

Gramener Case Study

Team Tuple :

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Rationale:

To get a basic understanding of risk analytics in banking and financial services and understand how data is used to minimize the risk of losing money while lending to customers.

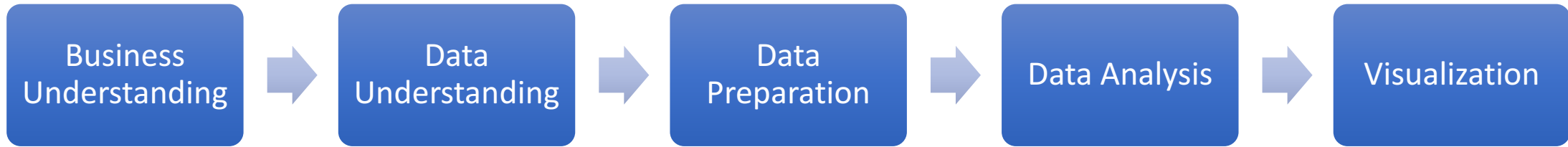
Background:

There is a consumer finance company which specializes in lending various types of loans to urban customers. It is the the largest online loan marketplace, facilitating personal loans, business loans, and financing of medical procedures.

Objective:

The Company wants to understand the **driving factors (or driver variables)** behind loan default, i.e. the variables which are strong indicators of default, so that it can utilize this knowledge for its portfolio and risk assessment.

Process Pipeline



Data Exploration

- There are 111 variables in the loan dataset.
- Most of the variables contains a single value or more number of Nas.
- There are total 39717 records in the dataset.

Data Analysis

Univariate Analysis:

Composition of Loan status

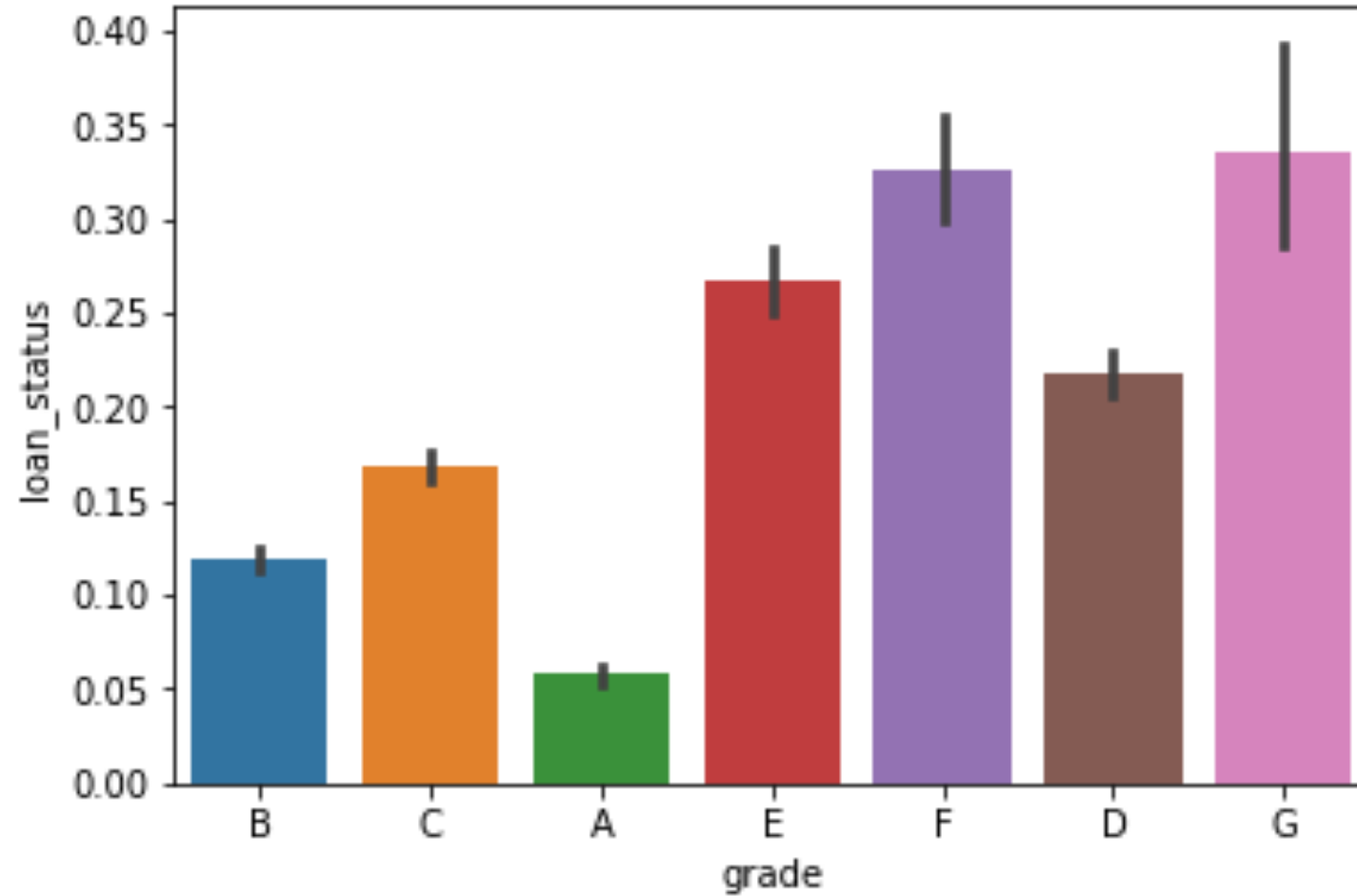
Status of Loan	Number
Current	N/A*
Charge Off	5399
Fully Paid	32145

** Nothing can be said about the current loans as we don't know whether the customer will pay or charge them off, therefore we remove the current loans.*

Default rate Composition

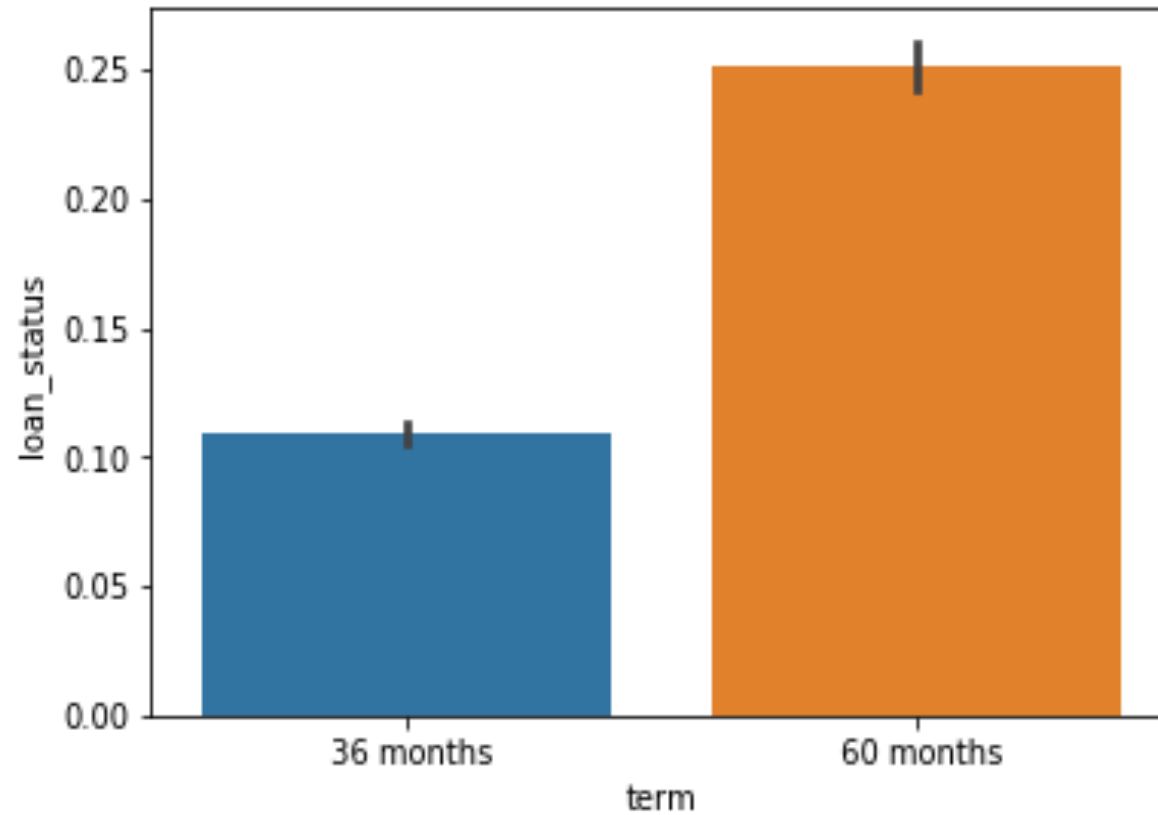
Default	14%
Non-Default	86%

Default Rate across grade of the Loan



Comment:
Apparently, default rate is
increasing with the grade

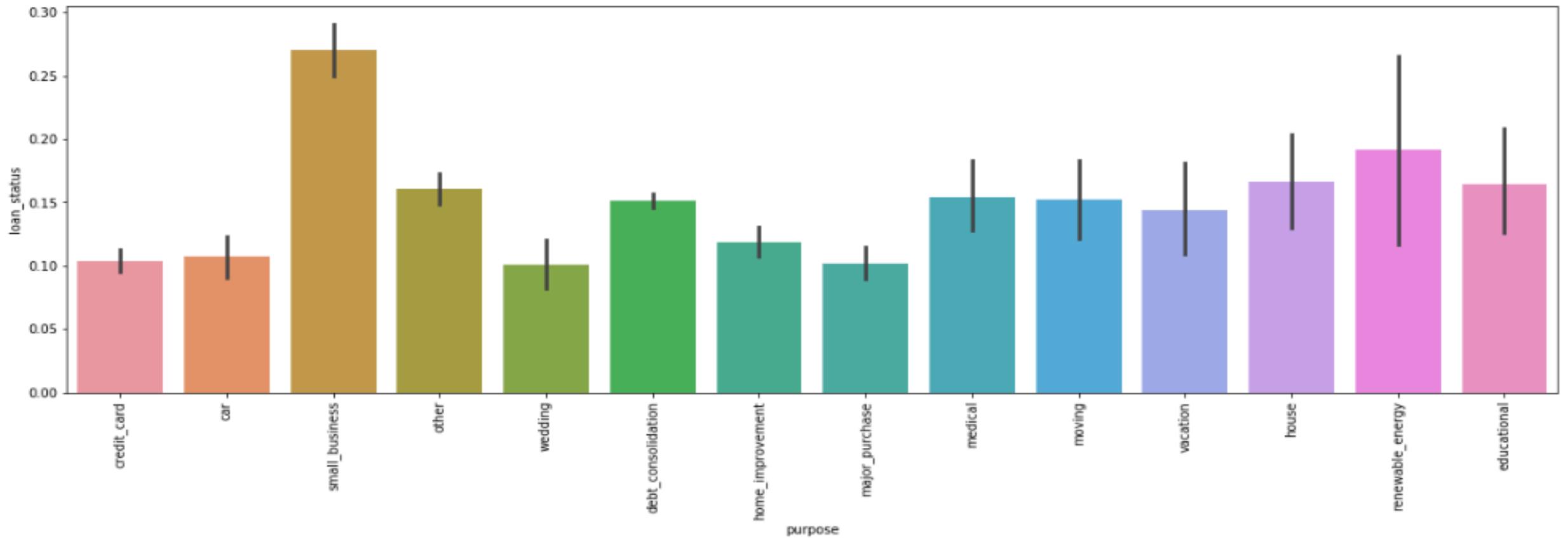
Default Rate based on the term



Default rate of high term(60 months) borrowing is greater.

Policy recommendation:
More scrutiny of long-term borrowers.

Default rate by Loan purpose

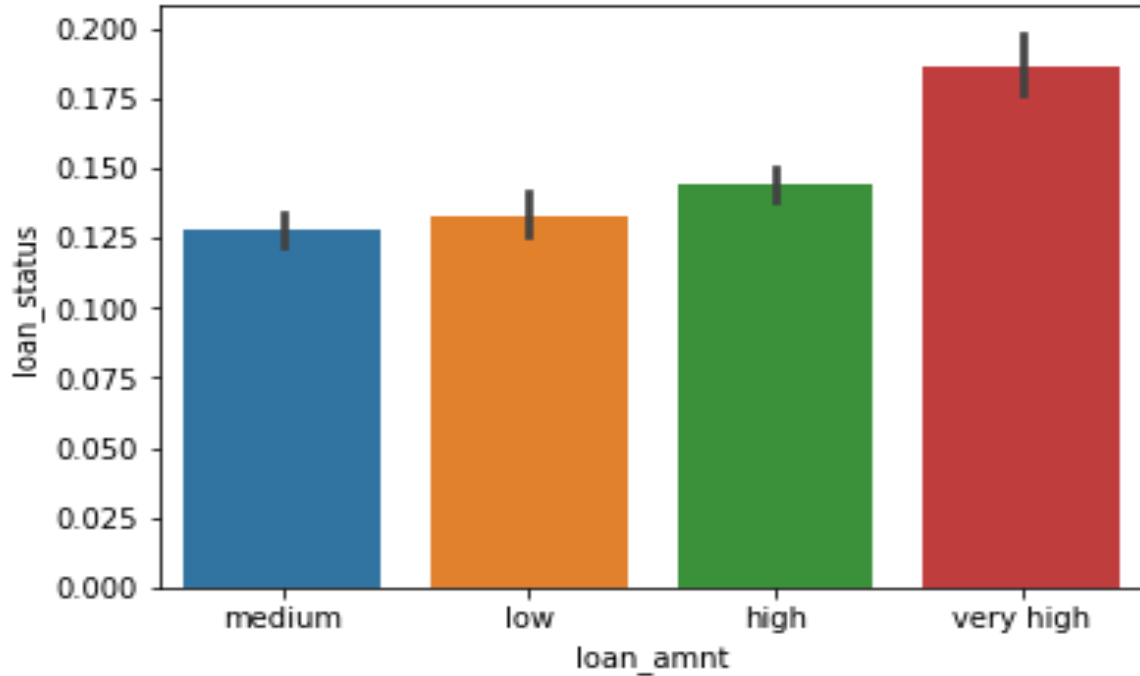


Comments:

- Highest default rate by small businesses(more than 25%)
- Lowest default rate by wedding(Approximately 10%)

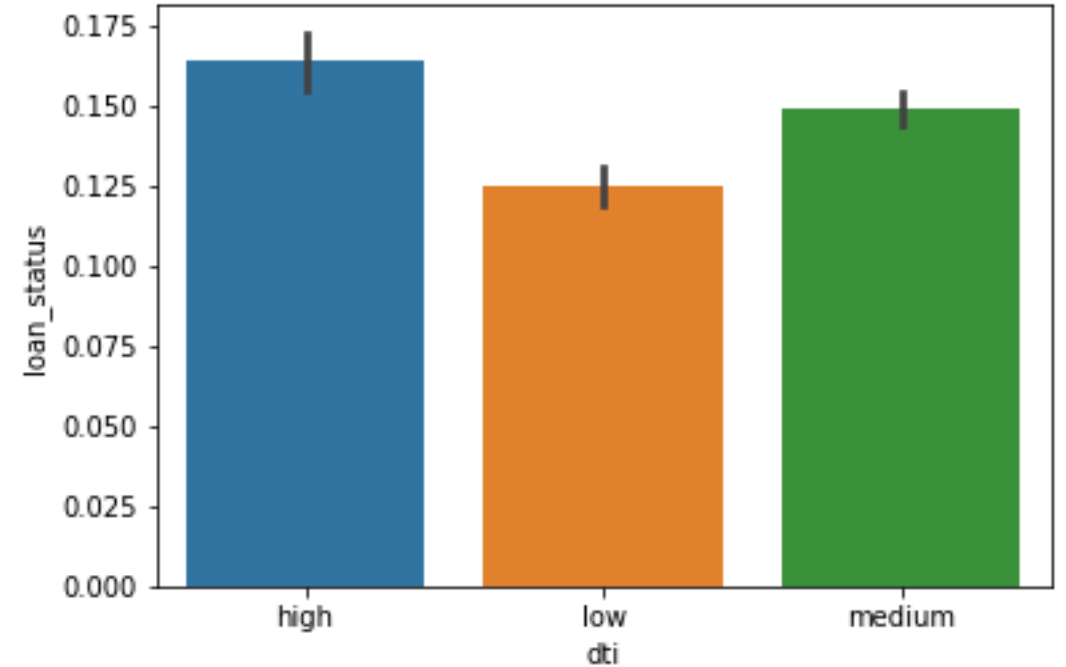
Default rate by:

Loan Amount



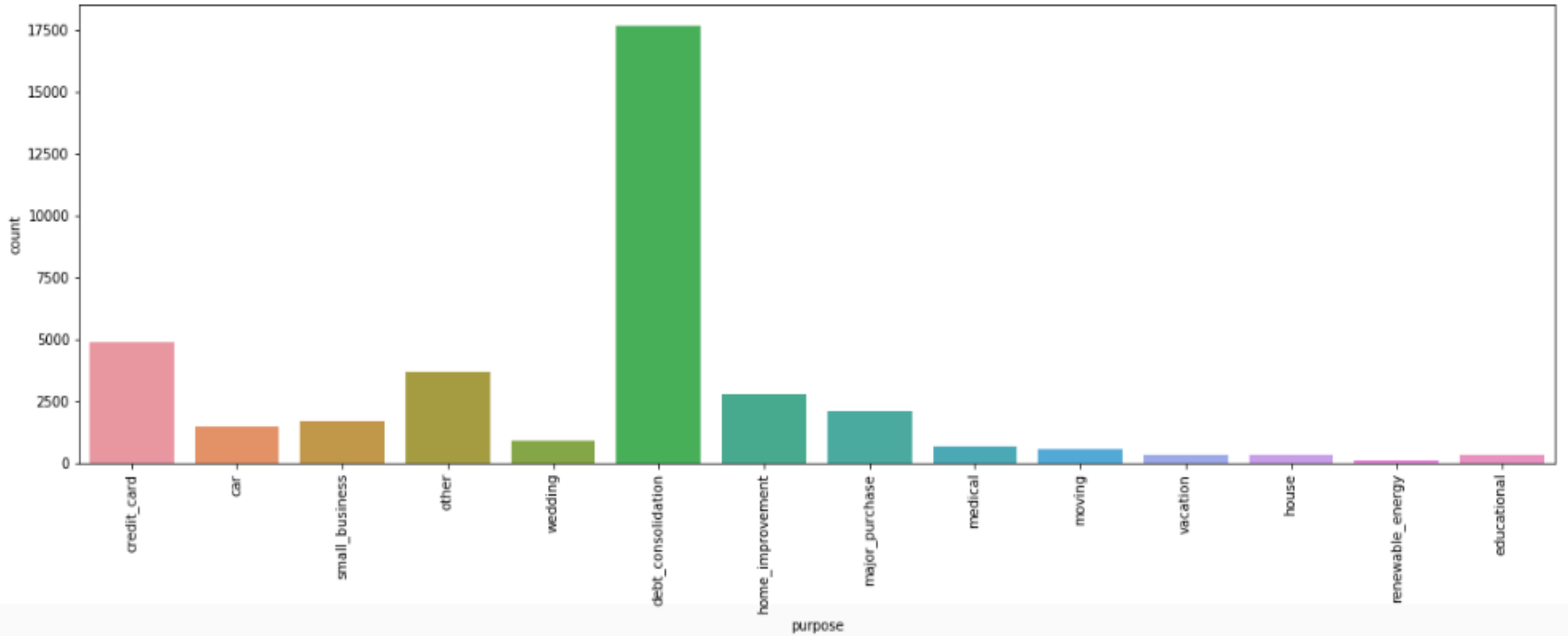
*With increasing amount, the default rate is increasing.

Debt-Income ratio



*Borrowers who had the high Debt-income ratio defaulted the most.

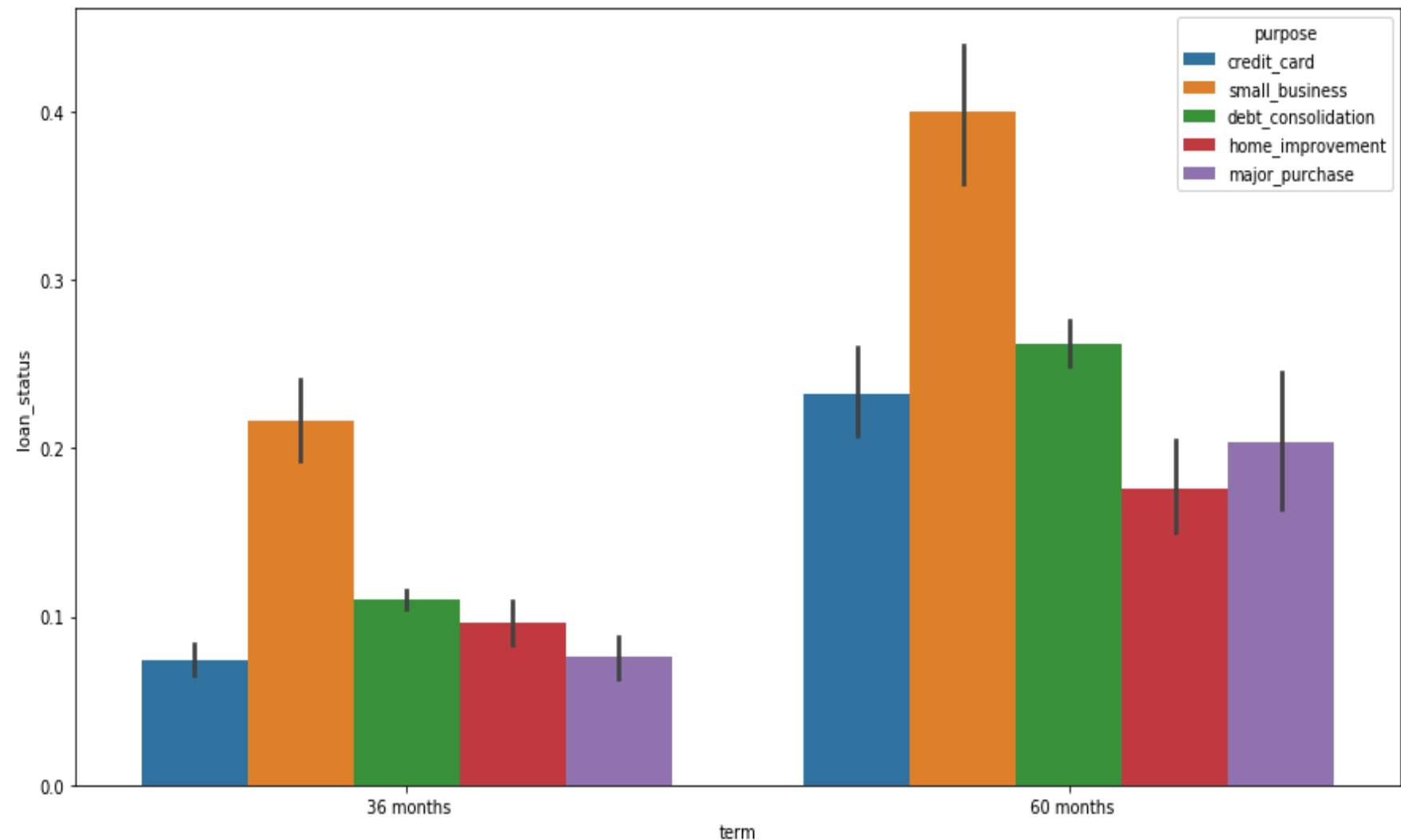
Distribution of the loans on the basis of purpose



*Most popular among all is Debt consolidation with a count of 17675(approx 46% of total)

Segmented Univariate Analysis

Default rate of top five loans based on purpose, segmented by term.



*For both terms, the default rate of loans taken for small business is highest.

Conclusion:

So as per the analysis, we saw that there are many factors which the company should take care of while lending. Most important among them are:

- **Term:** Loans of the longer term are most likely to default.
- **Purpose:** Most of the defaulters were those who took loans for small business. So proper scrutiny of purpose should be done before sanctioning loans.
- **Amount of the loan:** It was noticed that loans of the high amount defaulted the most.
- **Debt-Income ratio:** With high debt-income ratio, a borrower's capacity to repay the loan decreases, which we saw in our analysis. Default rate was high in the case of high debt-equity ratio.