

CUSTOMER CHURN EDA

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BUSINESS UNDERSTANDING & OVERVIEW

An Exploratory Data Analysis was performed on the Customer Churn Dataset to determine what actionable insights can be extracted from the data in order to determine the plan of action to be used by the Vodaphone Ltd to retain their customers.

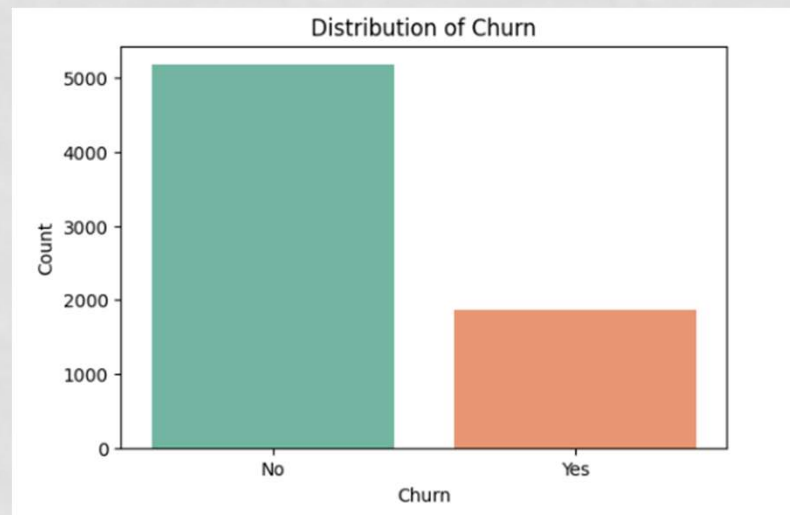
UNDERSTANDING THE DATA

TARGET VARIABLE

- The target variable of this dataset is customer churn

Findings

- The target variable, was imbalanced in this dataset. Churned customers only represent 26% of the data.



MISSING DATA

- There was minimal missing data in the total charges column of the dataset. Since the proportion of missing data in this column was only 0.2%, the missing data was replaced with the mean value of total charges.

DATA FINDINGS

UNIVARIATE ANALYSIS

- There was no significant difference in churn rates between men and women.
- Senior citizens were more likely to churn.
- Customers that do not have a partner were more likely to churn as compared to customers with a partner.
- Customers without dependent were more likely to churn versus customers with dependents.
- Customers with fibre optic internet service were more likely to churn as compared to DSL and no internet service.

UNIVARIATE ANALYSIS CONT'D

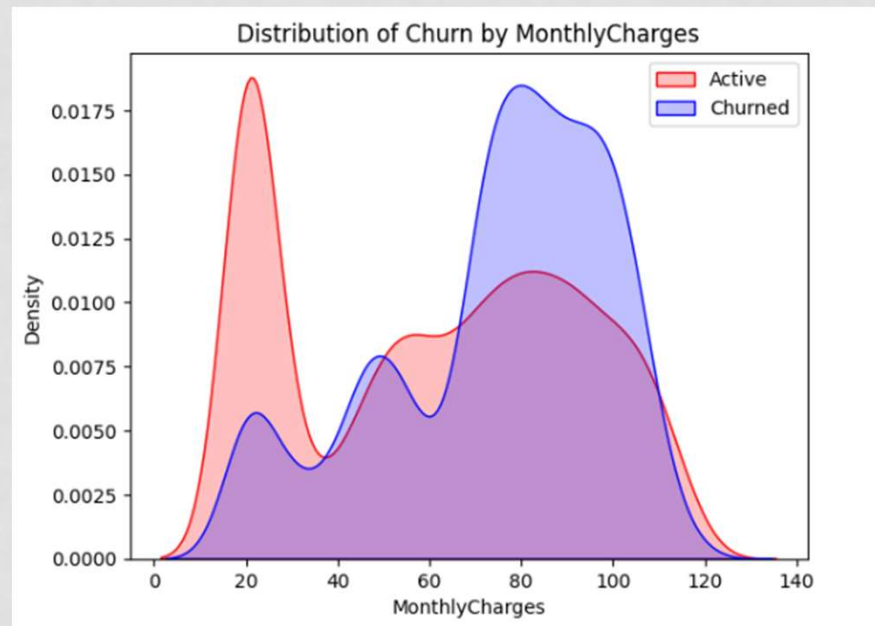
- Customers with no online security are more likely to churn as compared to customers with online security or internet service.
- Customers with no online backup were more likely to churn as compared to those that have it or no internet service.
- Customers with no device protection were more likely to churn than those that have device protection.
- Customers with no Tech Support were more likely to churn than those that have Tech Support. Streaming tv - Customers with no streaming tv were more likely to churn.
- Customers with a month to month contract were more likely to churn than customers with a one year or two year contract.

UNIVARIATE ANALYSIS CONT'D

- Customers with paperless billing were more likely to churn than those that did not.
- Customers that had electronic checks as their payment method were more likely to churn than customers who used other methods of payment.
- Customers with a tenure that is lower were more likely to churn versus customers with a higher tenure.

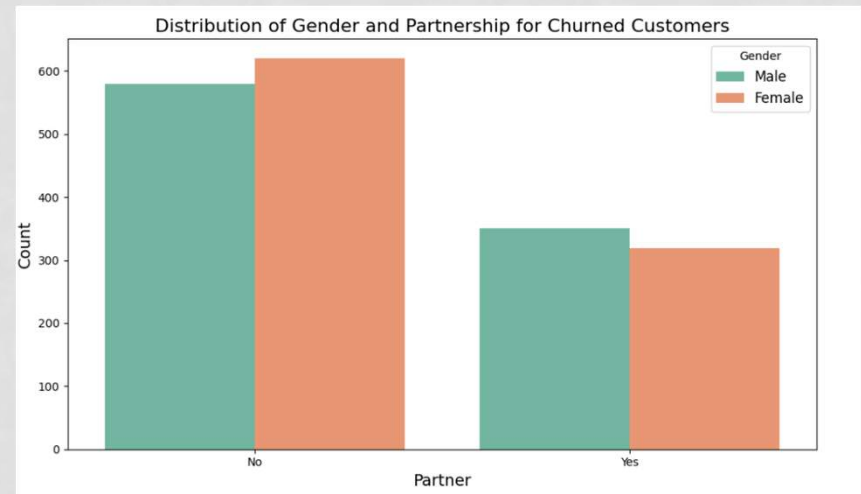
UNIVARIATE ANALYSIS CONT'D

- It was observed that a lower tenure was associated with a higher churn rate
- Higher total charges had a higher churn rate
- Higher monthly charges had a higher churn rate



BIVARIATE ANALYSIS

- Women that had no partner were more likely to churn, while men that had a partner were slightly more likely to churn.
- Men that used electronic check as a payment method were more likely to churn than women
- Men with no tech support were slightly more likely to churn than women that had no tech support, while women that had tech support were more likely to churn than compared to men that had tech support.
- Women in a month to month contract were more likely to churn than men, while men that were in a one year contract were more likely to churn than women.



FINAL THOUGHTS

- This exploratory data analysis showed that most customers were likely to churn if there was less friction involved with them changing service providers i.e. month to month billing, paperless billing, electronic check payment, low tenure, no tech support, etc.