



Customer Churn Analysis in Telecom Market

by
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Agenda

- Introduction
- Data Cleaning and Transformation
- Univariate Analysis
- Bivariate Analysis
- Numerical Analysis
- Conclusion





Introduction

- This repository holds an end-to-end analysis on Customer Churn Analysis in Telecom Market. It provides insights, identifies KPI's and suggests recommendations on how to reduce the overall churn rate. The analysis was carried out on 7048 records with 21 columns.

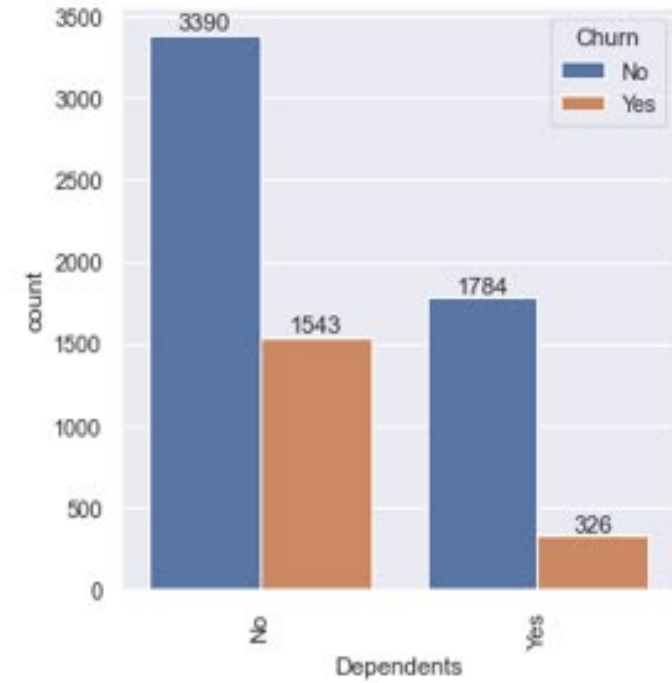
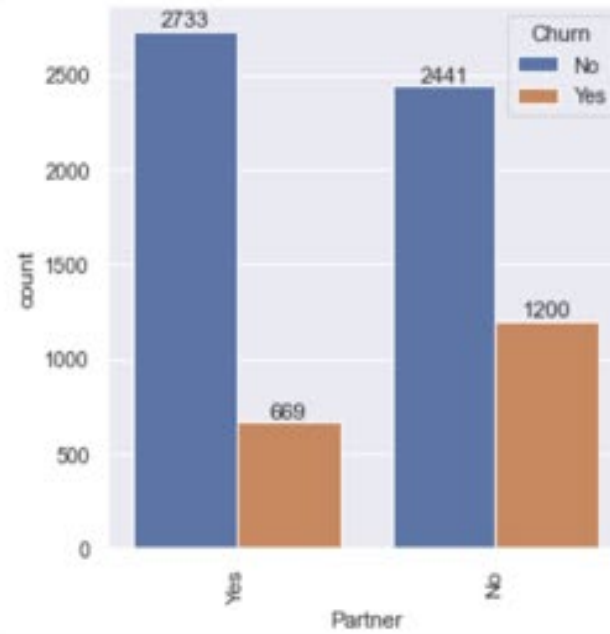
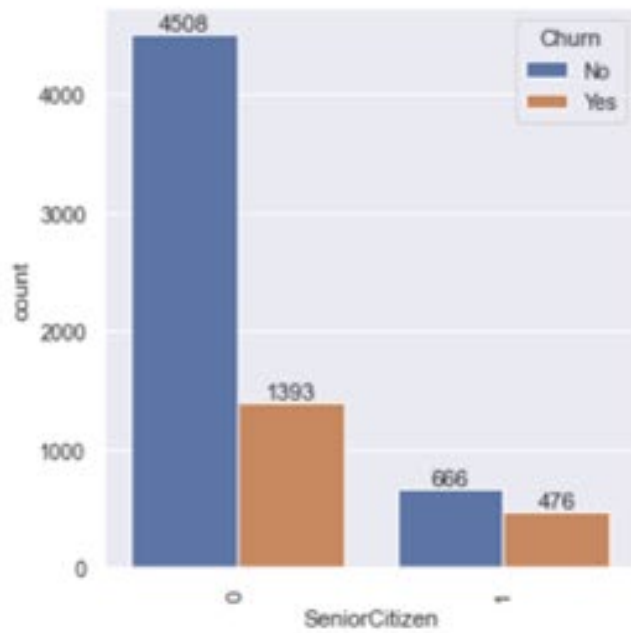
Data Cleaning and Transformation

The data from the data source is first checked for discrepancies. The NULL values can be imputed using mean/median /mode, whichever is appropriate. In this case, as the null values are less than 15%, it is removed from the total charges column. Then the tenure column is converted into bins to get a range of values column. The columns column id and tenure are removed as it will not be useful in the analysis. Now the data is transformed properly into the form that is ready for analysis. The overall churn rate is calculated as 26.5%, the analysis is done on the basis to reduce the Churn rate.

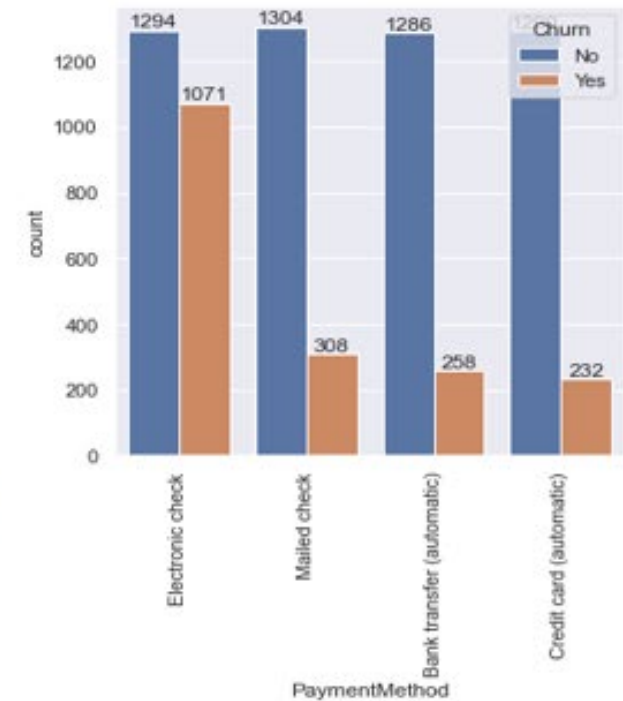
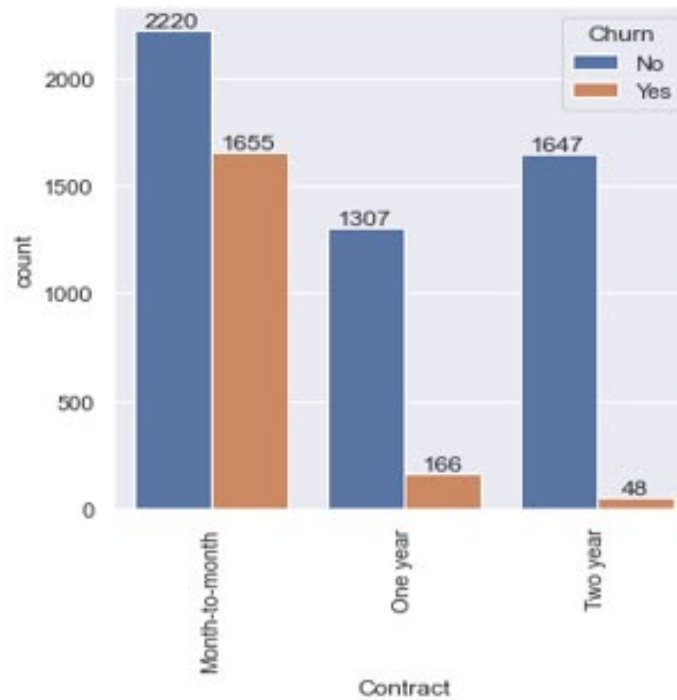
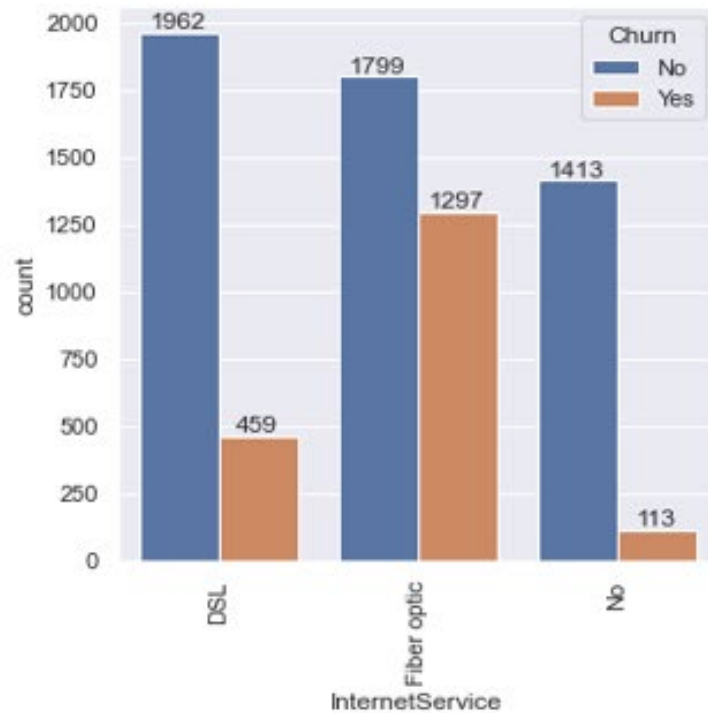
Univariate Analysis

The categorical columns of the customer churn table are analyzed with the churn column as reference to identify the KPI's for reducing the churn rate.

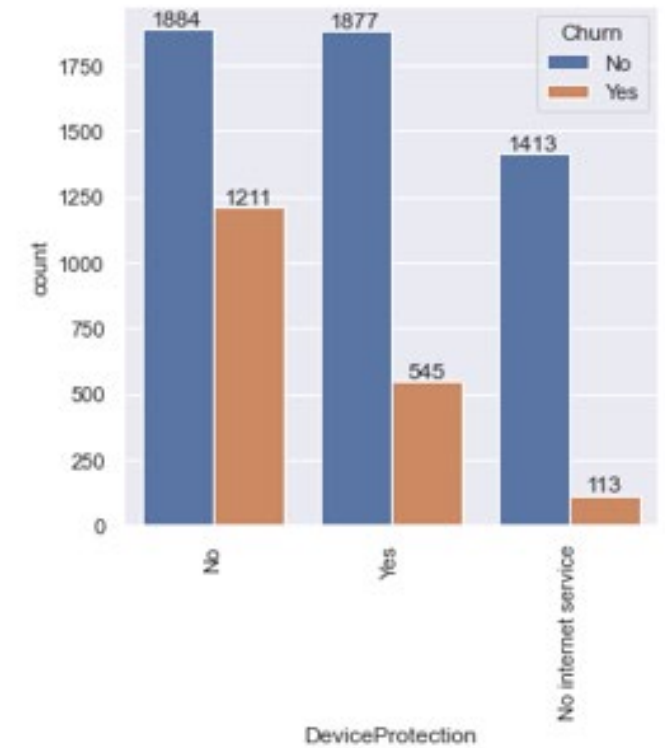
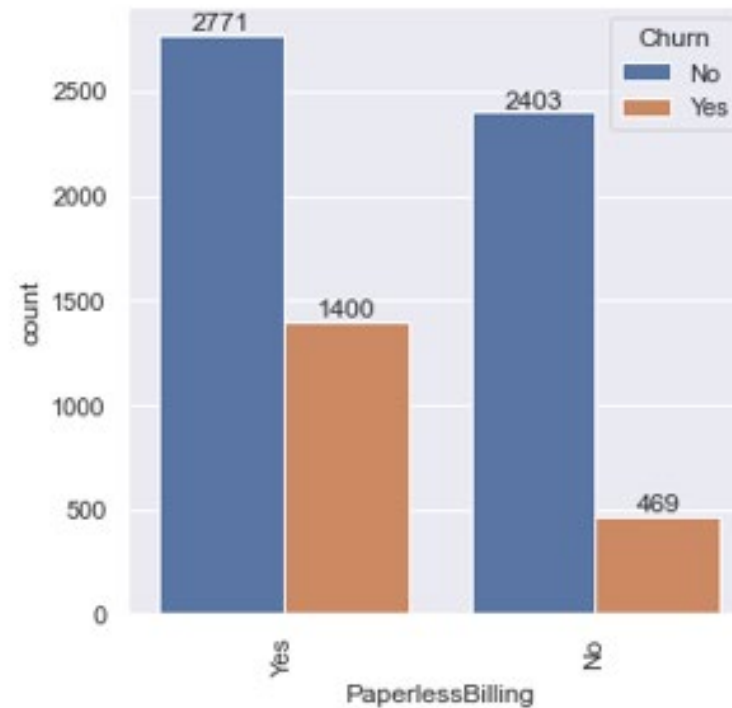
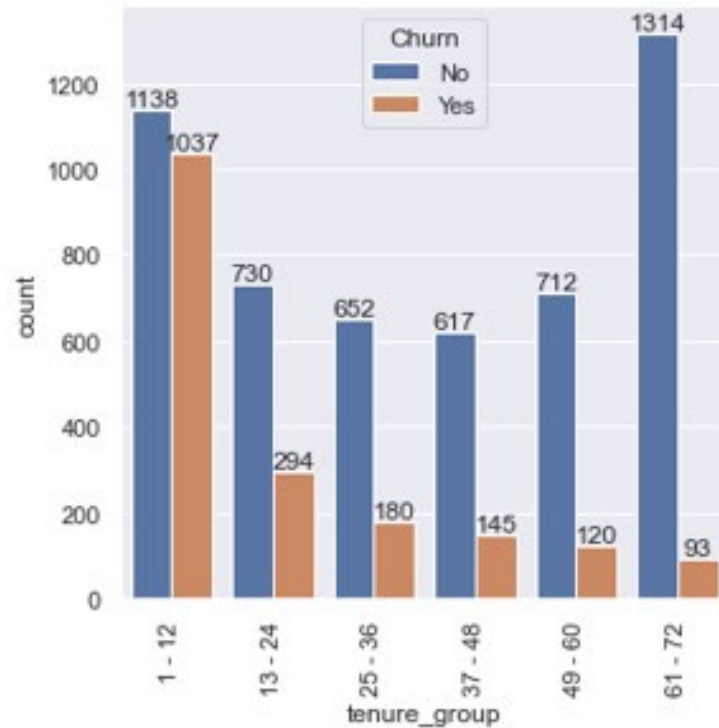
Chart



Chart



Chart

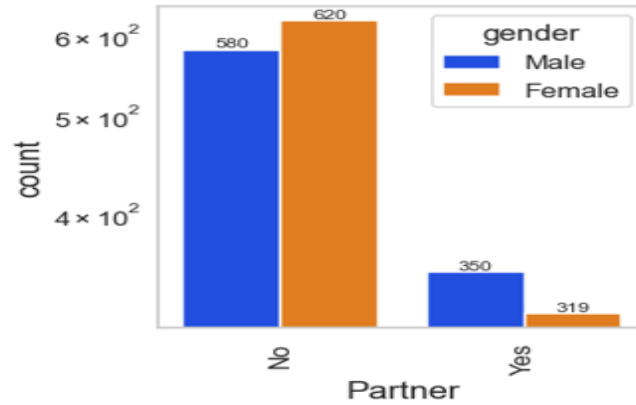


Bivariate Analysis

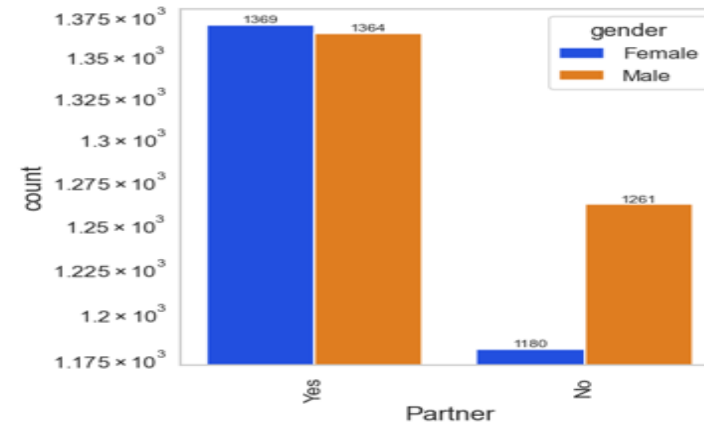
The entire records are grouped into active and churned customers and based on these two data frames, the bivariate analysis is done between the two columns of the query table to identify the factors that increase the churn rate of customers. The following graphs are generated in the bivariate analysis.

Chart

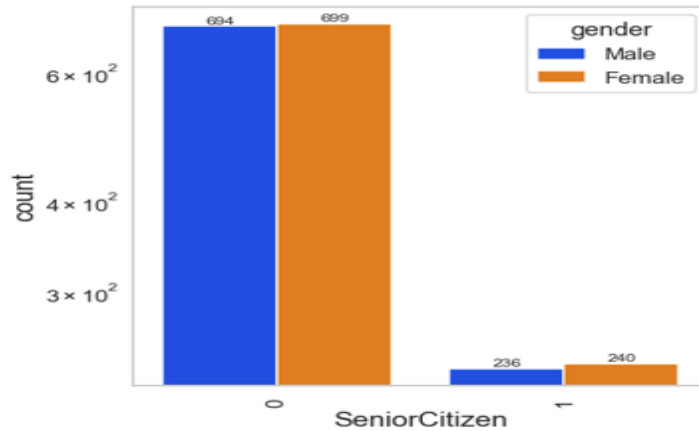
Partner vs Gender for Churned Customers



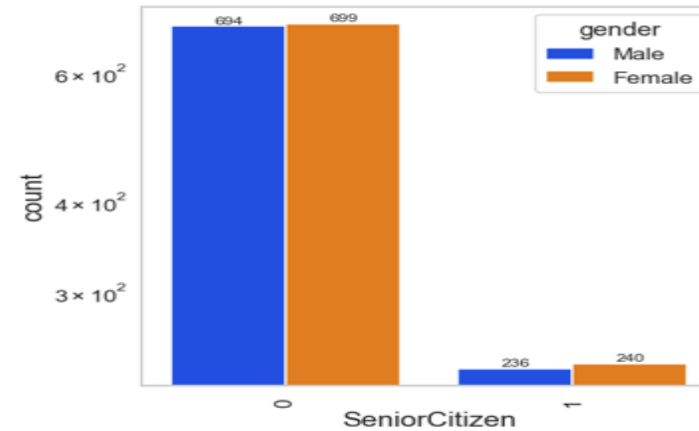
Partner vs Gender for Active Customers



Senior Citizen vs Gender for Churned Customers

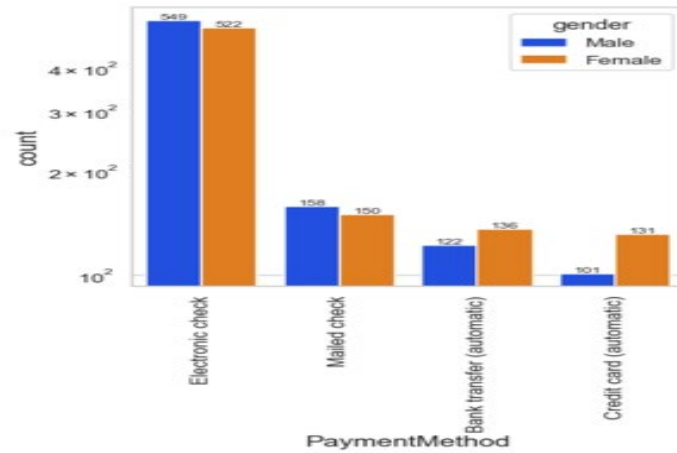


Senior Citizen vs Gender for Churned Customers

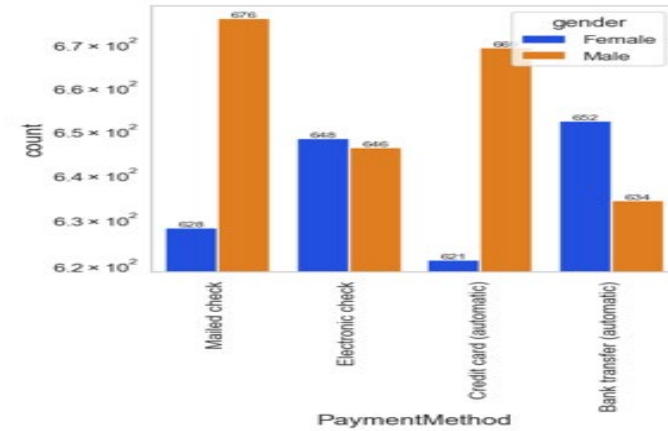


Chart

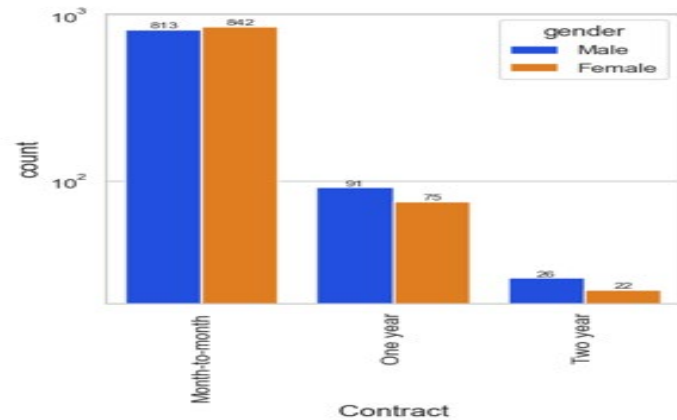
Payment Method vs Gender for Churned Customers



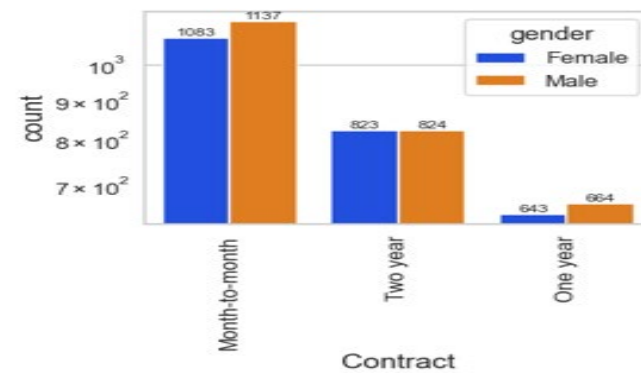
Payment Method vs Gender for Active Customers



Contract vs Gender for Churned Customers

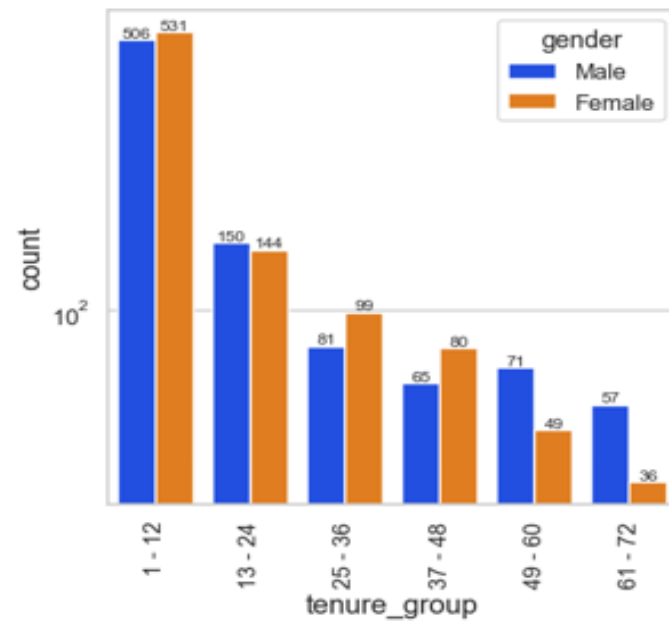


Contract vs Gender for Active Customers

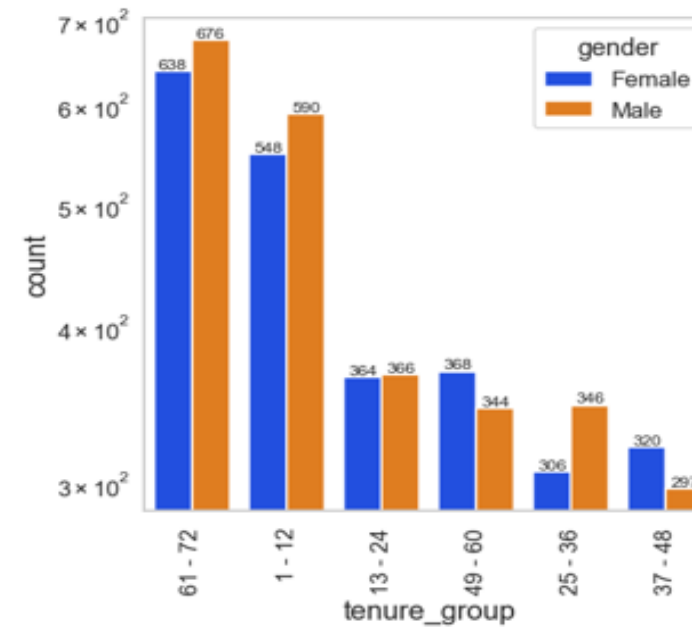


Chart

Tenure group vs Gender for Churned Customers



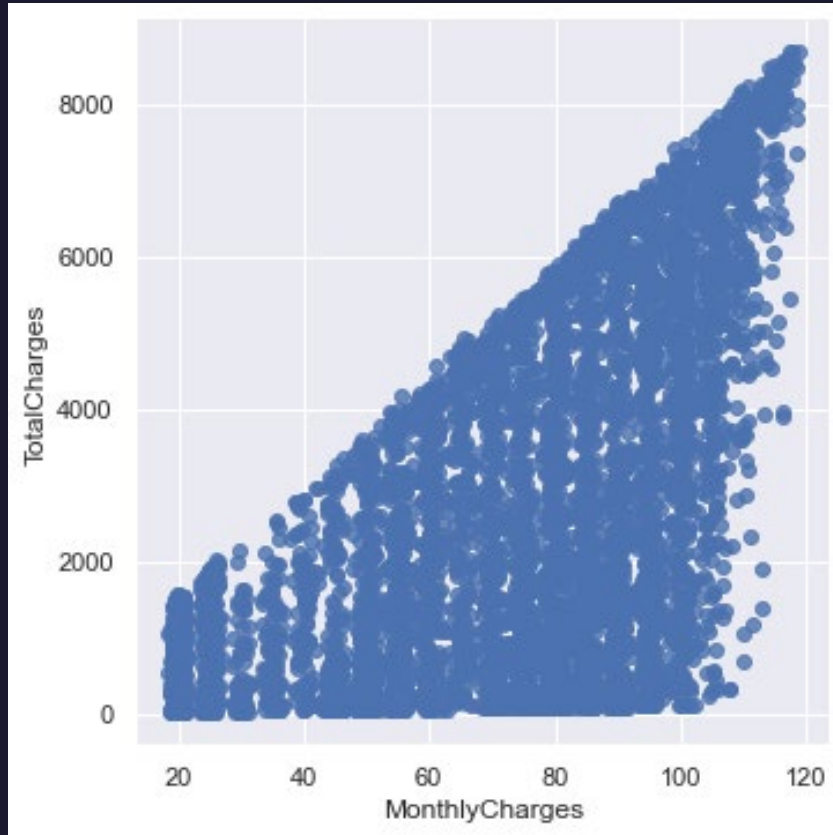
Tenure Group vs Gender for Active Customers



Numerical Analysis

The numerical columns in the customer churn table are Total charges and Monthly Charges. These columns are analyzed to identify the factors that has to be considered in reducing churn rate

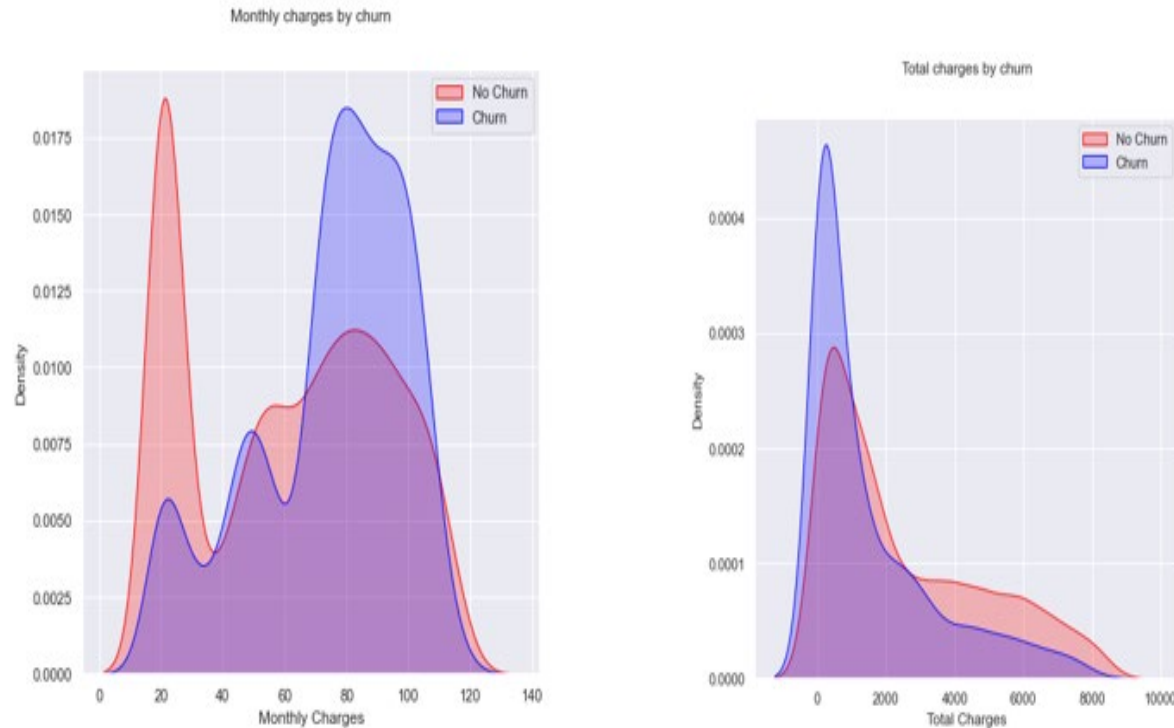
Chart



This relation shows that as the monthly charges increases then the total charges increase too.



Chart



The high churners are identified as those with high monthly charges in the range of 60 to 120.

The high churners are identified to be the customers whose total charge is in the range of 0 to 2000; Maybe they are the ones who churns in a short period of time, so their total charges are less.



Conclusion

The following analysis is based on the overall churn rate of the customers that rate to 26.5%

- The senior citizens and female non-senior citizens who are without partners and non-dependents are high churners.
- Customers without device protection, Online security, online backup, tech support, multiple lines together with female customers with multiple lines and phone services are high churner.
- Customers with fiber optics Internet services, streaming movies plan and with or without streaming TV options are high churners.
- Customers who belong to the tenure group of 1-24, with Month-to-Month contract type, Electronic check payment and paperless billing are the high churners
- The high churners are those with high monthly charges in the range of 60 to 120.
- The high churners seem to be the customers whose total charge is in the range of 0 to 2000; Maybe they are the ones who churn in a short period of time, so their total charges are less.

Thank You

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