

Telecom Churn Final Report

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Python for Business Analytics
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Introduction:

TeleNet, a telecommunications company, is analyzing customer data to uncover what is causing customer churn. While this analysis will help identify reasons why their customers are leaving the company, it can also provide opportunities for improvement to increase customer retention.

The goal of the analysis is to provide data back solutions and opportunities to improve the business and retain customers. The key insights that were revealed through the analysis are as follows:

- TeleNet is losing most customers to competitors.
 - Competitors made better offers.
- The churn rate is high in customers who have Offer E.
- On average, customers who left TeleNet paid more monthly than customers who stayed with TeleNet.
- The churn rate is high in customers who did not have any referrals.
- The churn rate is the highest in San Diego.

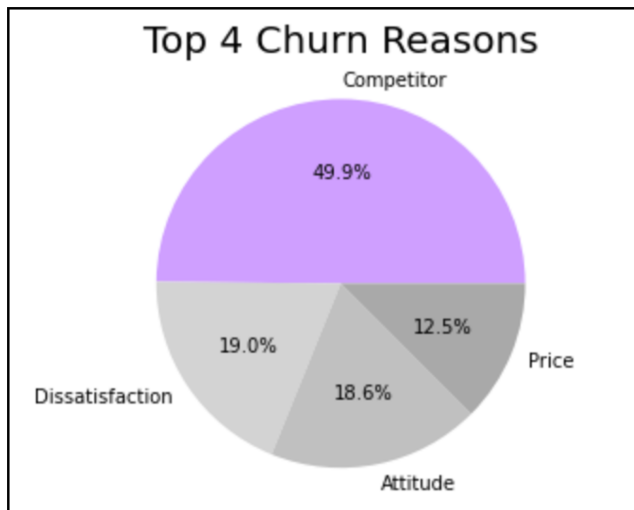
Cleaning the Data:

Before beginning the analysis, we cleaned our data. We started this process by merging the two data sets to be able to view the population according to zip codes within the same dataset.

There were not any missing values that occurred in this data set however, we removed rows where the customer left TeleNet because they are deceased. This does not provide any valuable insights as they did not leave TeleNet by choice.

Churn Reason:

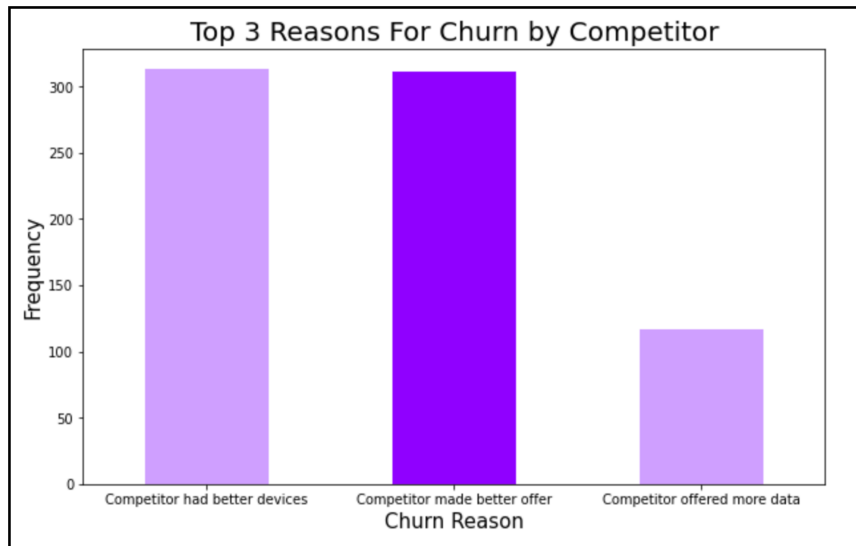
There are many reasons why TeleNet customers churned but the top 4 reasons for the churn were:



- Competitor (49.9%)
- Price (12.5%)
- Attitude (18.6%)
- Dissatisfaction (19.0%)

The reason that was behind the highest percentage of customer churn with 49.9% was Competitors. Because this pie chart highlights this category, it was important to look into it further.

Reasons Why Customers Choose a Competitor:



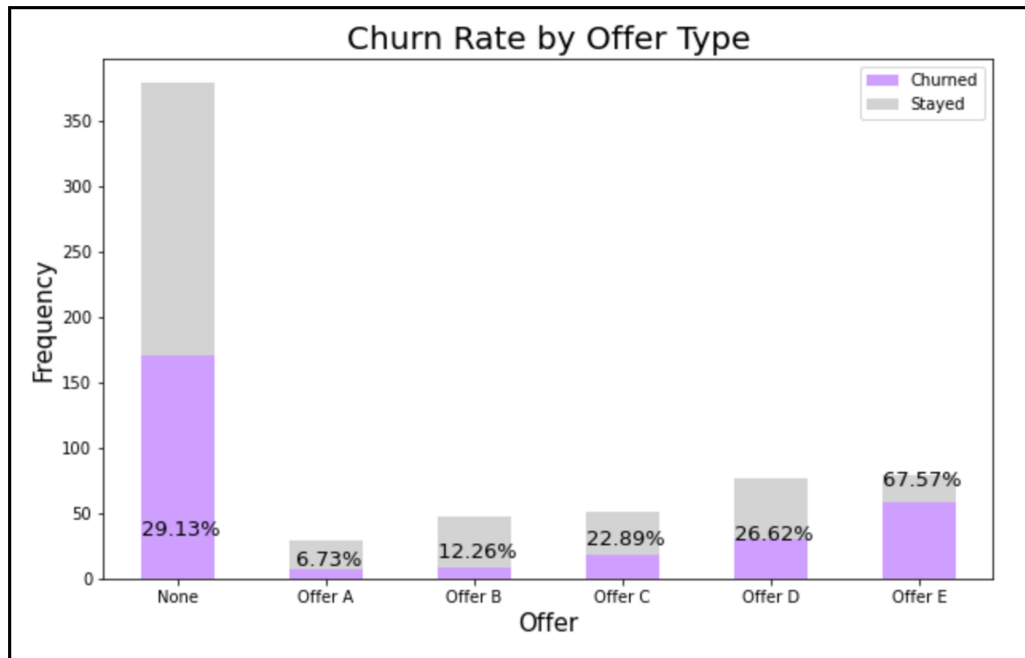
In this graph above, we looked at the specific reasons why the customers left TeleNet for a Competitor and the

The top 3 Reasons were:

- Competitors had better devices
- Competitors made a better offer
- Competitors offered more data

Because we are not able to look into the devices further with the data that we have, we looked into the offers and how they affected customer retention because this was one of the top reasons why customers left Telenet.

Churn By Different Offers:

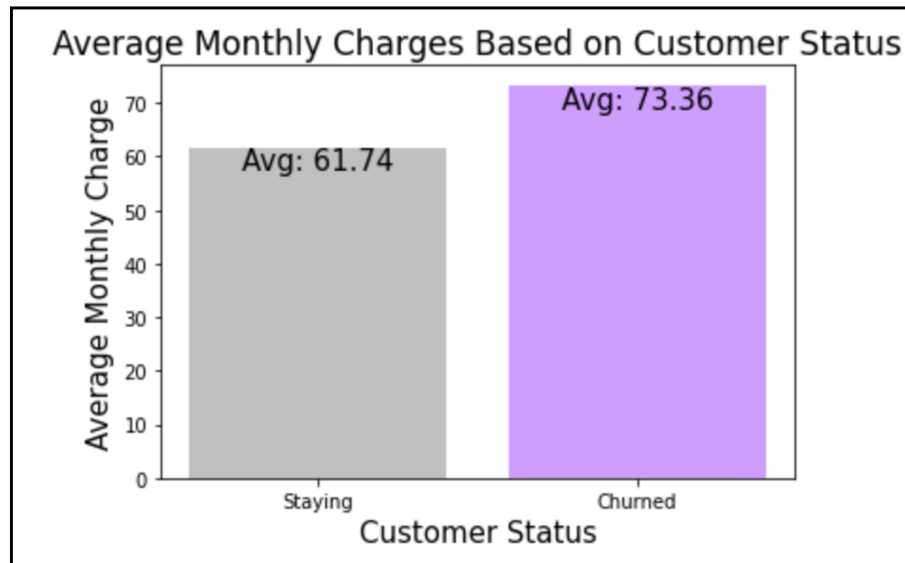


The customer offers provided important insights into the churn among customers.

In this bar graph, we show each offer type that was available and how many customers who were in that plan churned or stayed. We also show the churn rate that occurs according to each Offer type.

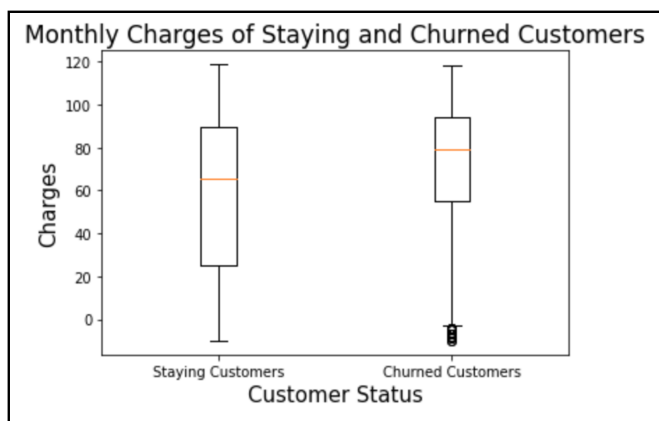
When the customers used Offer E, the number of customers that churned was the highest relative to the other offers. When customers used Offer A, the churn rate was the lowest.

Average Monthly Charges:



Next, we analyzed the average monthly charges for customers who stayed or churned and we see that customers who left paid more in Monthly Charges than customers who stayed with TeleNet.

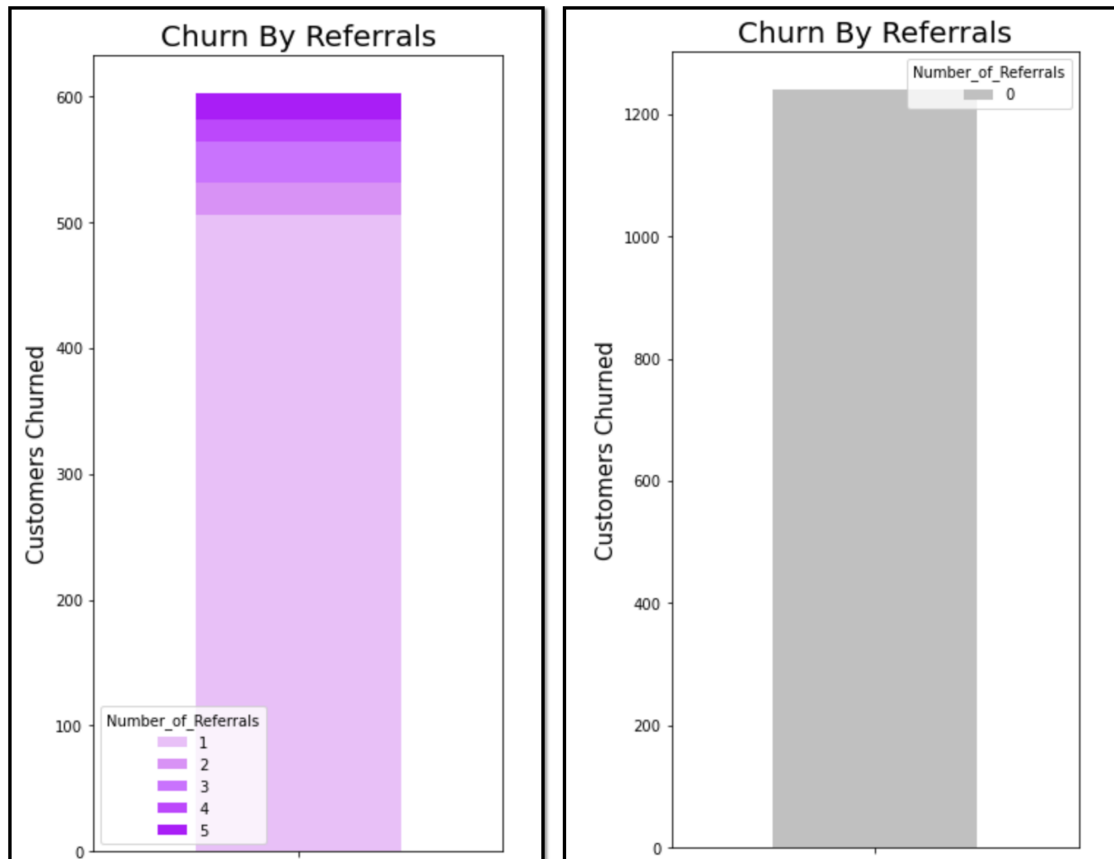
- For customers who stayed with TeleNet, we see that they paid \$61.74 per month on average.
- For customers who churned, they paid \$73.36 per month on average.



This box plot allows us to take a closer look at the data and analysis we performed for the average monthly charges.

For staying customers, we see that the middle 50% was more spread out than the churned customer data. This shows us very clearly that staying customers are often paying less than those who leave TeleNet.

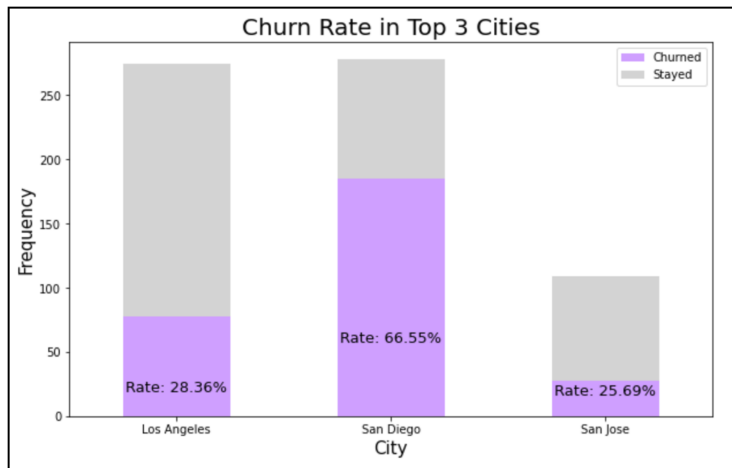
Churned Customers By Referral:



The churn rate when customers had 0 Referrals was 36% but when customers had 5 referrals the churn rate was 9.05%. The rate also decreased as the number of referrals increased.

The number of customers who churned with referrals was almost half the number of churned customers who did not have any referrals.

Churn Rate By Location:



Next, we analyzed the customers who churned and the customers who stayed in the top 3 populated cities.

By analyzing the churned vs staying customers we can see the churn rate depending on the location.

The highest churn rate is in San Diego while the lowest rate is in San Jose.

Solutions and Opportunities:

Through this analysis, TeleNet can decrease the churn rate by focusing on Offer A as it had the lowest churn rate but doing the opposite for Offer E as it has the highest churn rate.

There are opportunities to do further research to lower the churn rate in:

- Monthly Payments
- Referrals
- Quality of services
- Customer Location