

Lending Club

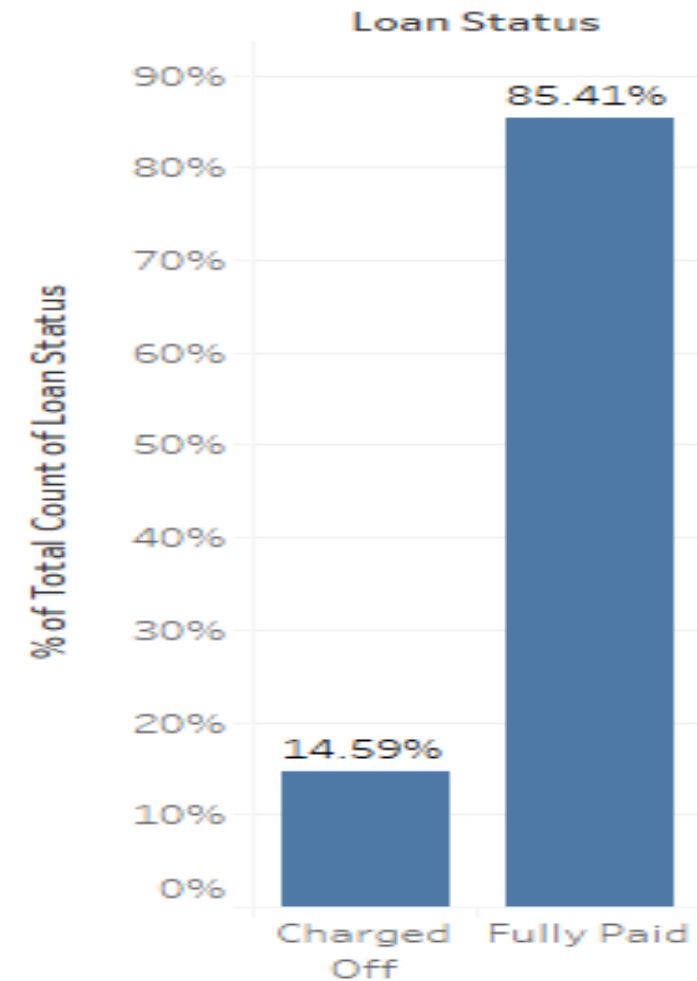
Problem Statement:

- The company wants to understand the driving factors (or driver variables) behind loan default, i.e. the variables which are strong indicators of default. The company can utilise this knowledge for its portfolio and risk assessment.
- If one is able to identify these risky loan applicants, then such loans can be reduced thereby cutting down the amount of credit loss. Identification of such applicants using EDA is the aim of this case study.

Loan Default Percentage:

Almost 15% percentage of loans have been charged off.

Loan Default Percentage



% of Total Count of Loan Status for each Loan Status.

Correlation of Numerical Variables.

F1	Annual Inc	Dti	Funded Amnt	Funded Amnt Inv	Install..	Interest	Loan Amnt
annual_inc	1.000	-0.122	0.265	0.252	0.268	0.049	0.269
dti	-0.122	1.000	0.062	0.071	0.052	0.111	0.062
funded_amnt	0.265	0.062	1.000	0.956	0.958	0.305	0.982
funded_amnt_inv	0.252	0.071	0.956	1.000	0.905	0.297	0.938
installment	0.268	0.052	0.958	0.905	1.000	0.277	0.932
interest	0.049	0.111	0.305	0.297	0.277	1.000	0.301
loan_amnt	0.269	0.062	0.982	0.938	0.932	0.301	1.000

Annual Inc, Dti, Funded Amnt, Funded Amnt Inv, Installment, Interest and Loan Amnt broken down by F1. The view is filtered on F1, which excludes Charged Off.

Conclusion:

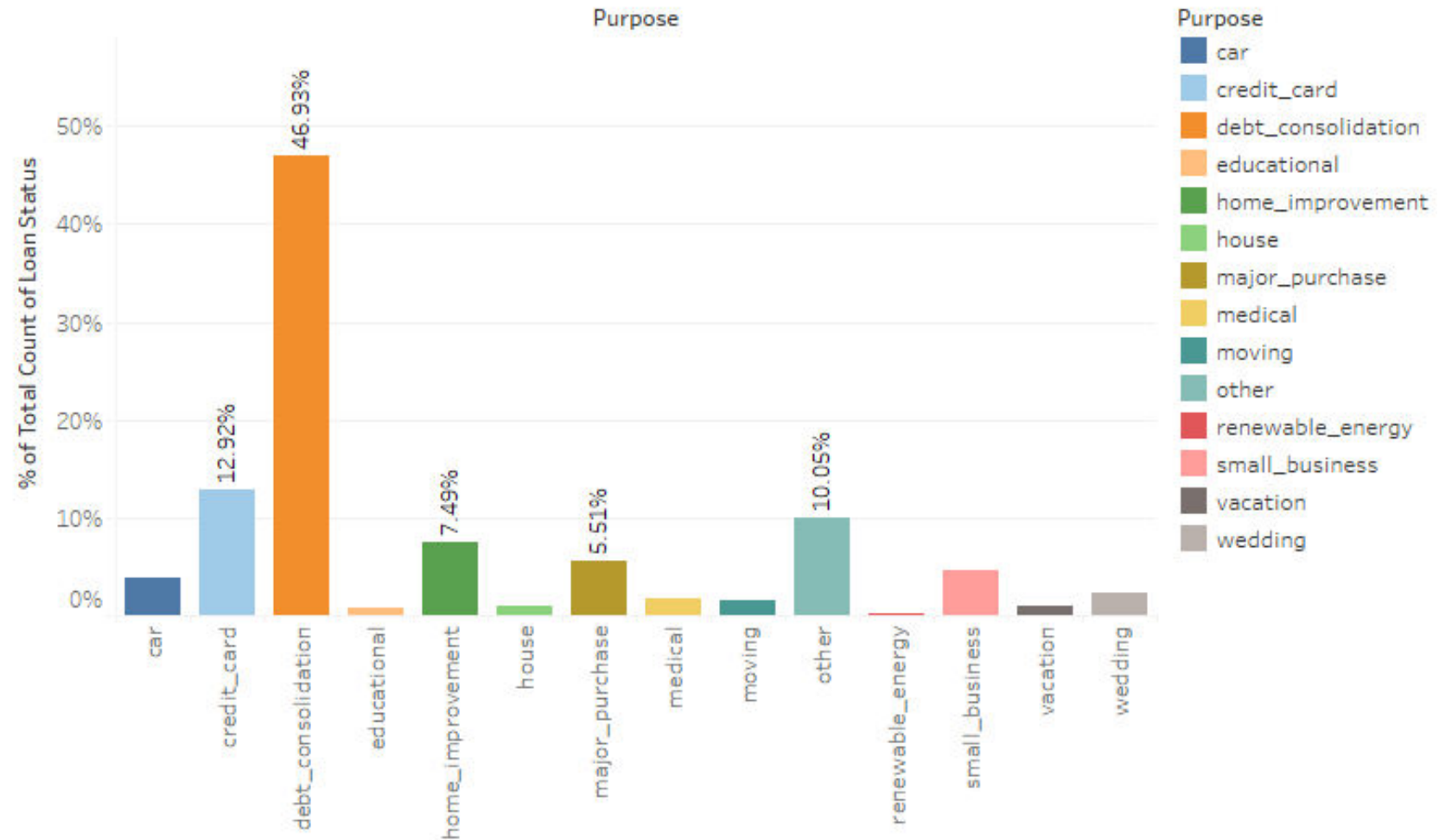
Loan amount is highly correlated with funded amount, funded amount investors and installment at higher rate than 90%.

Loan amount has 27% correlation with Annual Income and 30% correlation with the interest. Which means to some extent annual income is considered for deciding on loan amount which in turn is considered to decide the interest rate.

Loan Type Analysis:

- Popular loan type amongst all applicants is Debt consolidation occupying nearly 50%.
- Percentages shown in the chart are of some other popular loan types.
- Further we will find out the default rate for each of these loan to find the 4 most important variable which can be considered a risk factor

Popular Loan Types

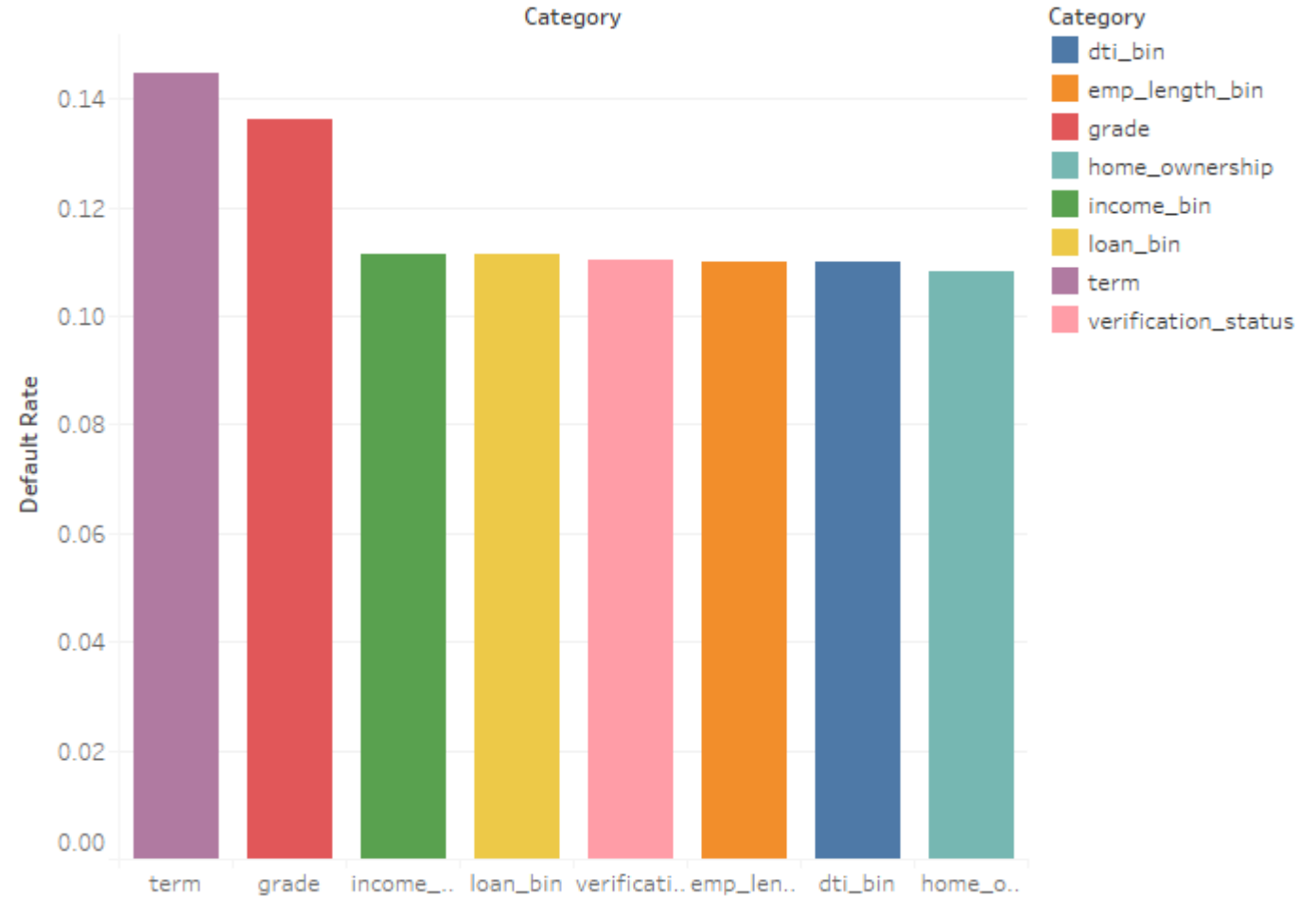


% of Total Count of Loan Status for each Purpose. Color shows details about Purpose.

Credit Card – Significant Risk Variables

1. Term
2. Grade
3. Annual Income Bin
4. Loan Amount Bin

Loan Default Rate : Credit Card

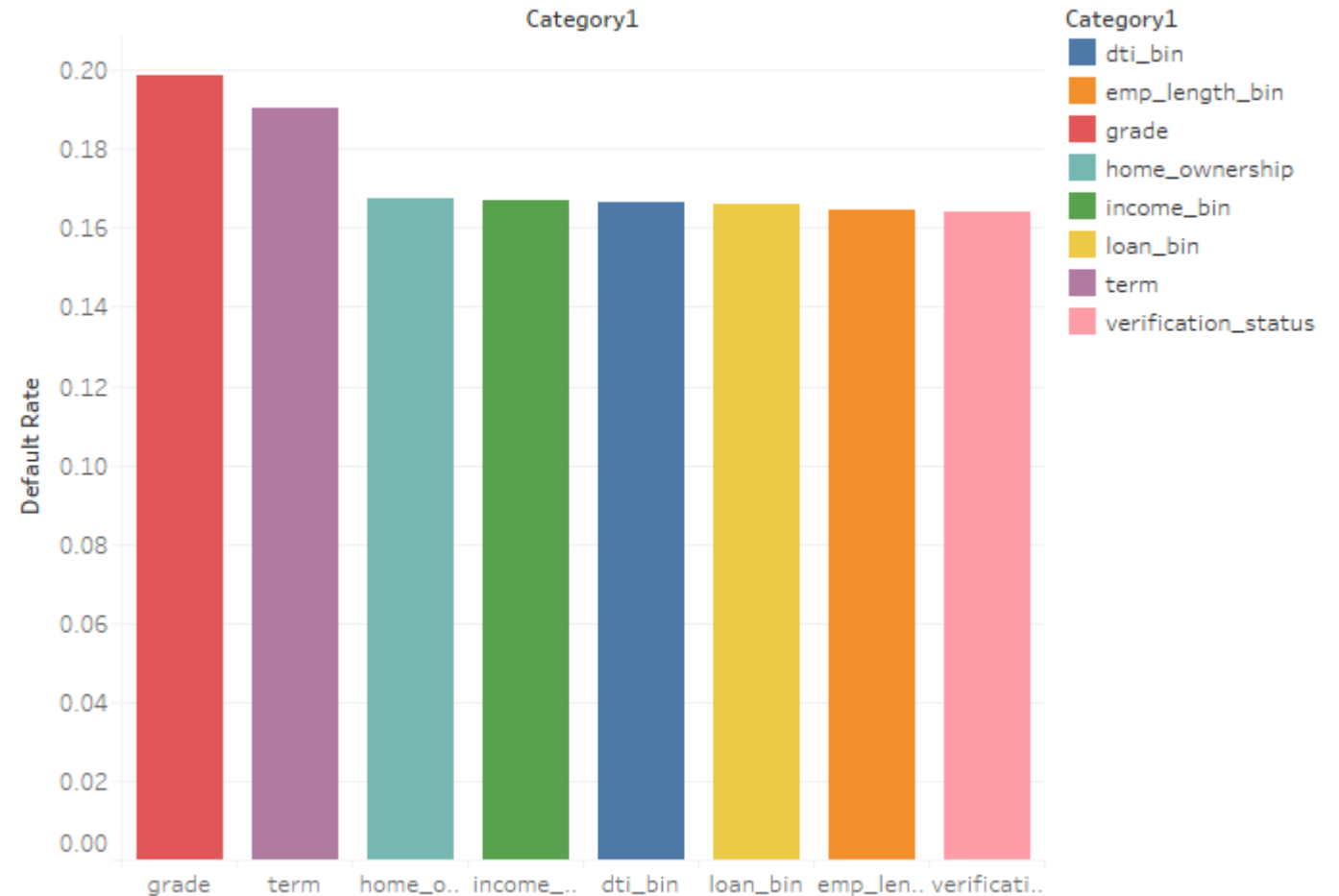


Sum of Default Rate for each Category. Color shows details about Category.

Other – Significant Risk Variables

1. Grade
2. Term
3. Home Ownership
4. Annual Income Bin

Loan Default Rate : Other

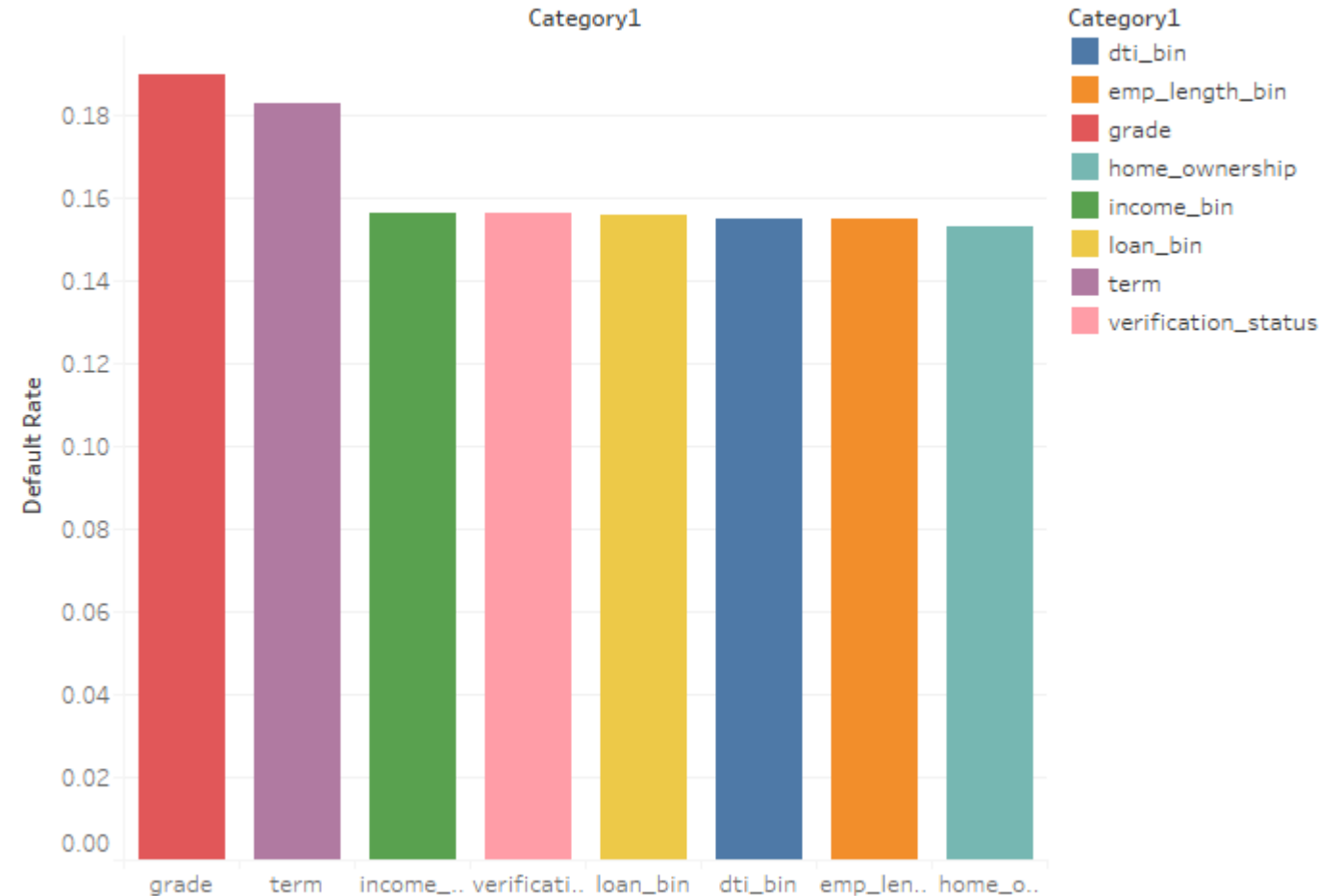


Sum of Default Rate for each Category1. Color shows details about Category1.

Debt Consolidation – Significant Risk Variables

1. Grade
2. Term
3. Annual Income Bin
4. Verification Status

Loan Default Rate : Debt Consolidation

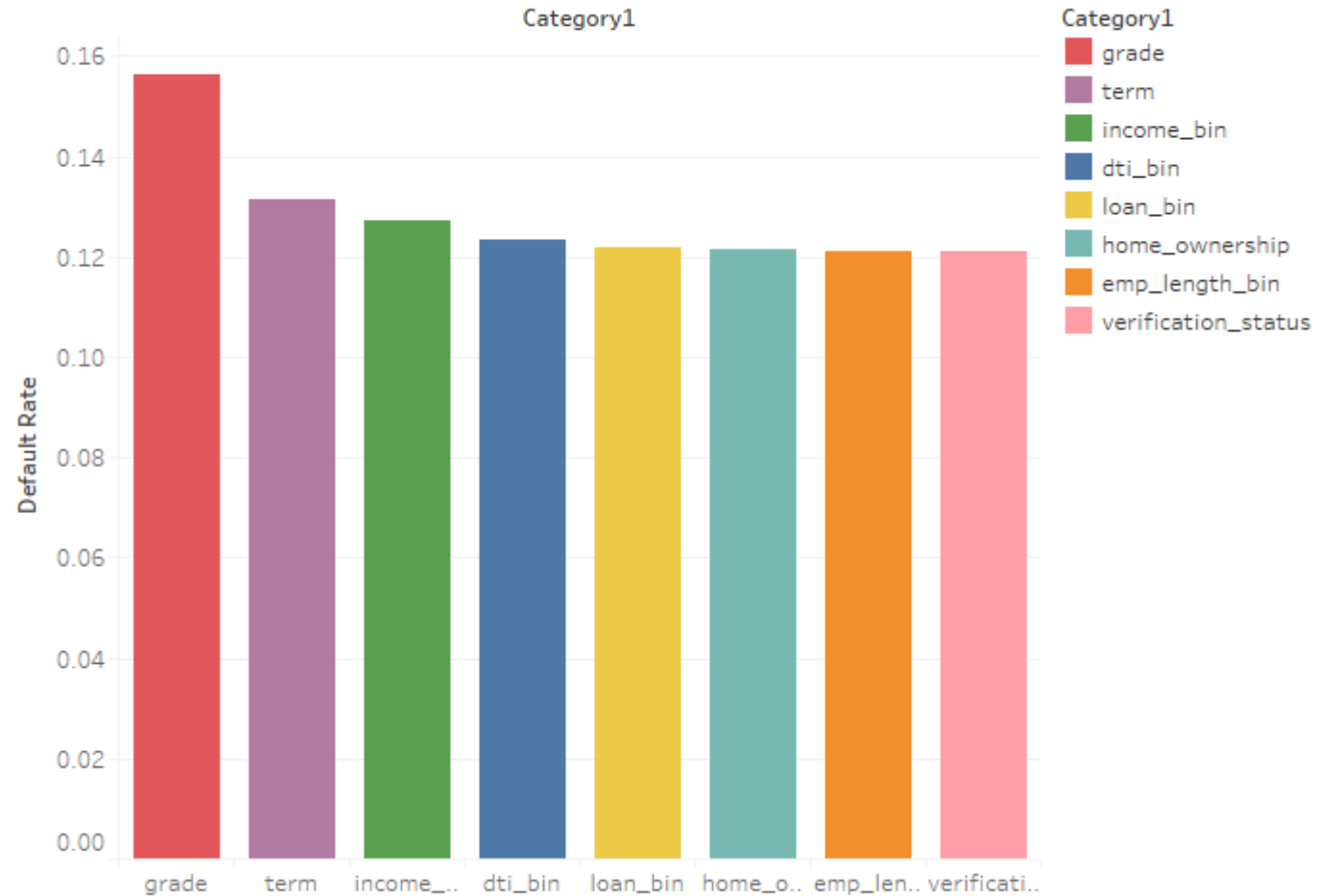


Default Rate as an attribute for each Category1. Color shows details about Category1.

Home Improvement – Significant Risk Variables

1. Grade
2. Term
3. Annual Income Bin
4. DTI Bin

Loan Default Rate : Home Improvement

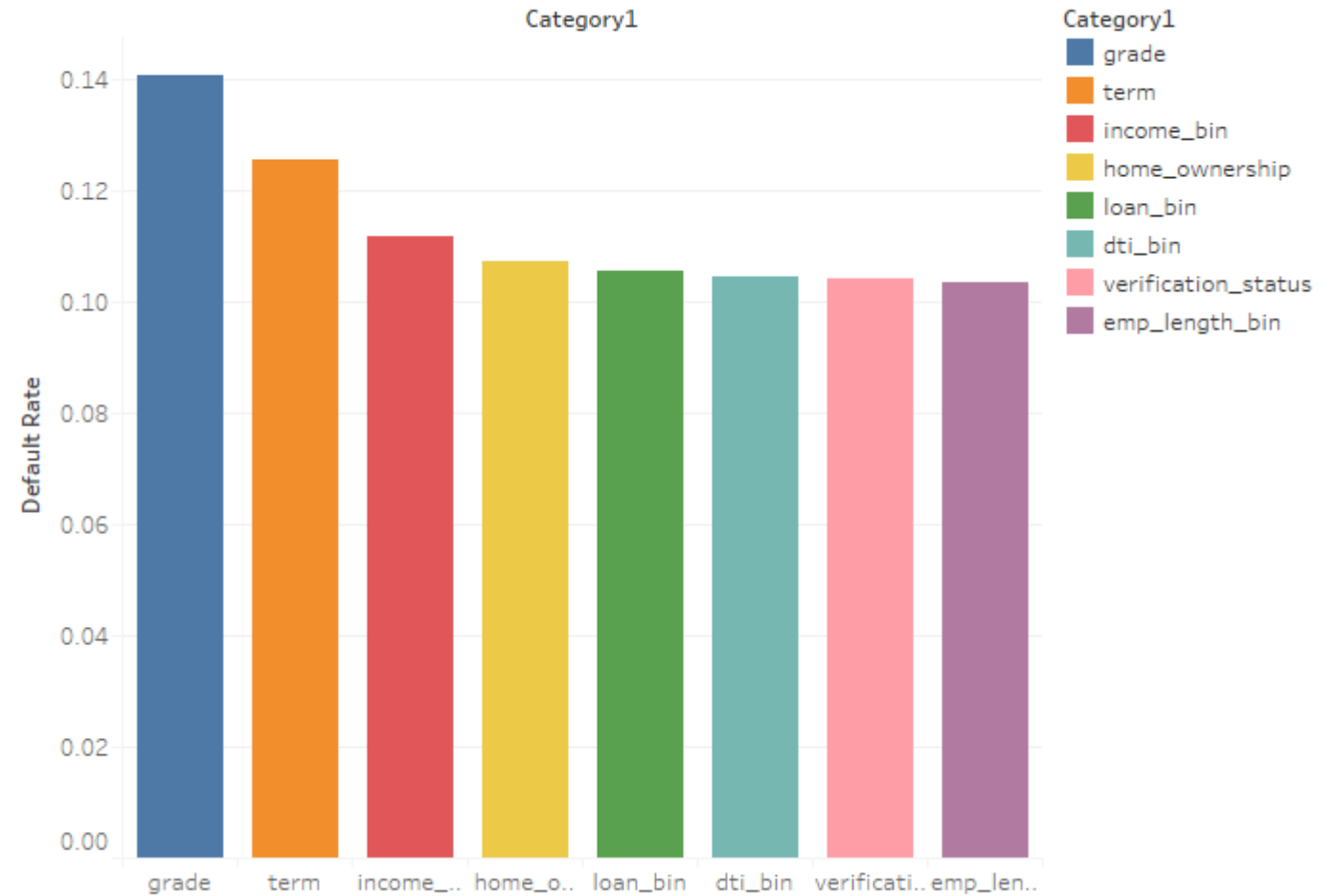


Default Rate as an attribute for each Category1. Color shows details about Category1.

Major Purchase– Significant Risk Variables

1. Grade
2. Term
3. Annual Income Bin
4. Home Ownership

Loan Default Rate : Major Purchase



Default Rate as an attribute for each Category1. Color shows details about Category1.

Thank You!