LOAN CASE STUDY

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EXECUTIVE SUMMARY

This case study is related to a consumer finance company which specializes in lending various types of loans to urban customers. Case study analyses the historical data shared by the consumer finance company and draws insights which can help company with their credit appraisal process for new loans.

These insights will help company make informed decision on whether to approve loan application or not.

APPROACH

DATA CLEANUP

- Checked for duplicate rows and no duplicate records found

- Removing columns and rows having all null values from the loan dataset as they cannot provide any insight

- Removing the loan type with status as 'Current' as these are loans currently being serviced and they cannot provide meaningful insight to defaulting

- Dropped columns which are related to customer behavior(non-financial), columns having single values and columns whose values can be represented by other columns

- Setting correct data types of the columns for analysis like removing '%' from int_rate, setting up numerical data types for column like annual_inc etc

DATA ANALYSIS – KEY INFERENCES

▪ Loan amount(funded_amt_inv) was analyzed to understand the data distribution and only 95 quartile was taken for analysis after removal of outliers.

▪ Annual income outliers are removed and only 95 quartile are taken

● Plotting of closed and charged off loans shows that around 14% loans are charged off

▪ Purpose of loans shows that maximum loans are taken by customer for debt consolidation

● Home ownership data analysis shows that most of the customers are living on rent or have mortgage.

▪ New derived columns were created for bucketing of key financial data like loan amount, employment length, annual income and dti for breaking up of loan data into these buckets and plot against charged off. This to infer how these critical financial data are contributing towards loan default

KEY INFERENCES

- Annual income is directly proportionate to loan default. As maximum default is for people with salary less than $ 20 K and it goes down as the salary level goes up.

- People with no work experience are most likely to default

- People who are not owning house or having mortgage or not living on rent are most likely to default

- As ratio of debt to income(dti) increases people are more likely to default

- Business loans are riskiest loans with almost 27 % defaulting

RECOMMENDATIONS

Current credit/loan appraisal process needs to be put more diligence around:

- Business loans as these are most likely to default.

- Loan to customer with no work experience

- People with annual income of less than $40K

- People living with friends & family and not paying rent or mortgage or owning home
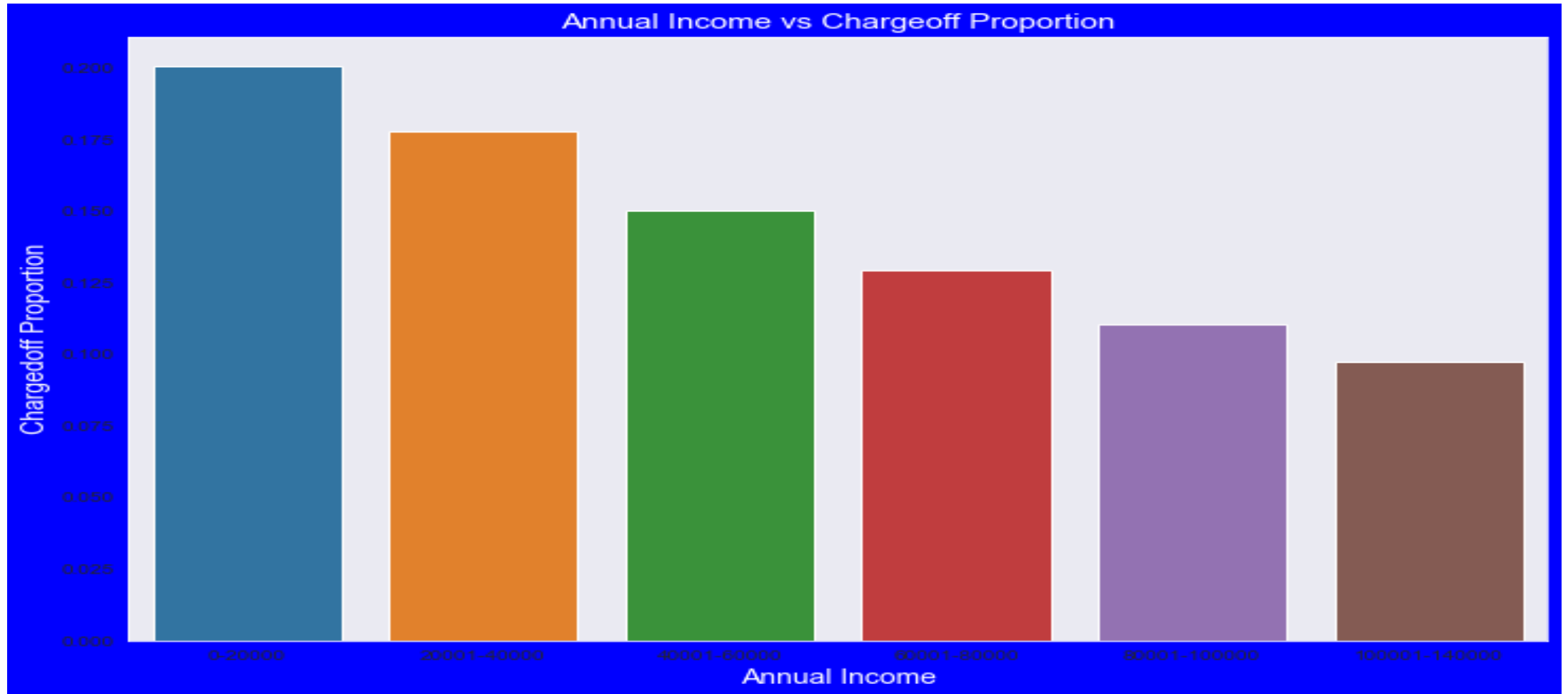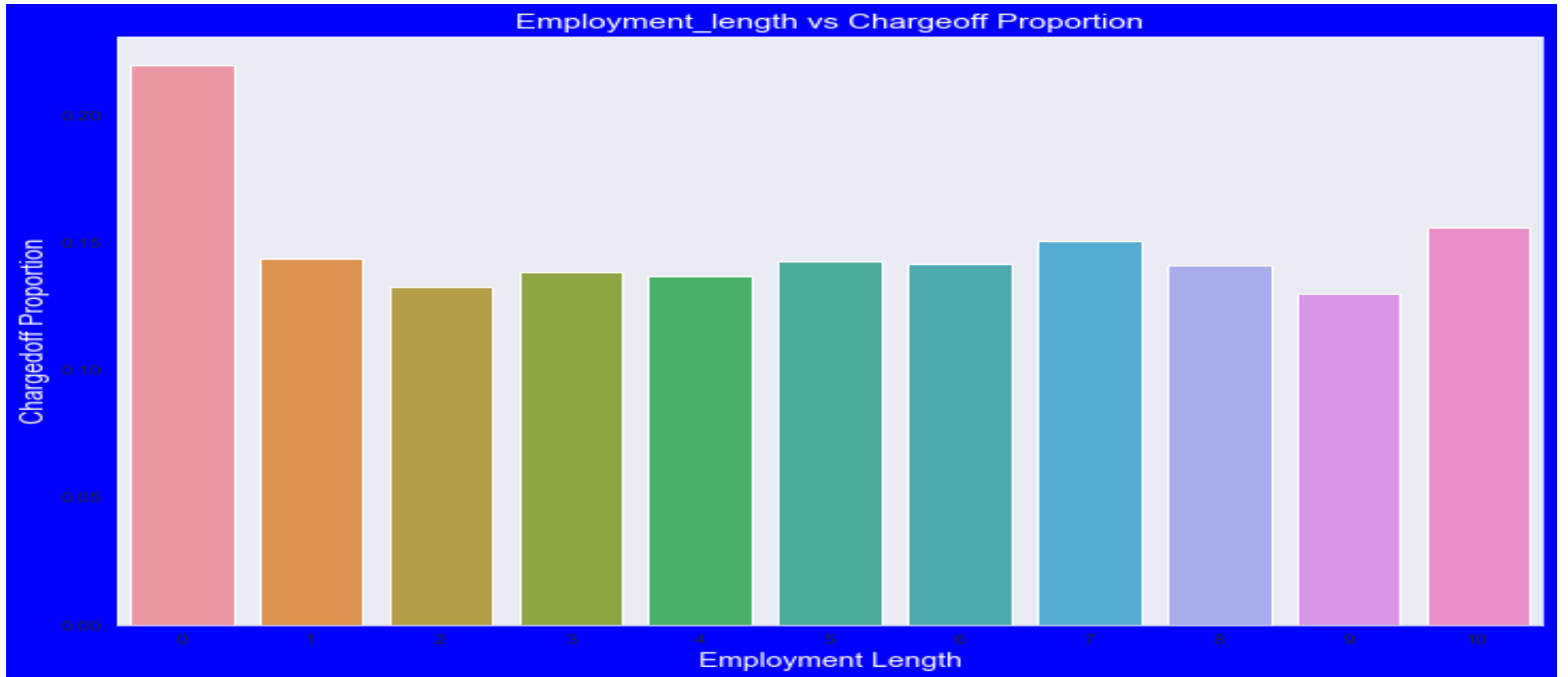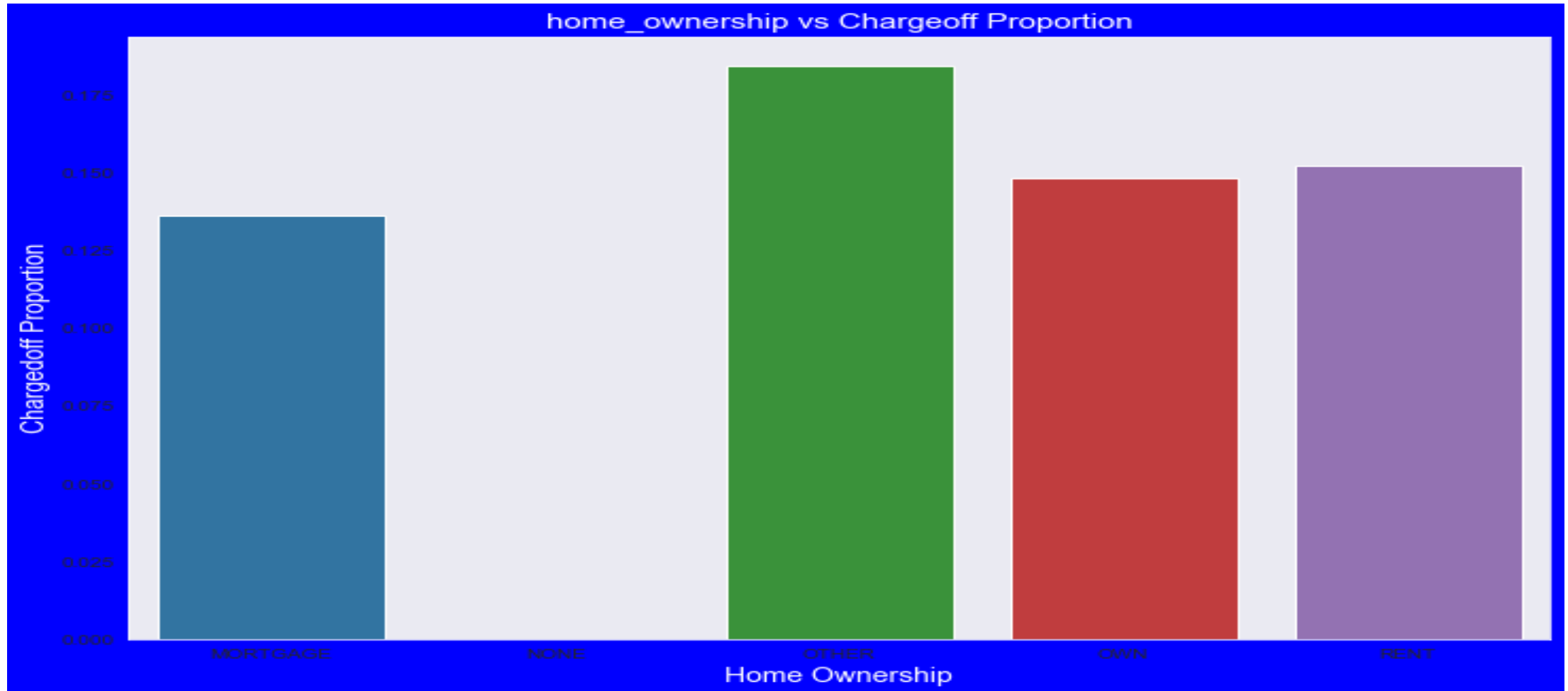
Annexure

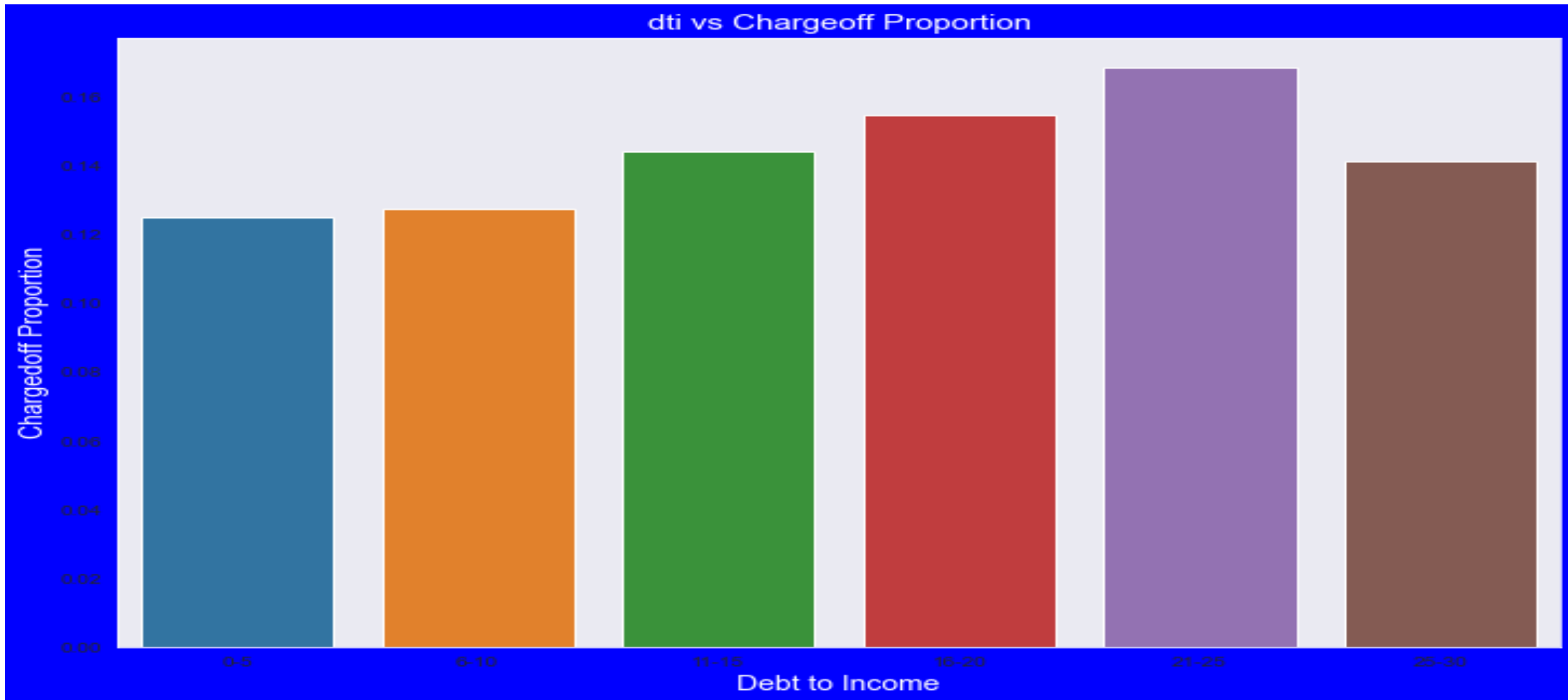# DATA ANALYSIS

GRAPHS

DATA ANALYSIS - ANNUAL INCOME VS CHARGE OFF

DATA ANALYSIS - EMPLOYMENT LENGTH VS CHARGE OFF

Employment_length vs Chargeoff Proportion

DATA ANALYSIS – HOME OWNERSHIP VS CHARGE OFF

DATA ANALYSIS – DEBT TO INCOME VS CHARGE OFF

DATA ANALYSIS – PURPOSE VS CHARGE OFF