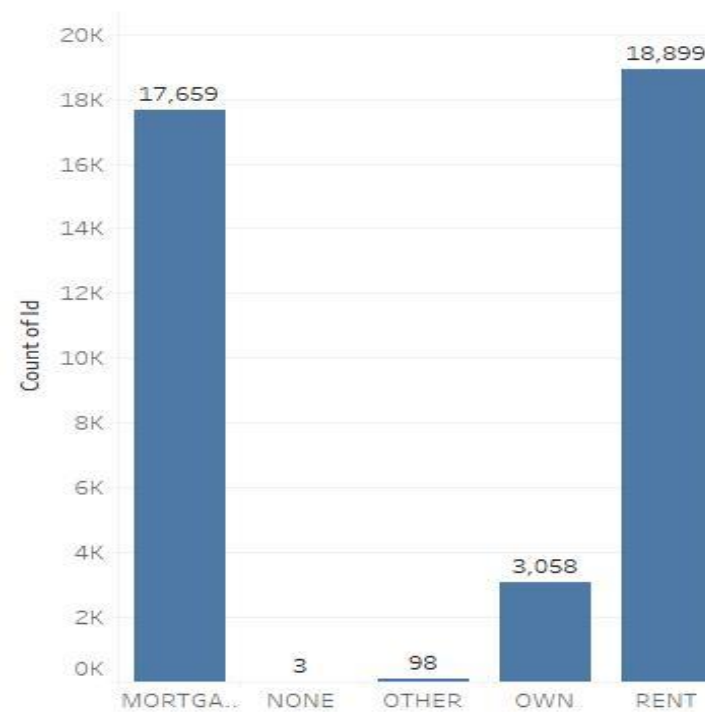
➢Here, we identified that the Number of customers and the Loan amount both are high for the purpose with "Debt-Consolidation".
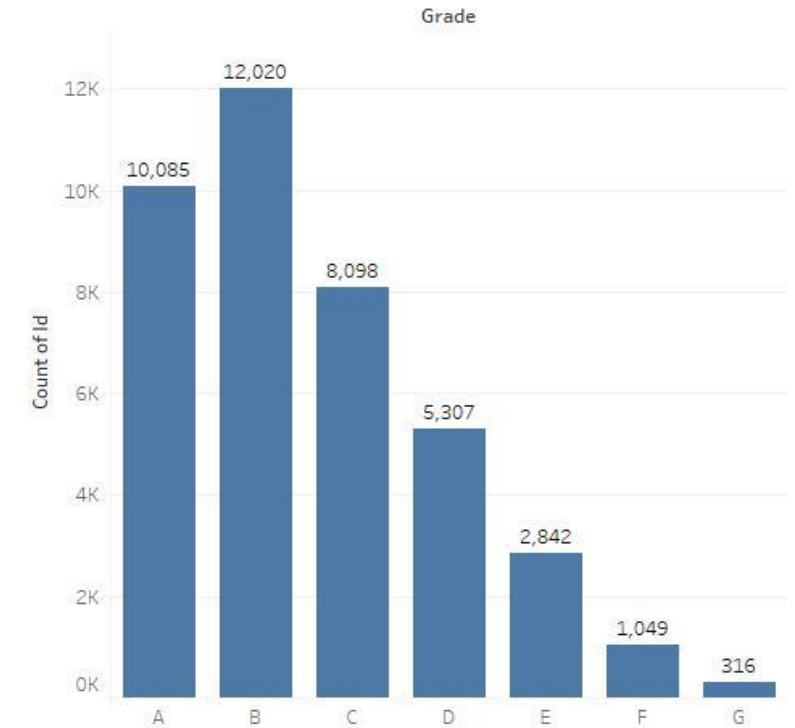
Count By Verification Status — Count of Id for each Verification Status.

Home Ownership Status of Customers — Count of Id for each Home Ownership.

Customers By Grades — Count of Id for each Grade.

➢ Major number of customers are not been verified.
➢ Customers with Rent and Mortgaged home status are high respectively.
➢ Customers graded as b are High in count.

SEGMENTED ANALYSIS

With the Univariate analysis and the basic assumption that the business risk is more with the current and Charged-off customers and in the segment where amount funded is high by total amount funded and also number of customers.

Total Loan Amount Funded Per Purpose For Current & Charge-off
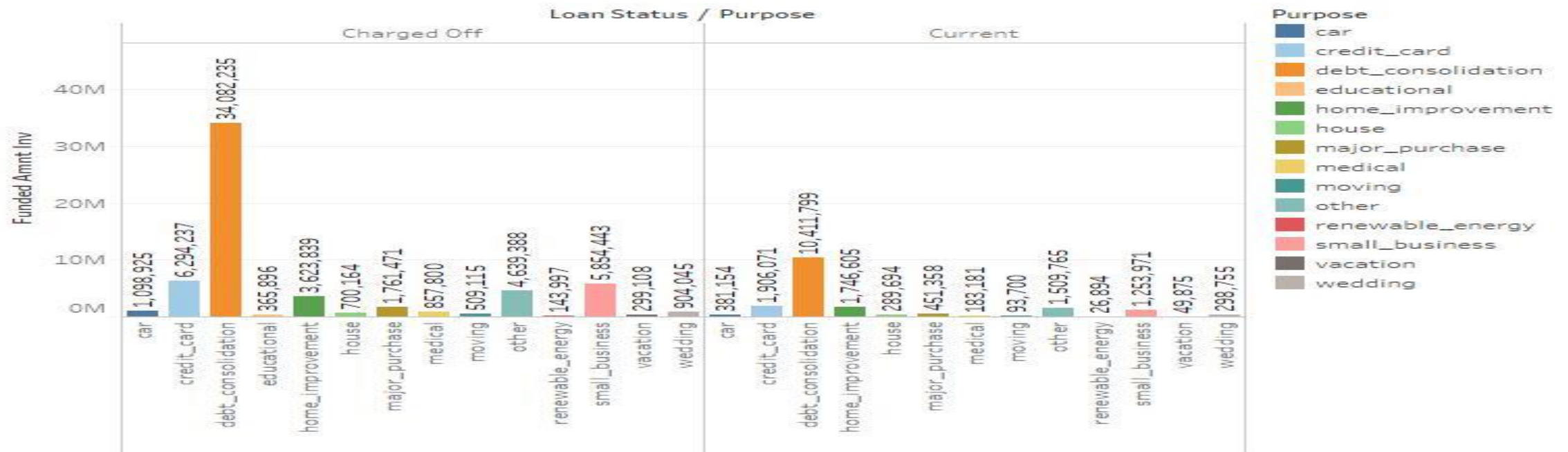
Sum of Funded Amnt Inv for each Purpose broken down by Loan Status. Color shows details about Purpose. The marks are labeled by sum of Funded Amnt Inv. The view is filtered on Loan Status, which keeps Charged Off and Current.
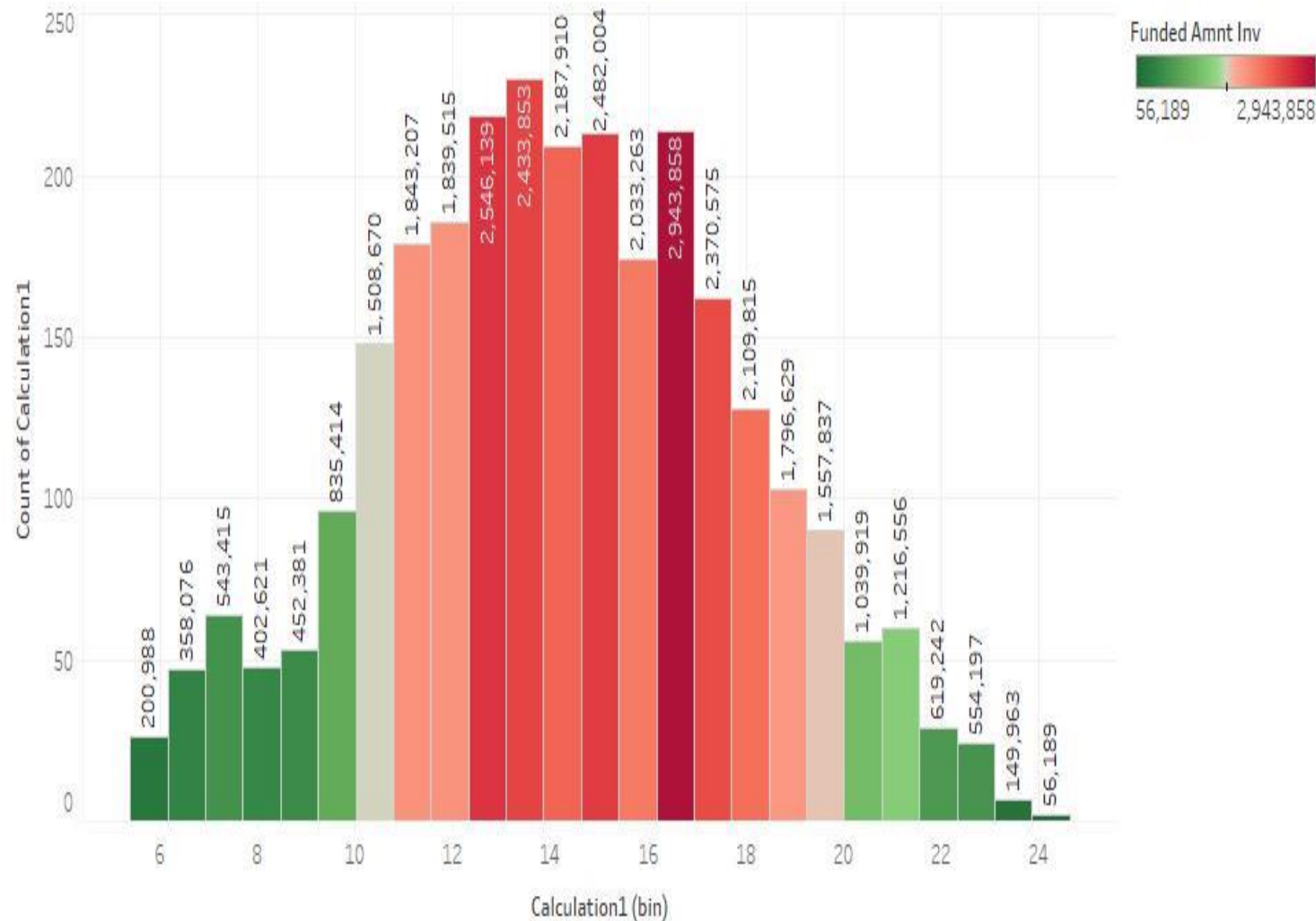
Loan Amount Funded For Debt-Consolidation Under Charge-Off & Current Loan Status
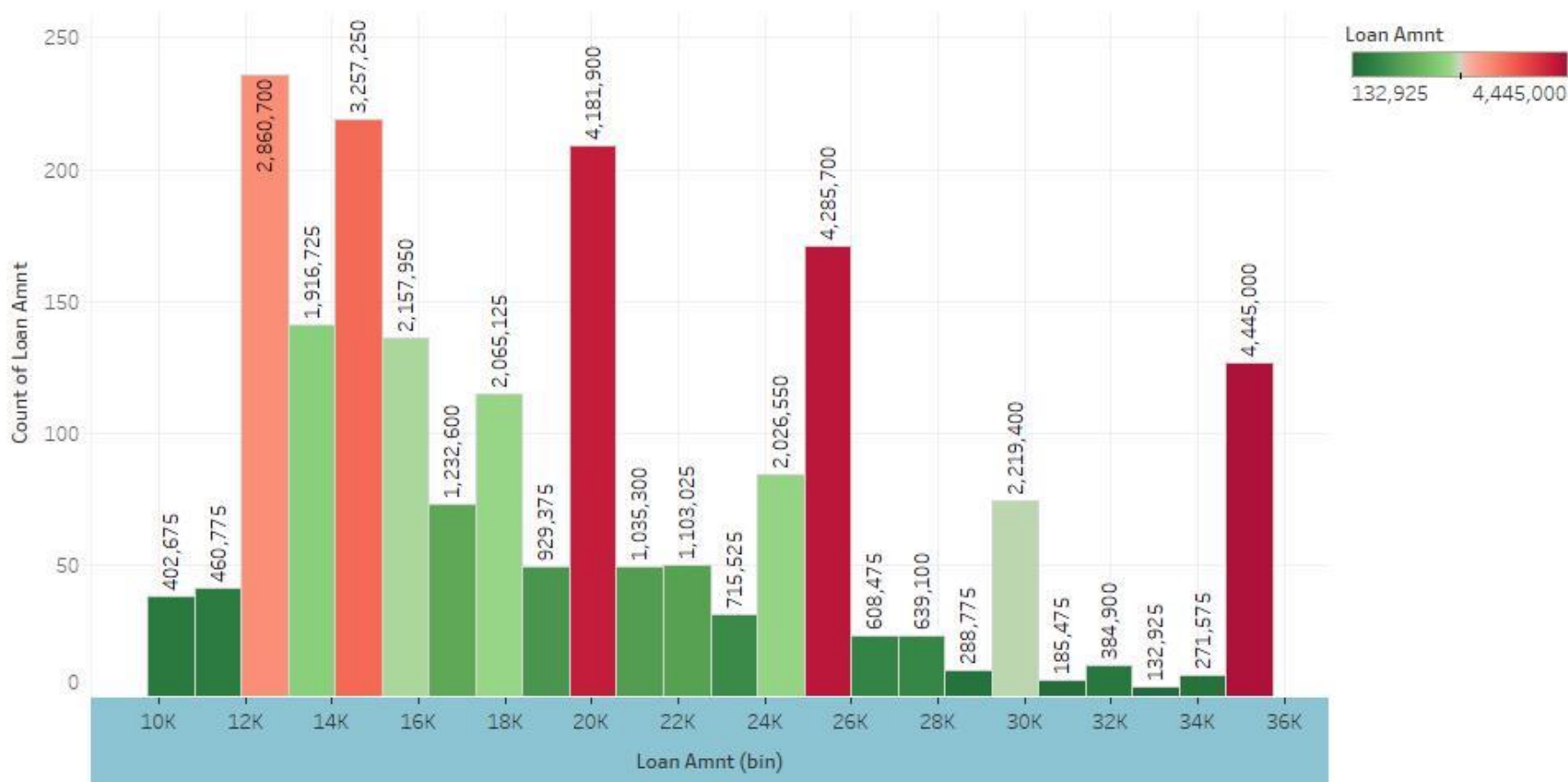
➢With this segmented plot, we could identify the Loan amounts High risk loan amount range being between 20K – 36k.

Interest rates Vs Total Loan amount funded issued for debit consolidation purpose

As per the interest rate charged and the amount funded we identified 2 categories :

➢ High Amount + Lower interest Rate.(12% - 17%)

➢ 2. Loan lended with 20% above interest rate.

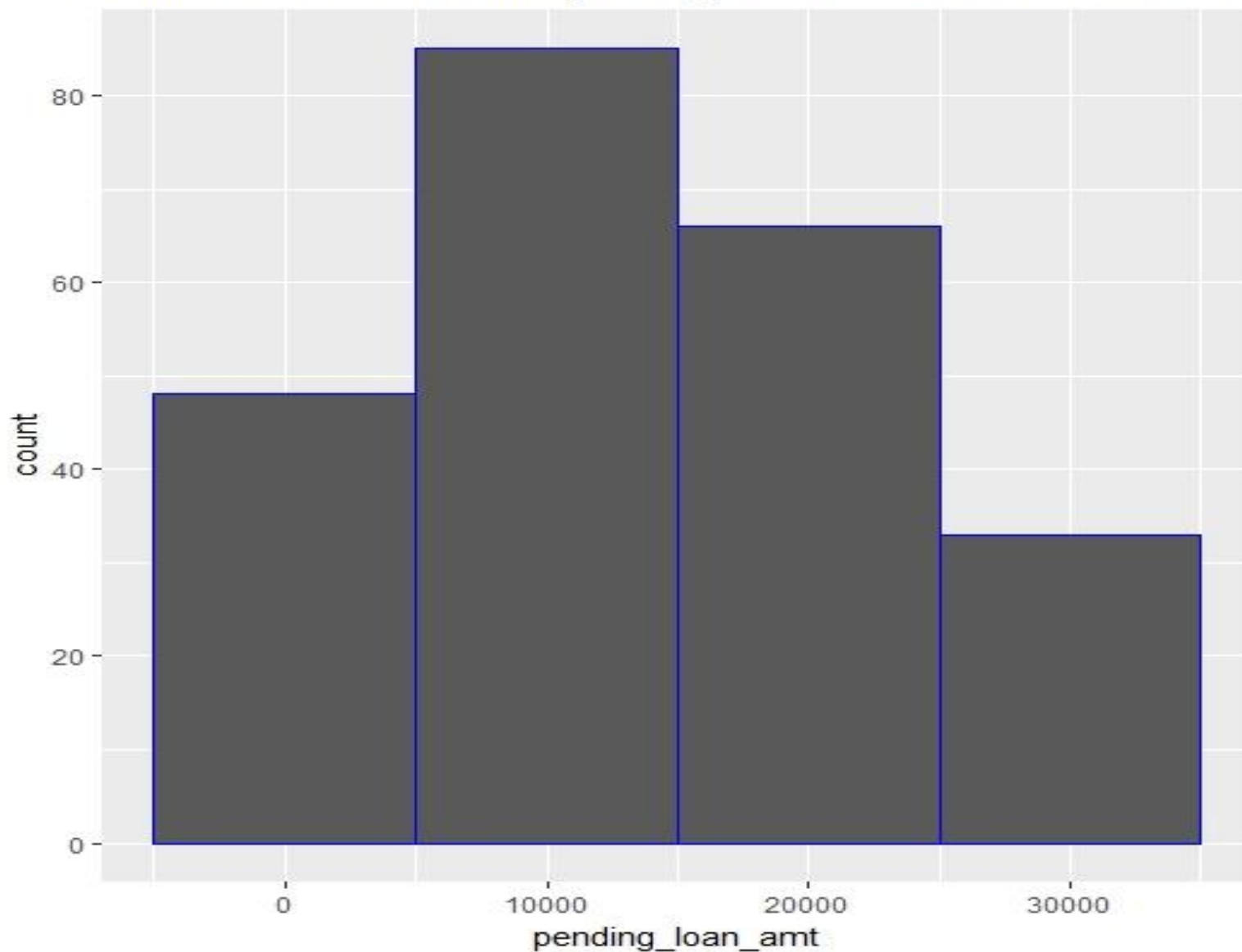count of customers with pending due based on loan amount
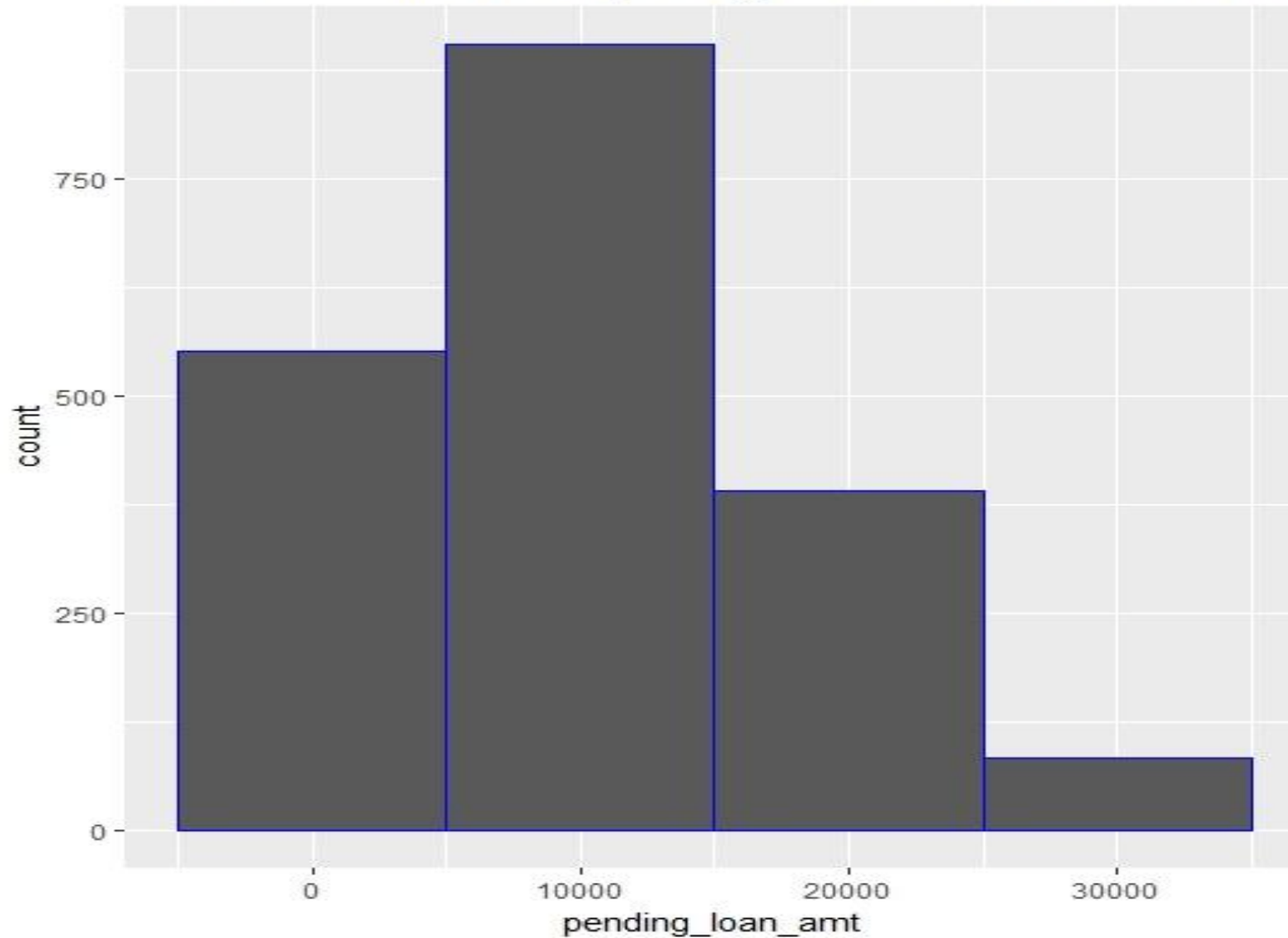
> The Number of customers who has considerable pending principal amount against the loan are high in the category of 10k.

count of customers with pending due based on high interest
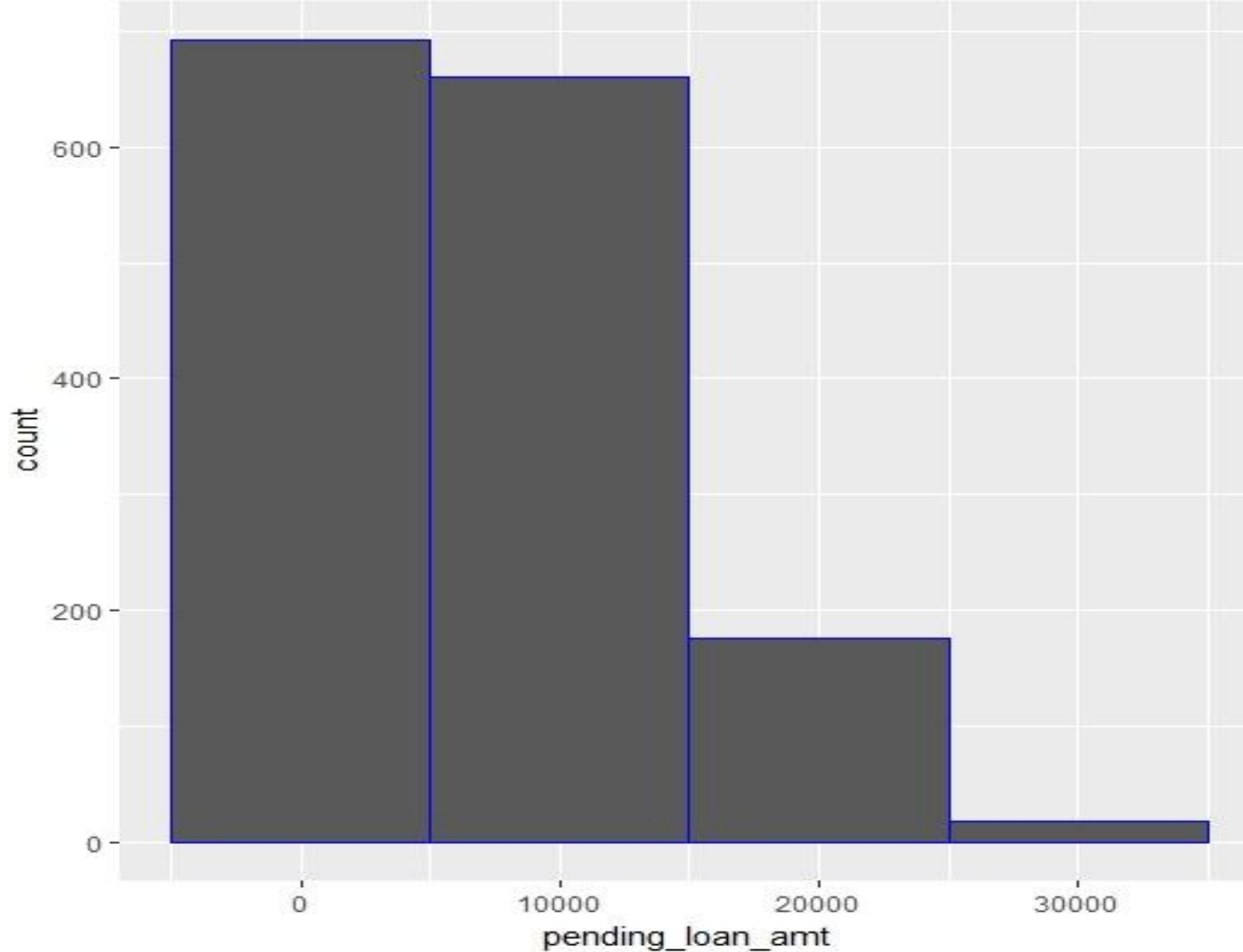
➤The Number of customers who has considerable pending principal amount with the high interest rate are high almost high for amount lended below 20K.

count of customers with pending due based on low interest ra

> ➤The Number of customers who has considerable pending principal amount with the low interest rate are falling within the category of 10k – 20K.

Conclusions

1. As per the above analysis carried (Slide# 11-13), we can conclude that there is risk of customers being defaulting in common for the loan amount issued for the purpose of "Debt-Consolidation".

2. The common amount range in which customers can default are in between 10K – 20K.

3. As we observed in slide#6, the non-verified customers are relatively high on which bank can be more attentive.