Telecom Churn Comapny Report

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Python for Business Analysts
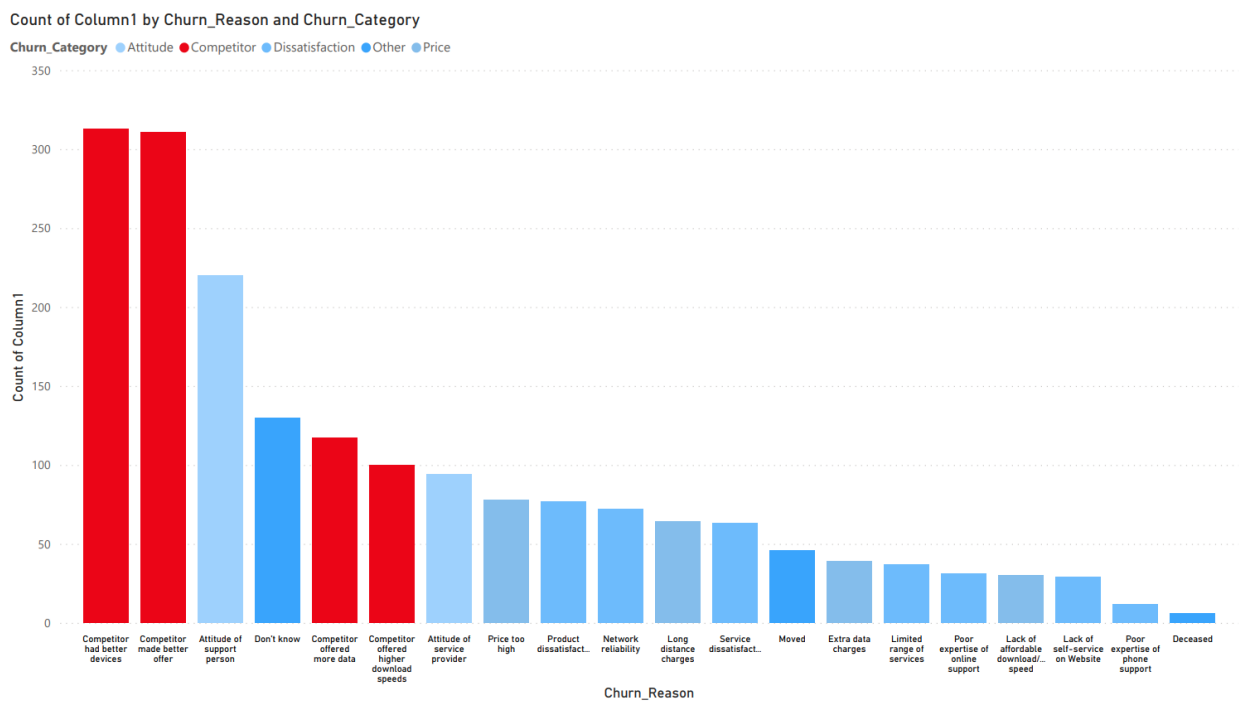
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Introduction:

In the telecom industry one has to consider the competitiveness in this field and one challenge that is commonly faced by companies is customer churn. It is important that companies are able to get on top of this issue, however, despite this being a common issue companies don't take action as soon as it happens which will lead to significant loss of revenue and market share for the company.

The following report will suggest a few solutions for the company that we have come up with through intensive analysis of the data that was provided. Some things we need to consider before going into the solutions are;

- The plans that the company has to offer

- Which are the most and least popular plans

- Which offer has the most tenure and which offer has the most churn rate

- Age of the customers joining

- Reason for churn

- Location of customers

- Services of each plan and the pattern of churn for each service and plan

- Pricing of plan

Overall, the main focus of the report is to provide practical solutions that the company can look into implementing to improve the retention of customers.

Churn Reason:

Count of Column1 by Churn_Reason and Churn_Category

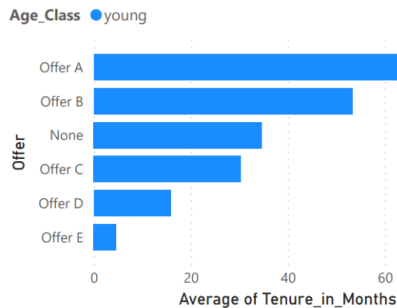**Churn_Category** ● Attitude ● Competitor ● Dissatisfaction ● Other ● Price

Before looking into the data of our consumers we wanted to look at what was the leading factor of why customers were leaving in the first place. From this graph we can see competitors were a leading reason for why our customers were leaving. With the top two reasons being "Competitor had better devices" and "Competitor made better offer". To look into this further we observed if the customers that left had a basic package or an offer with us.
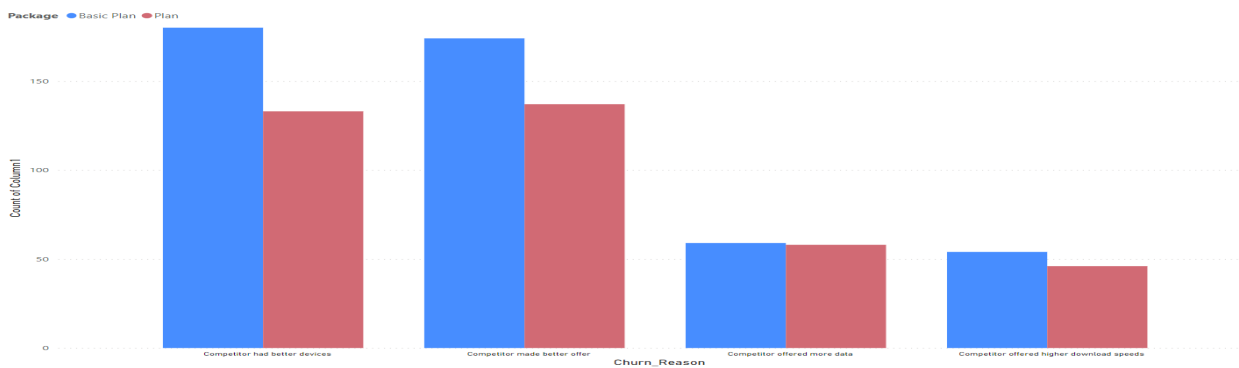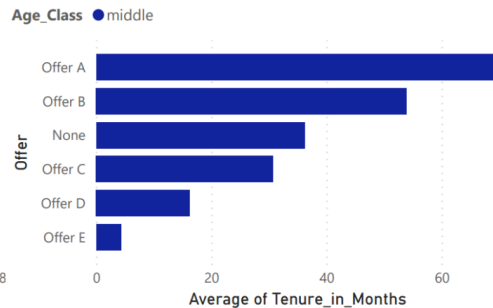
From this graph you can see that the majority of the customers leaving for a competitor offer, did not have a plan with our company (depicted in light blue). There was a significant difference between people who left with an offer and those without for churn reasons, "competitor had better "and "competitor had a better offer". Customers were more likely to leave our company for a competitor if they did not have a plan for those two leading churn reasons.
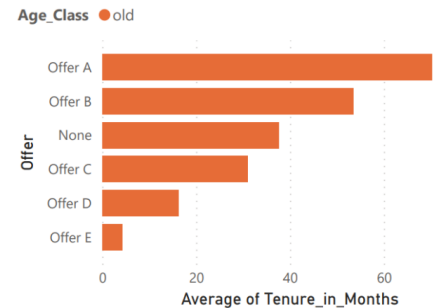
Age of Customers:

Average Months Stayed of Current Clients (x<30))
Age_Class ● young

Offers (top to bottom): Offer A, Offer B, None, Offer C, Offer D, Offer E
X-axis: Average of Tenure_in_Months (0 to 60)

Average Months Stayed of Current Clients (30<x>50)
Age_Class ● middle

Offers (top to bottom): Offer A, Offer B, None, Offer C, Offer D, Offer E
X-axis: Average of Tenure_in_Months (0 to 60)

Average Months Stayed of Current Clients (x>50)
Age_Class ● old

Offers (top to bottom): Offer A, Offer B, None, Offer C, Offer D, Offer E
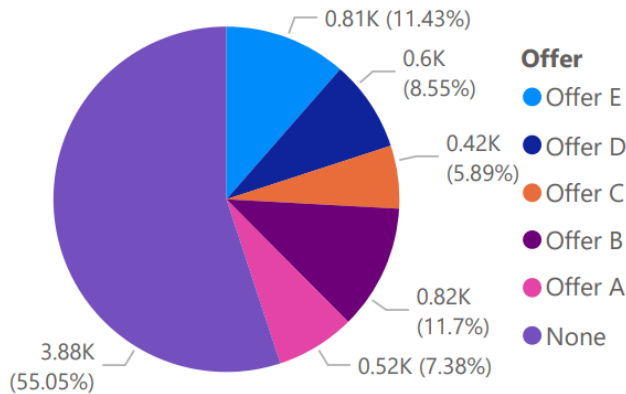X-axis: Average of Tenure_in_Months (0 to 60)

We wanted to see how age groups played a factor in churn. We classified ages into 3 groups , Young (less than 30), Middle (Between 30 and 50), and Old (50 and above). We arranged our age groups in this order considering in what age range would people be in school, settled in life, etc.

We have determined anyone less then 30 would be students or people who just finished school and looking to start their life. People in between age 30 to 50 are normally people who are well settled in their life with family and jobs. Finally people age over 50 are people ready for retirement and well into their life.
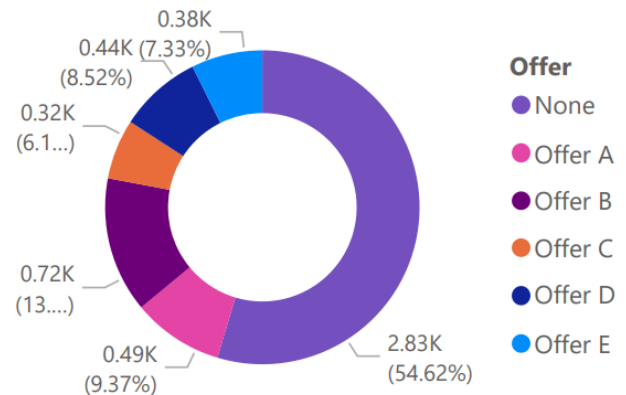
From this data we discovered that age did not play much of a factor for churn but we noticed the pattern of Offer A having the highest retention as well as the lowest churn rate. We decided to study this further. As we go further into analyzing the plans that the company has to offer we can see that Offer A does play a role in the company's retention rate.

Offer Breakdown:

Offer Breakdown

0.81K (11.43%)

0.6K (8.55%)

Offer
- ● Offer E
- ● Offer D
- ● Offer C
- ● Offer B
- ● Offer A
- ● None

0.42K (5.89%)

0.82K (11.7%)

3.88K (55.05%)

0.52K (7.38%)

Join/Stayed by Offer

0.38K

0.44K (7.33%)

(8.52%)

0.32K (6.1...)

Offer
- ● None
- ● Offer A
- ● Offer B
- ● Offer C
- ● Offer D
- ● Offer E

0.72K (13....)

0.49K (9.37%)

2.83K (54.62%)

Analyzing the data, it is evident that over half of the individuals join our company as consumers without selecting a specific plan. Following this, the plan with the highest adoption rate is Offer B, closely followed by Offer E, which captures a slightly lower percentage of new customers.

However, upon examining the subsequent pie chart, which focuses on the number of individuals who both joined and remained with the company in the plan they initially selected, a distinct trend emerges. Contrasting the least popular plan, Offer A, with the most popular Offer A, despite its lower initial adoption rate. Conversely, a greater number of individuals have chosen to leave the company after joining with Offer E, despite it being one of the top plans in terms of customer acquisition.

These observations, based on the data, highlight a noteworthy disparity between the plans in terms of customer retention.

Average Tenure of Months:

Average of Tenure_in_Months by Offer and Customer_Status

Customer_Status ● Churned ● Stayed
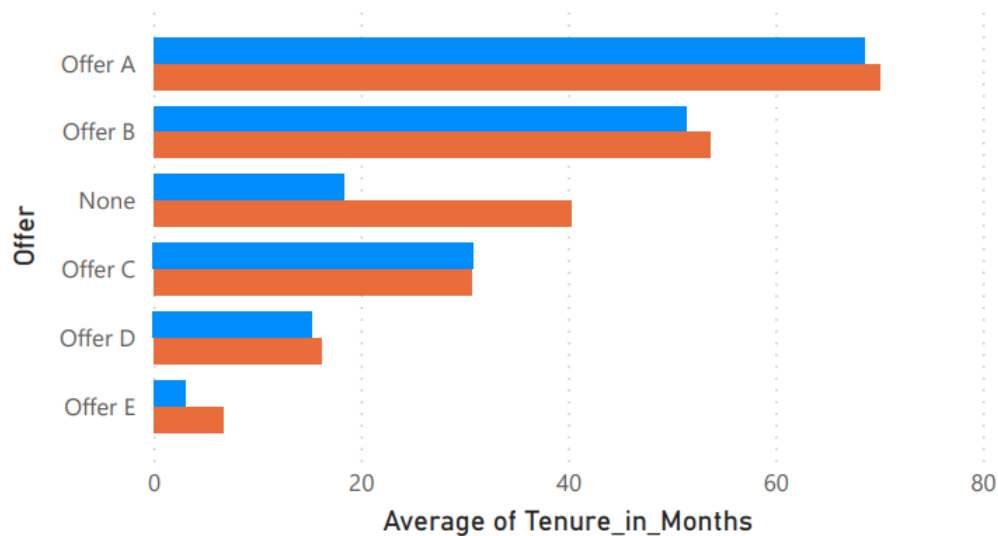
In this graph we are given a side by side comparison of the churn and retention rate. After analyzing the breakdown of customer offers, a clear pattern emerges indicating that a significant portion of customers join without a specific plan in mind. Among those who do choose a plan, Plan B and E are the most popular choices, while Plans A and C are the least favored.

Upon examining the tenure data for each plan, it becomes evident that despite Plan A being the least popular in terms of customer acquisition, it exhibits the highest average tenure compared to the other plans. This observation suggests that customers who opt for Plan A tend to stay with the company for a longer duration.

In contrast, even though Plan E garners considerable interests and is one of the most frequently chosen options, it experiences the lowest retention rate. These findings indicate that while Plan E initially attracts a large number of customers, they are less likely to remain with the company over an extended period.

# Offer Breakdown by Customer Status:
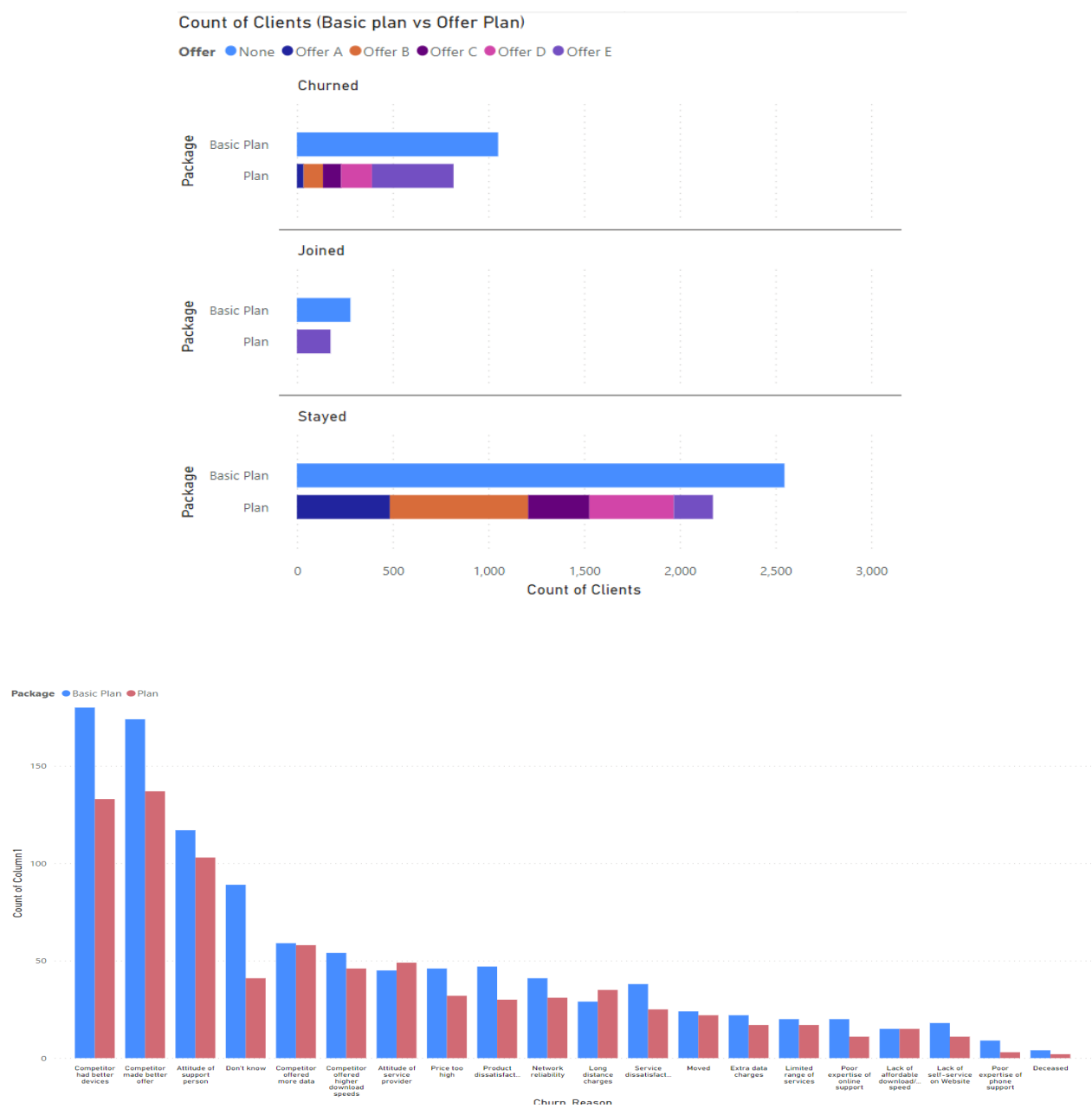
We discovered that if we combine all of the clients who have an offer, they stack up less than our clients that are with the company without an offer (Without an offer, or none , is represented through Basic Plan)

We discovered that clients that bought a plan with us are less likely to leave the company. From this stacked column graph we can see that those without a plan are more likely to leave us. In the churn reason graph we can see that those without a plan are more likely to leave more in every single category except long distance charges.
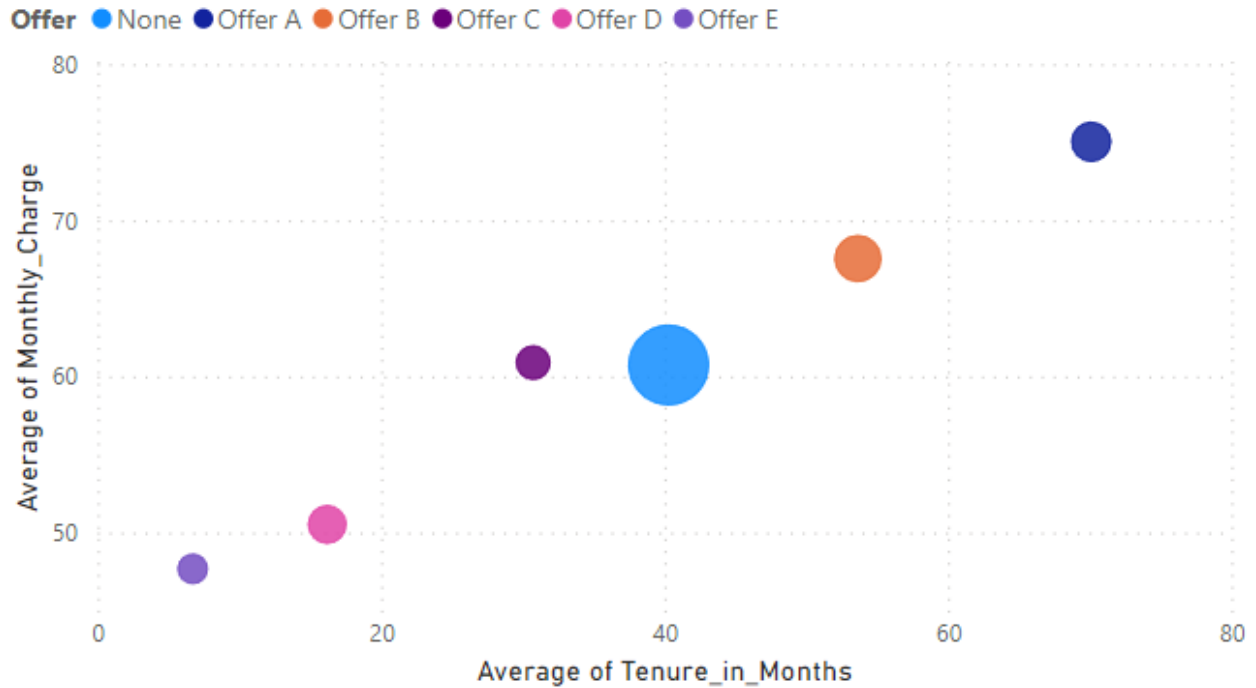
Monthly Charges:

Offers represented by Avg. Tenure of Months vs Avg. Monthly Charge
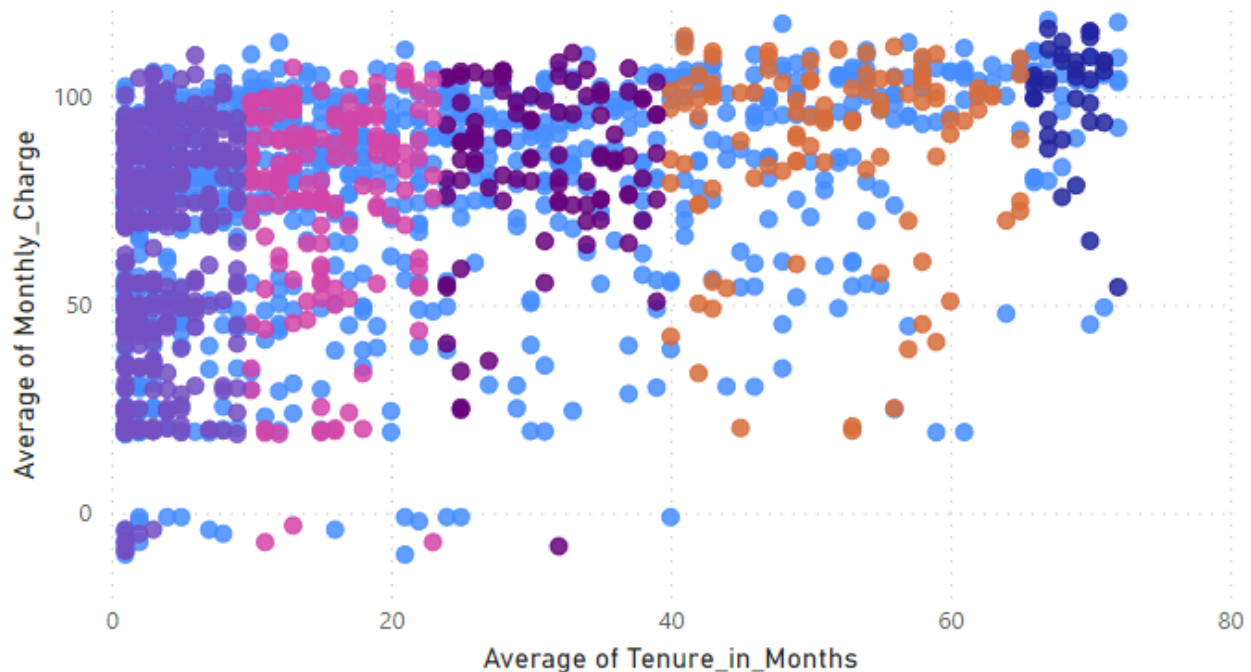
With the scatter graph above you can see that those without an offer, that had the basic package, are mostly clumped towards the left of the graph. This means that no matter the charge per month that these clients were paying they still left the company. This can also be seen with Offer E. On the other side of the graph you can see that there are few dark blue circles representing offer A and they are high up on the graph. This means that these clients are paying more per month but staying longer with the company. We can conclude from this that despite having higher charges, meeting the expectations and needs of the clients, people are willing to pay the high price for the high quality we provide with Offer A.

**Offer** ● None ● Offer A ● Offer B ● Offer C ● Offer D ● Offer E

This graph shows our clients with a customer status of stayed. Here we can have a clear depiction of the average monthly charge for our clients based on certain offers (shown on the Y axis). We also have on the x axis the average tenure of months. The size of each circle represents the total number of clients with that specific offer, the bigger the circle the more clients with that offer.

In this graph we can clearly see that Offer E is one of our weaker offers, with only 204 clients and an average tenure of 6.7 months, costing an average of 47 dollars a month. Despite having the lowest price it has the weakest retention of the rest of the offers. Clients without an offer/basic plan/ none has the biggest circle meaning it has the most clients. Those without the plan rank 3rd in tenure and average monthly charge. The dark blue circle in the top right corner shows offer A. We can see that it has the highest retention out of all plans despite being the most expensive, meaning people are paying premium money for premium quality. We can also see that it is one of the smaller circles meaning that it doesn't have a lot of clients.

Location:
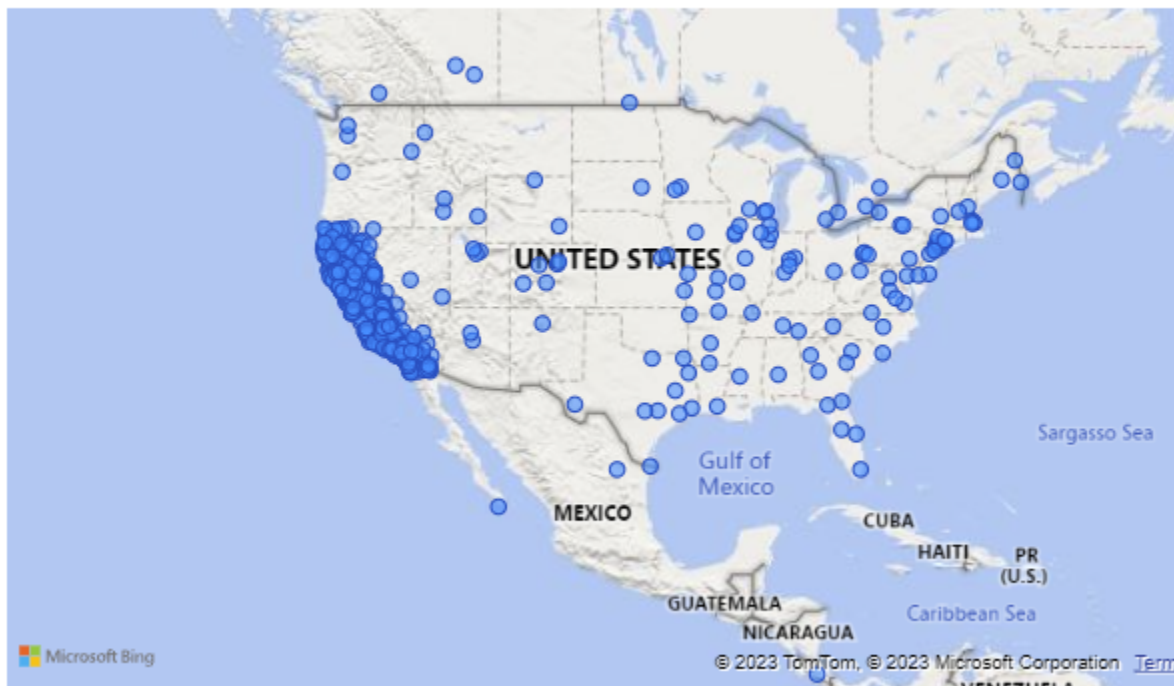
After noticing that the plans the company had to offer had a factor in the churn rate we wanted to look into how location played a role in the churn of customers within the company. In this map of the United States we can see a few scattered blue dots indicating where there is churn and as we can see it is clear that the most customer churn occurs within California. From our analysis we saw that San Diego was the city with the highest churn.

Solutions

After conducting extensive research and performing thorough data analysis, several potential solutions have emerged to address the observed challenges and opportunities within our company. These solutions are based on a data-driven approach, ensuring that they are grounded in actionable insights derived from the analysis of customer behavior and preferences.

Before delving into the proposed solutions, it is important to emphasize that these recommendations aim to enhance customer satisfaction, improve customer retention, and ultimately drive the growth and success of our company. By leveraging the power of the data at hand, we can now explore these potential strategies that have the potential to yield positive outcomes and address the identifies issues effectively.

With that in mind here are the following suggestions we have for the company:

- Consider focusing on pushing Plan A as the main plan of the company given how that it has shown positive results but is not marketed well enough.
- Consider what the competitors product has that makes them seem more of an ideal choice then what our company has to offer.

- Market the company in the California area, conduct market research and see what customers in California want and cater the company's plan options to what is demand to attract a larger audience in California.