Customer churn Analysis

BUSINESS UNDERSTANDING & OVERVIEW

You need to use EDA to analyze customers who are churning

We will perform Exploratory Data Analysis to get actionable insights

and convert it into meaningful stories and convert them into meaningful stories and

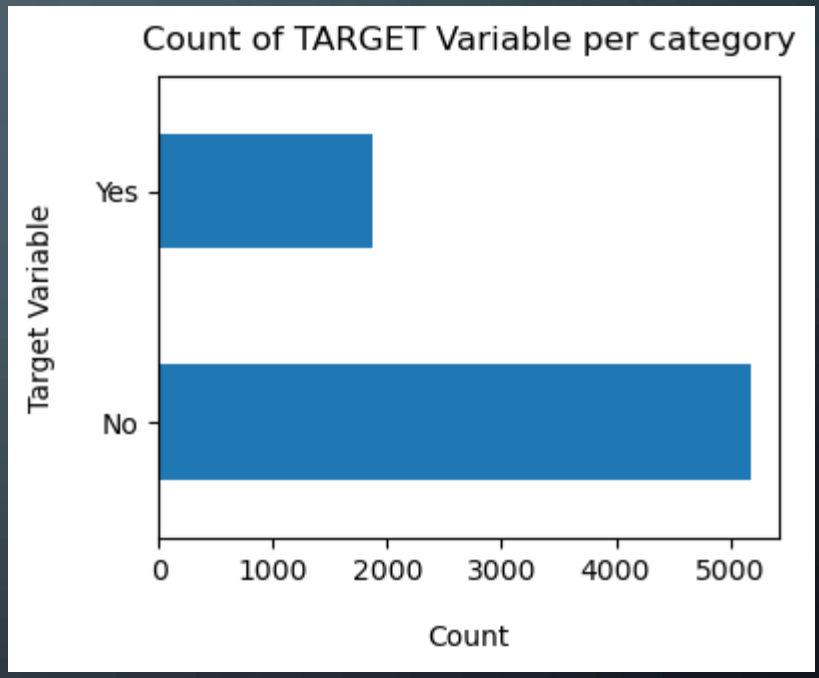
present it to companies so they can take necessary actions that will help them in customer retention.

UNDERSTANDING DATA

TARGET VARIABLE

FINDINGS

- Data is imbalanced 73:27
- Customer churn rate (27%) is high
- We need to analyze the data with other features while taking the target values separately to get some insights.



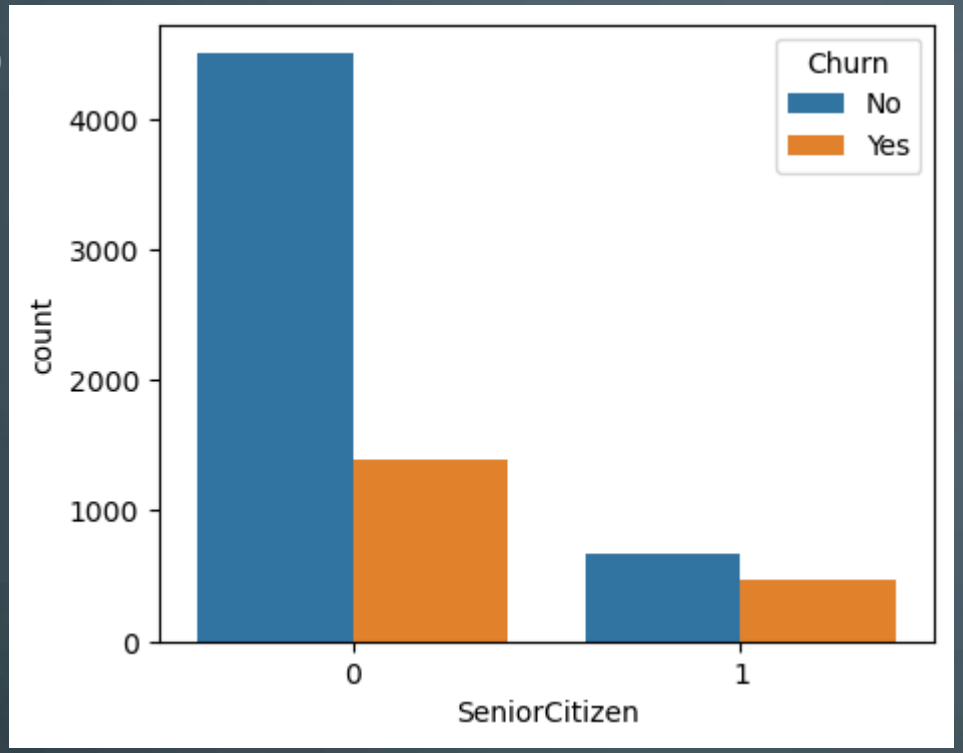
MISSING DATA

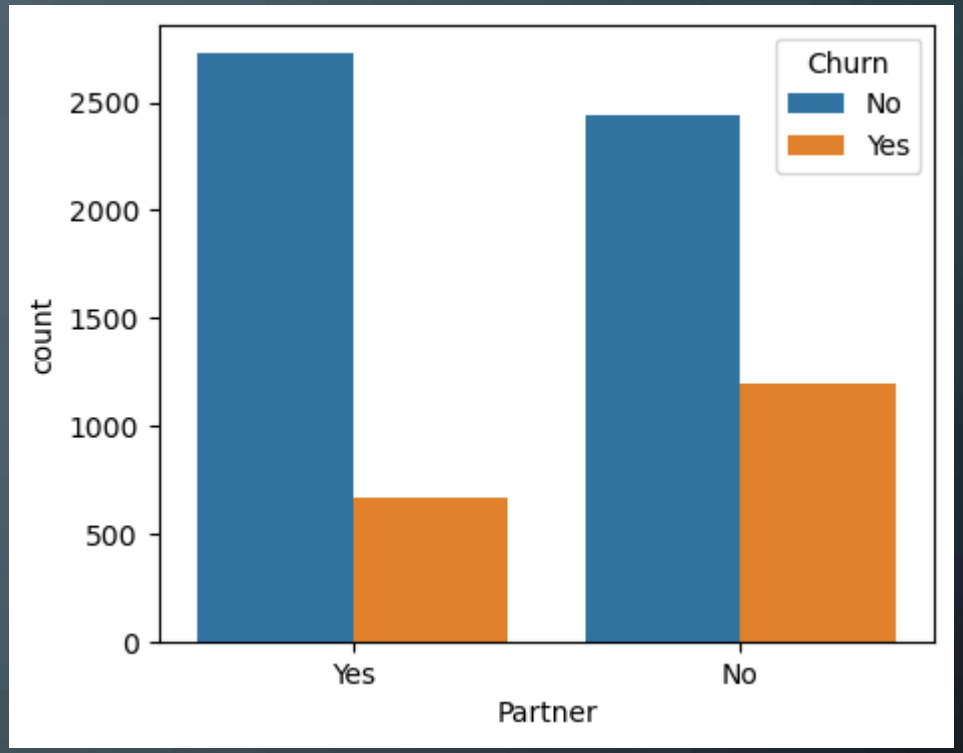
- Here, we don't have any missing data.
- General thumb rules:
- For features with less missing values - fill with the mean or median of the values present, depending on the feature.
- For features with very high number of missing values- it is better to drop those columns as they give very less insight on analysis.
- As there's no thumb rule on what criteria we delete the columns with high number of missing values, but generally you can delete the columns, if you have more than 30-40% of missing values. But we need to check the importance of columns before dropping them.

INITIAL INTUITION FROM DATA

- We Don’t have any missing values
- Total Charges column should be of numeric type
- After converting Total Charges column to numeric type , we got 11 missing values
- As the no of missing values is quite less so we are going to drop those 11 records

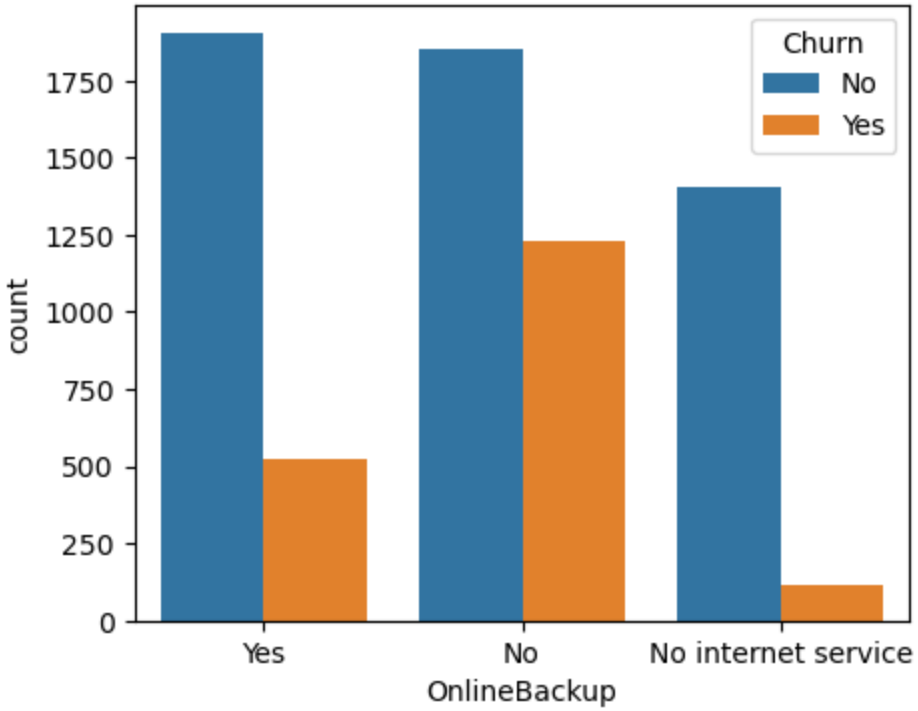
UNIVARIATE ANALYSIS

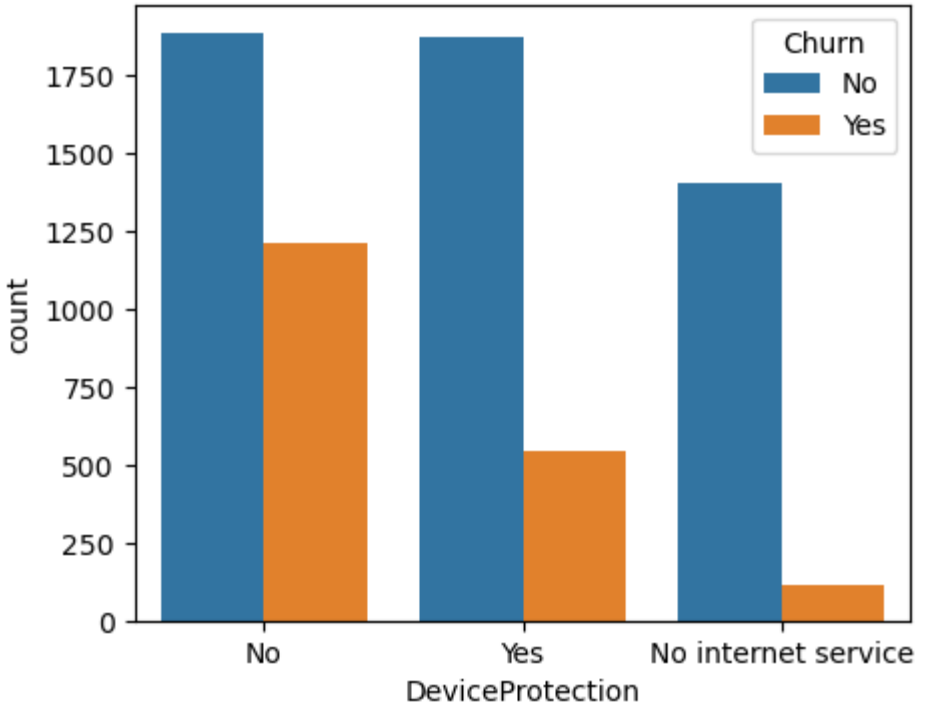


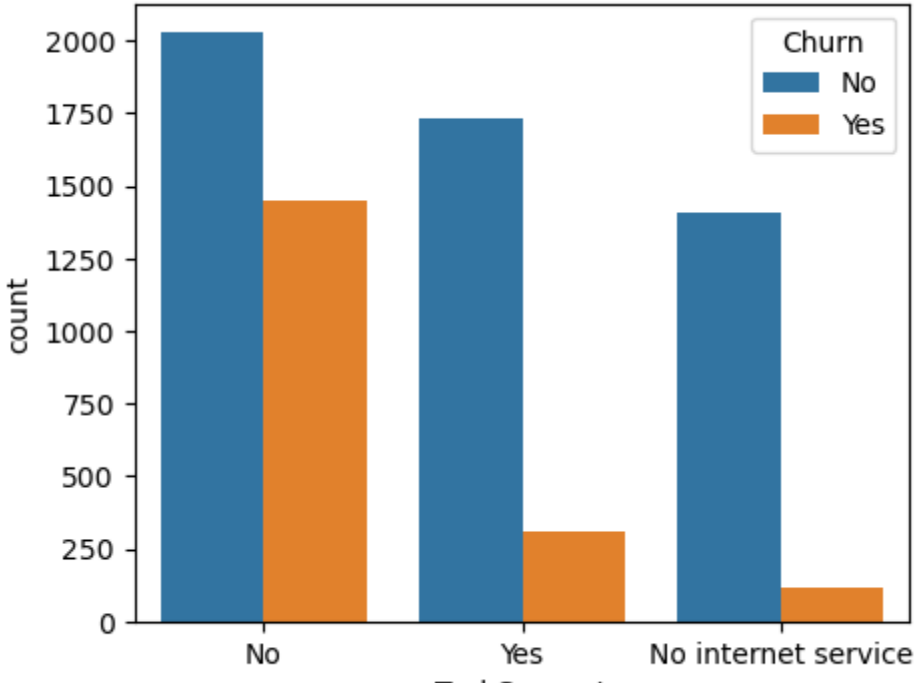


FINDINGS:

- No of senior citizen in data is less but they are more likely to churn
- Customers who don't have any partner are more likely to churn

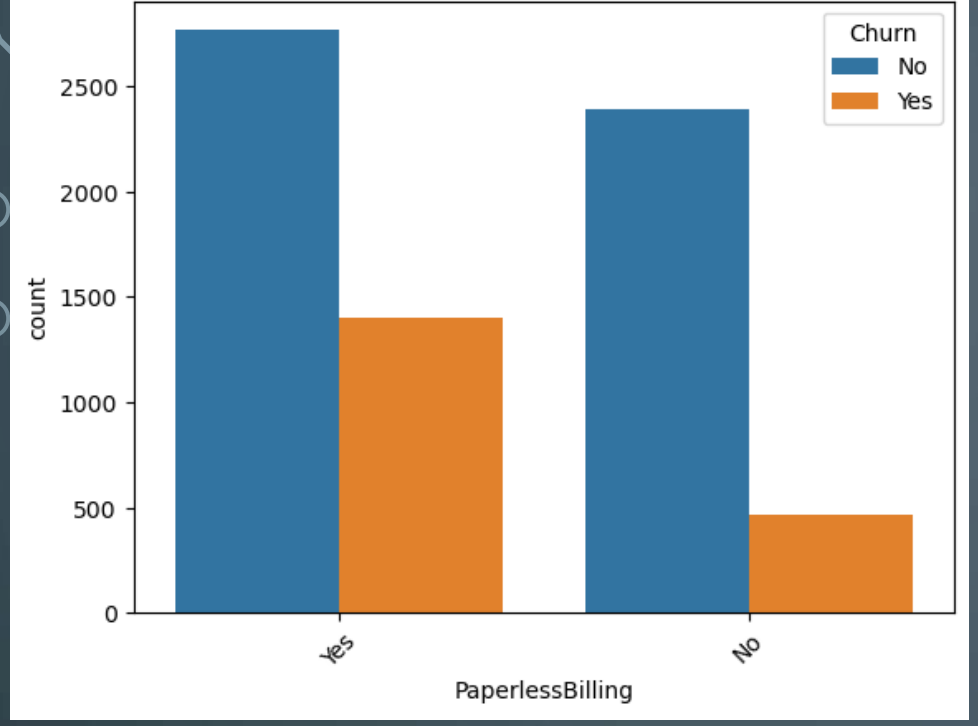


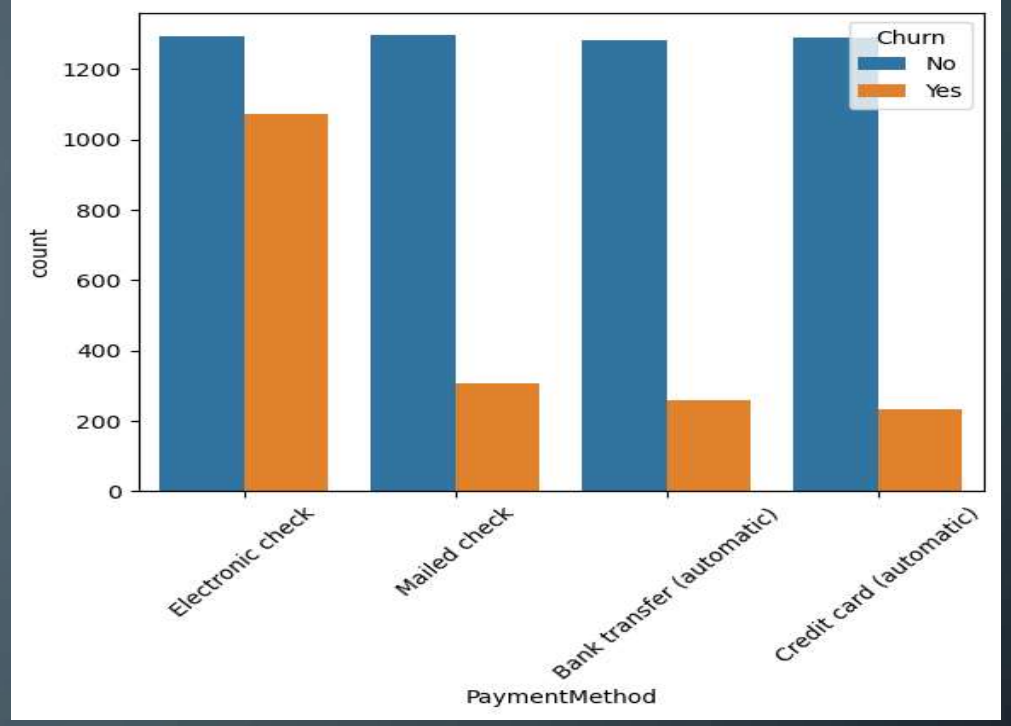




FINDINGS:

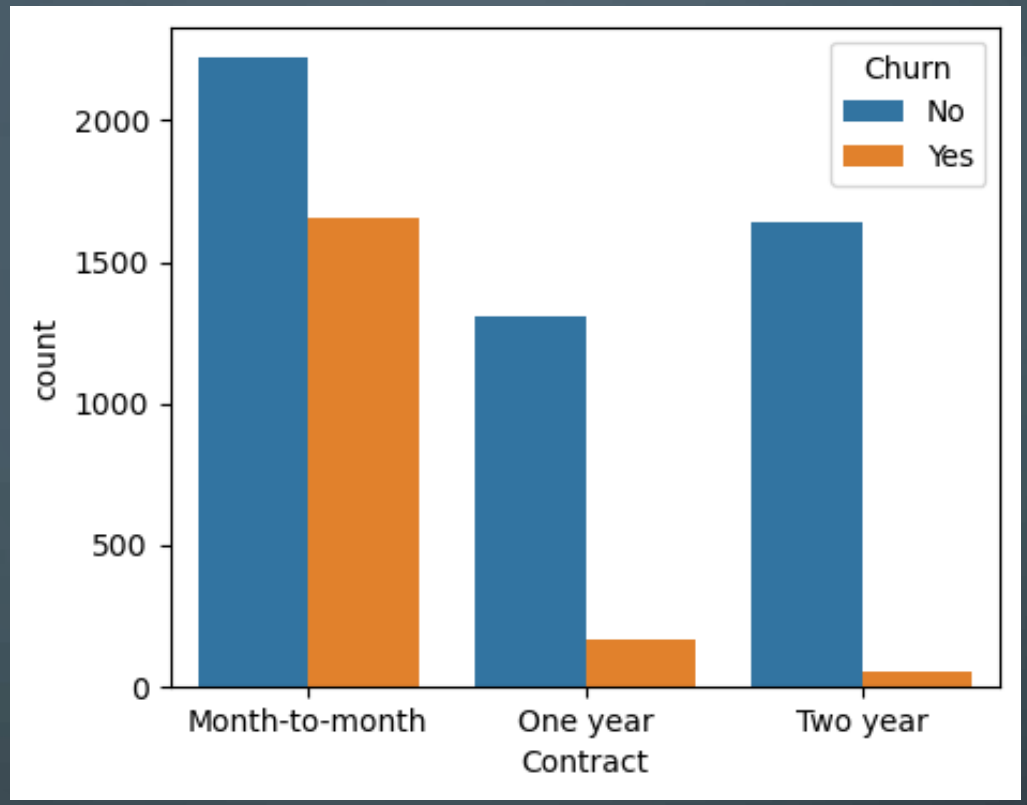
Customer's who don't have device protection , online backup and tech support are more likely to churn.





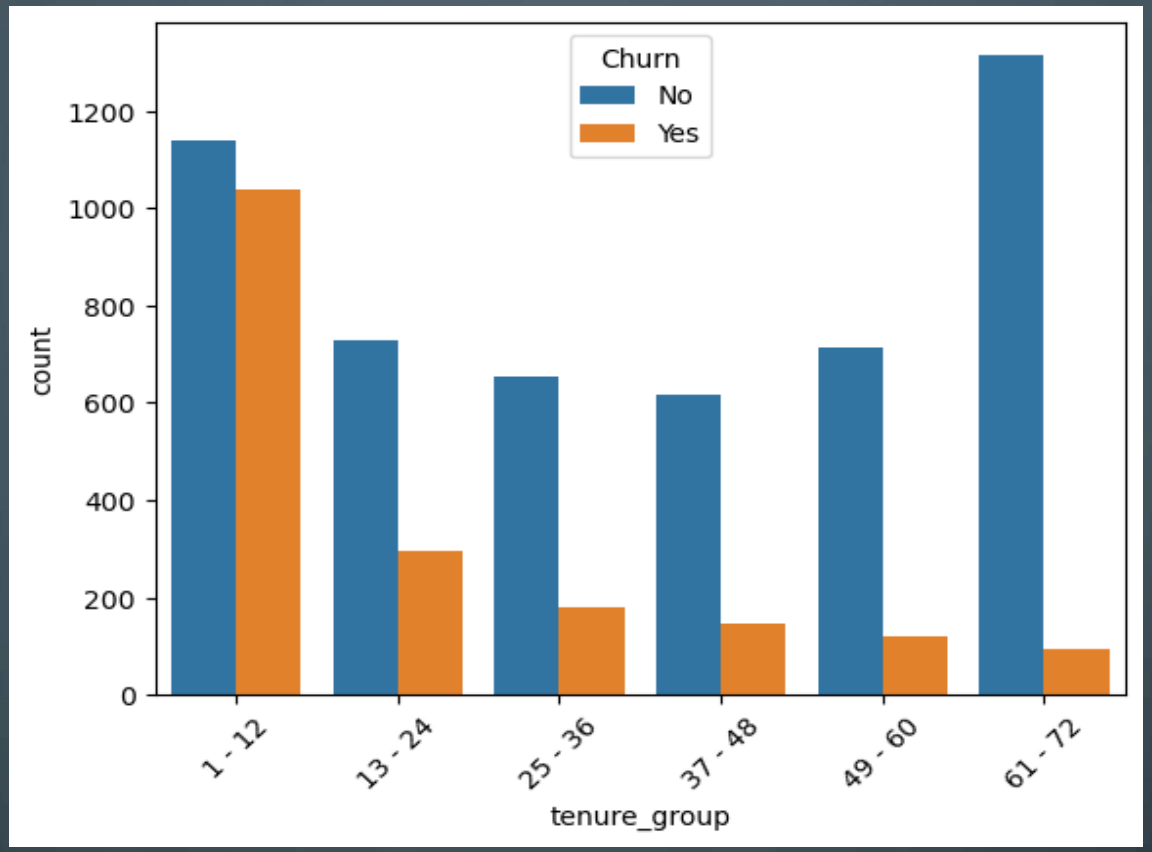
FINDINGS:

- Customers who are opting for paperless billing are more likely to churn
- Above point is proved from both the graphs as we can see customer's who are paying via electronic check are more likely to churn



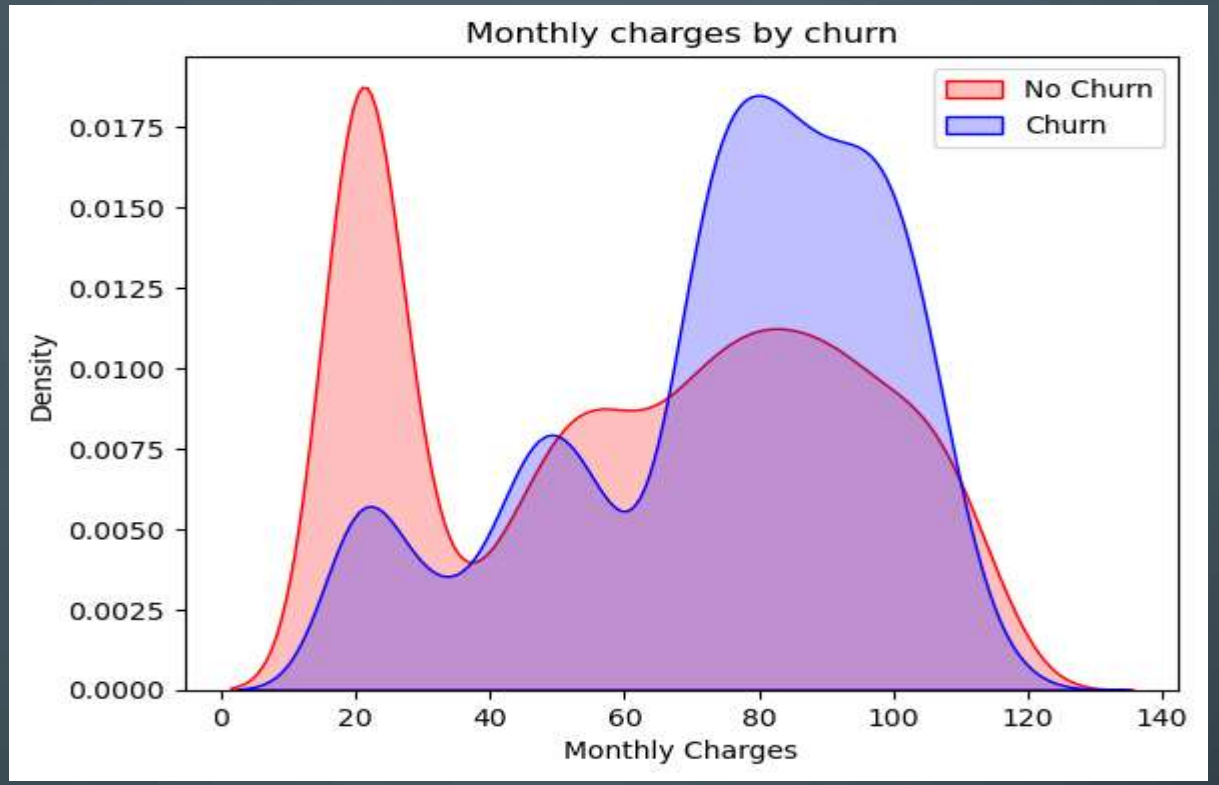
FINDINGS:

Customer's having monthly contracts are highest churners



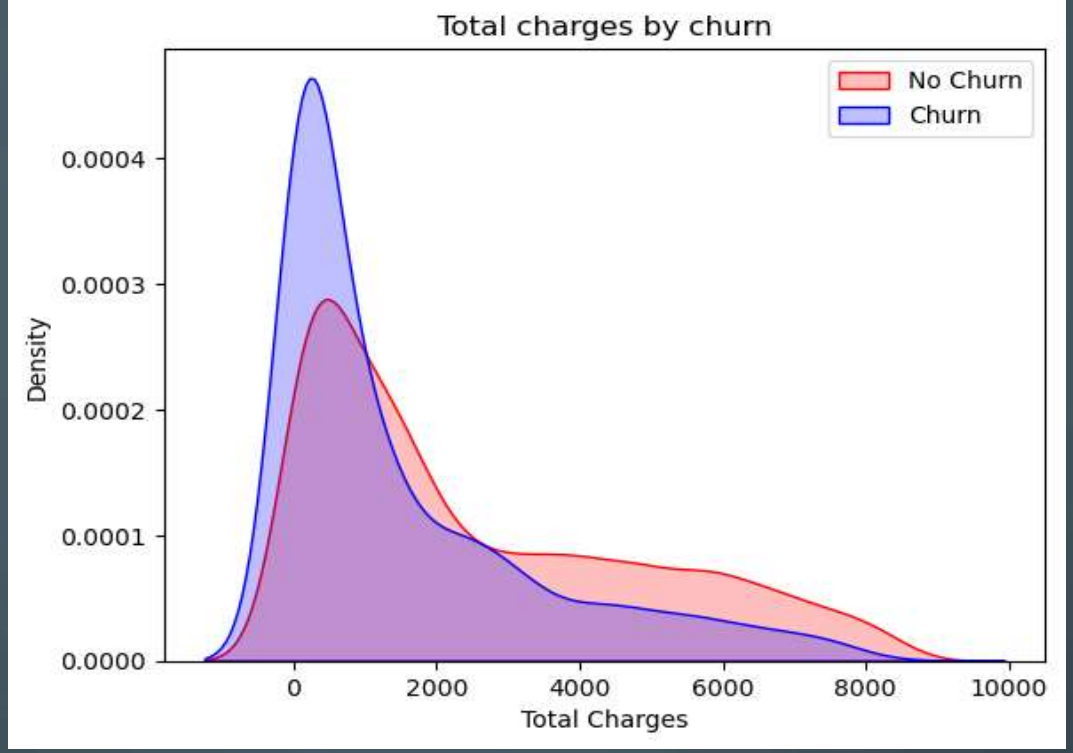
FINDINGS:

Customer's who are with company for a year or less than a year are more likely to churn



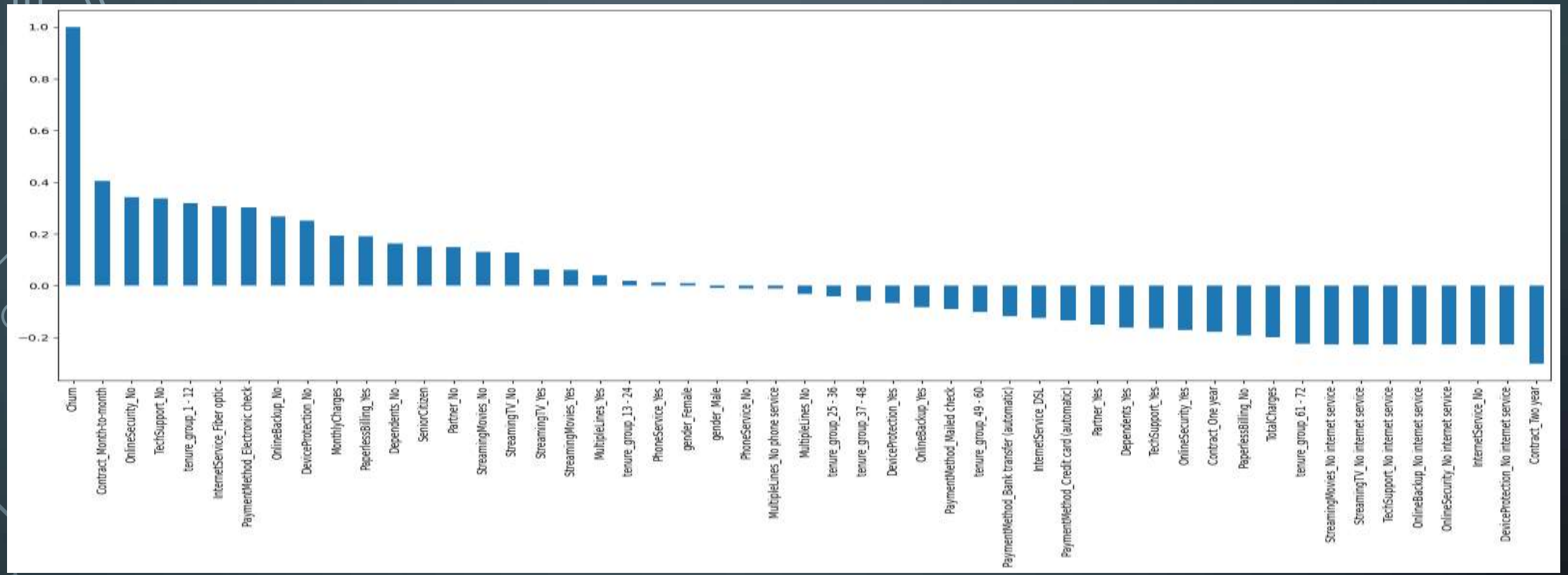
FINDINGS:

As the monthly charge increases churn rate is also increasing



FINDINGS:

- Surprising insight - as we can see higher churn at lower total charges
- However, all these 3 factors viz higher monthly charge, lower tenure and lower total charge are linked to high churn.



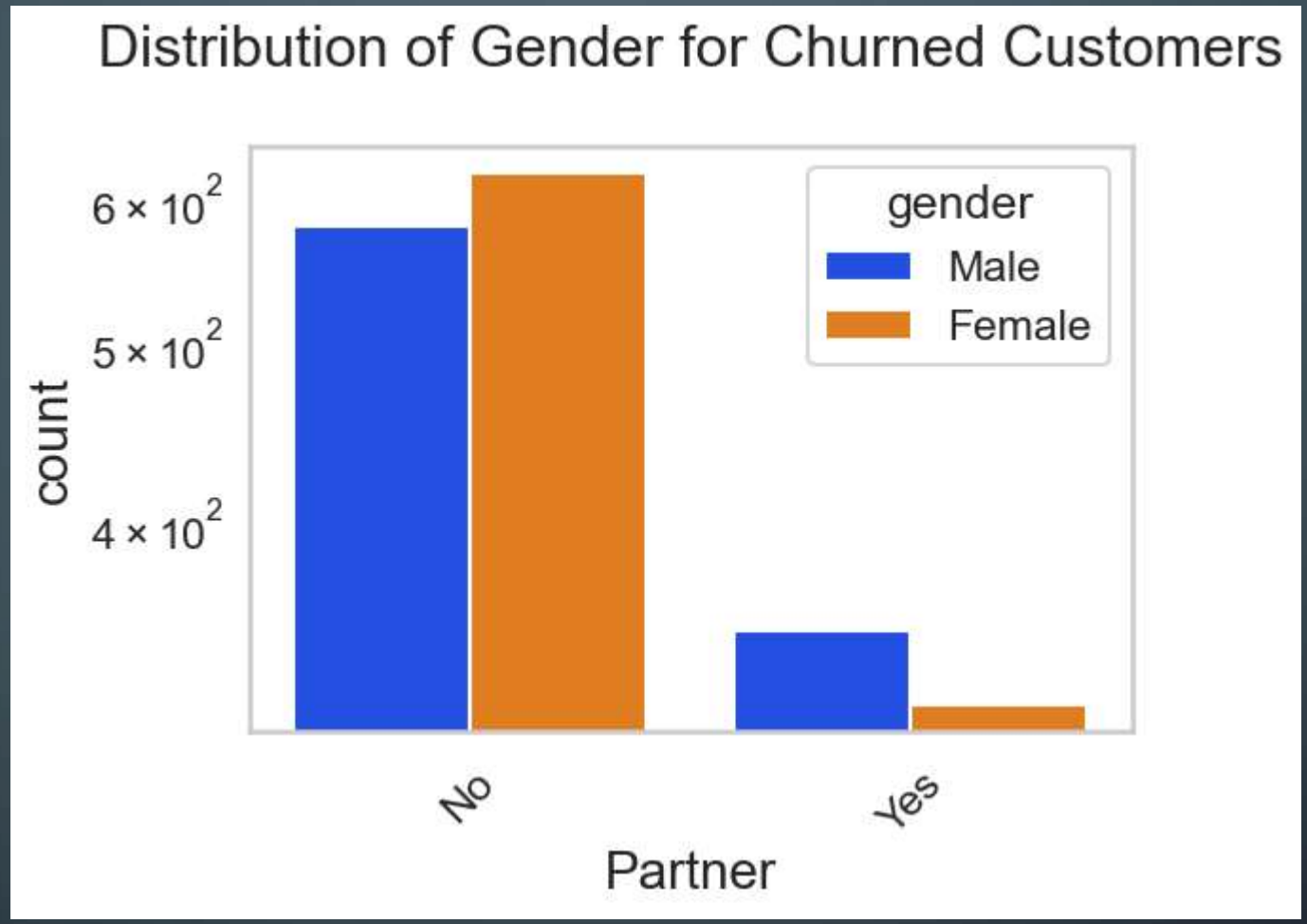
FINDINGS:

- HIGH churn seen in case of monthly contracts, no online security, no tech support, first year of subscription and fiber optics internet

LOW churn is seen in case of long-term contracts, subscriptions without internet service and the customers engaged for 5+ years

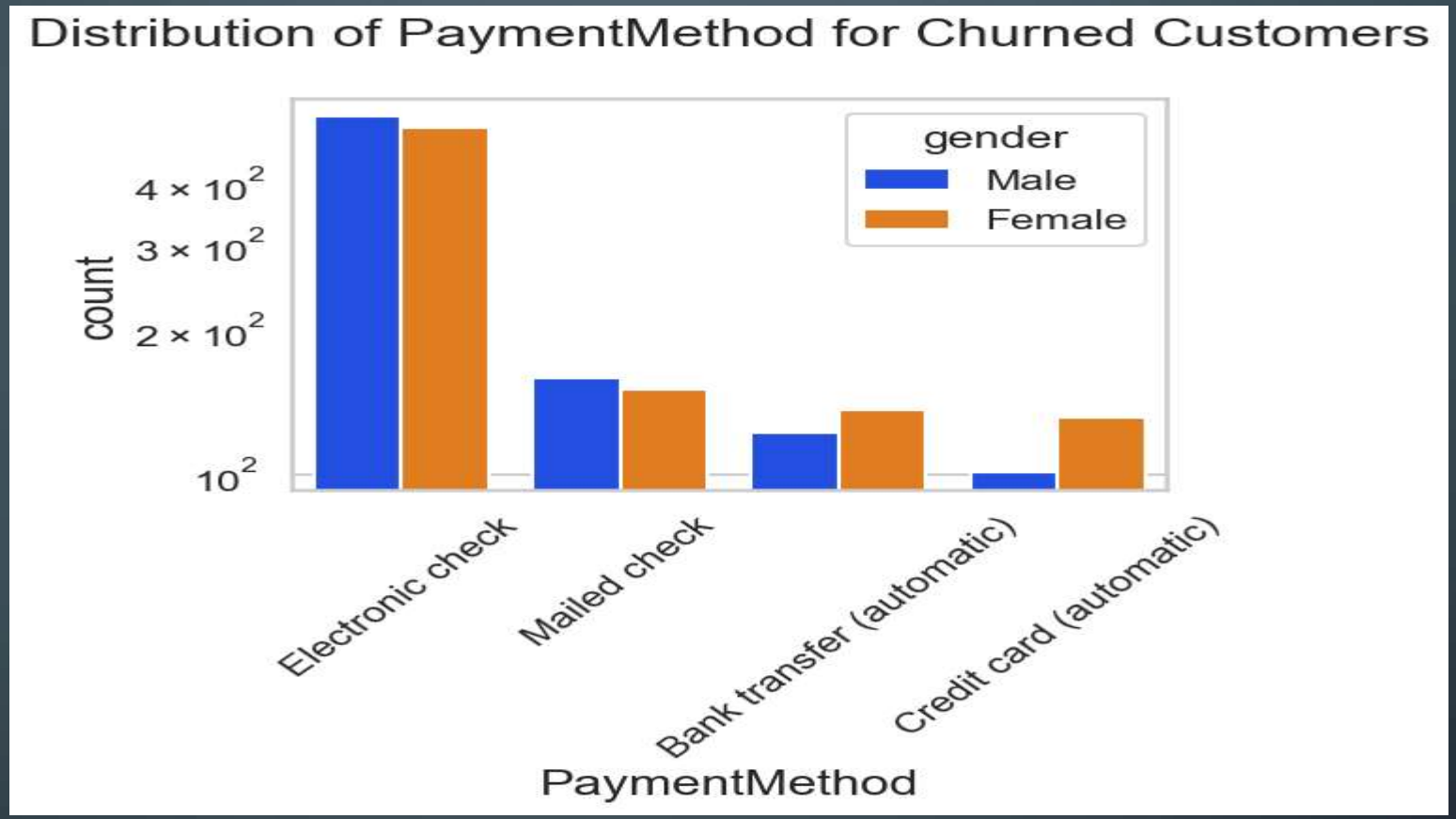
Factors like availability of phone service and no of multiple lines have almost NO impact on churn

BIVARIATE ANALYSIS



FINDINGS:

Female customers with no partner are more likely to churn



FINDINGS:

Female customers who are paying via credit card are more likely to churn than male customers

Final Thoughts

- Customers using electronic check medium are the highest churners.
- Contract type - monthly customers are more likely to churn because of no contract terms, as they are free to go customers.
- Customers having no online security, no tech support category are high churners.
- Non senior citizens are high churners in numbers but if we consider percentage wise then senior citizens are high churners.
- Female with no partner are more likely to churn.
- Monthly charges and total charges are positively correlated.
- Churn is high when monthly charges are high.

Recommendations

- Based on analysis , we recommend following actions
- Improve the following services for customer satisfaction - device protection , online backup and tech support.
- Offer competitive prices for monthly contracts , try to navigate monthly users to yearly contracts by offering them better deals.
- Offer discounts to females and senior citizens.
- Take timely feedback and aim for providing efficient, reliable, and far-reaching network coverage.

THANK YOU