CUSTOMER CHURN ANALYSIS

POWER BI ASSIGNMENT- 02

Submitted by:

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IEC COHORT 8 | Data Analytics

Introduction

Understanding Churn

Customer churn, often defined as the rate at which customers leave or discontinue services, is a critical metric reflecting customer dissatisfaction or migration to competitors. The company seeks to understand and address this challenge by delving into the data to uncover insights into why customers churn and the factors contributing to this phenomenon.

Objective

The objective of this report is to analyze customer churn in a telecommunications company using the provided dataset. We will create various visualizations and measures to gain insights into customer behavior, churn rate, and factors affecting churn. By understanding these aspects, we aim to identify trends and factors contributing to customer churn and propose recommendations to reduce churn and improve customer satisfaction.

Problem Statement

The company is facing a challenge of customer churn, impacting revenue and growth. Understanding the reasons for churn and identifying key demographic and consumption patterns will help in devising targeted strategies to retain customers.

Key Problems

1. Churn Rate and Segmentation:

- Determine the overall churn rate and variations across different customer segments, such as age groups, contract types, and usage patterns.

2. Reasons for Churn:

- Identify the primary reasons for customer churn and any discernible patterns or trends in these reasons.

3. Demographics and Churn:

- Assess how customer demographic data, such as age and contract type, influences churn rates, focusing on age groups and contract types that might be more prone to churn.

4. Service Usage Patterns:

- Investigate if specific service usage patterns, such as international plan usage, are correlated with higher churn rates.

5. Geographical Patterns:

- Analyze geographical patterns in churn rates, considering factors like state-wise or province-wise variations in churn.

Stakeholders

1. Chief Marketing Officer (CMO)

Objective: Lead the marketing strategies and initiatives of the company.

Benefit: Gain insights into churn patterns to tailor marketing campaigns, optimize customer acquisition, and improve customer engagement to reduce churn.

2. Head of Customer Service

Objective: Manage customer service operations and enhance customer experience.

Benefit: Analyze churn rates in relation to customer service calls to optimize customer service processes, reduce churn-related inquiries, and enhance customer satisfaction.

3. Head of Product Development

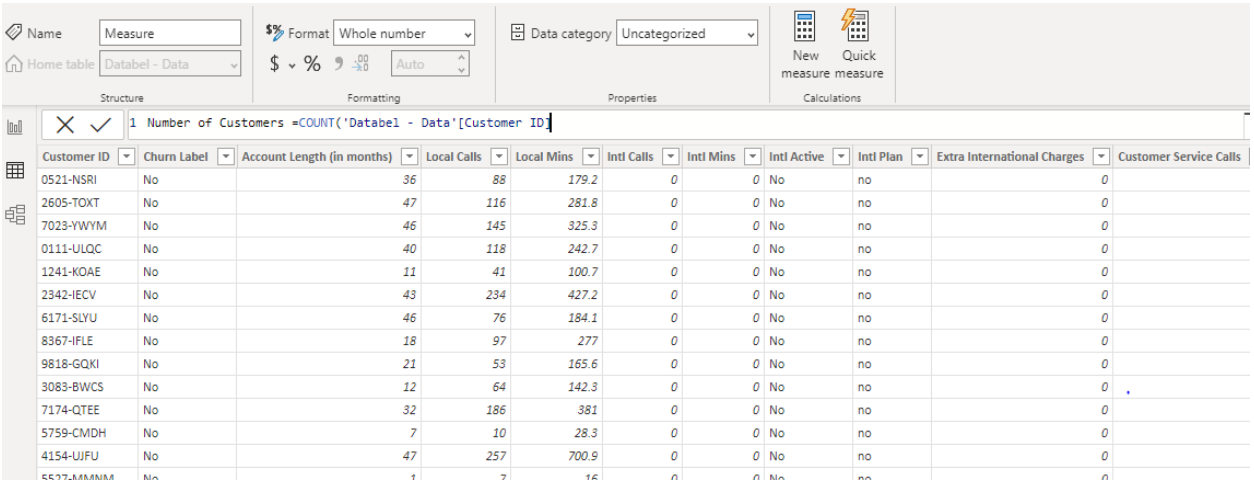
Objective: Lead the development and enhancement of company products and services.

Benefit: Utilize churn analysis to identify areas for product improvement, prioritize feature enhancements, and align product development with customer needs to reduce churn.

Guidelines and their Results

• Create two measures and name them

1. Number of Customers



Customer ID	Churn Label	Account Length (in months)	Local Calls	Local Mins	Intl Calls	Intl Mins	Intl Active	Intl Plan	Extra International Charges	Customer Service Calls
0521-NSRI	No	36	88	179.2	0	0	No	no	0	
2605-TOXT	No	47	116	281.8	0	0	No	no	0	
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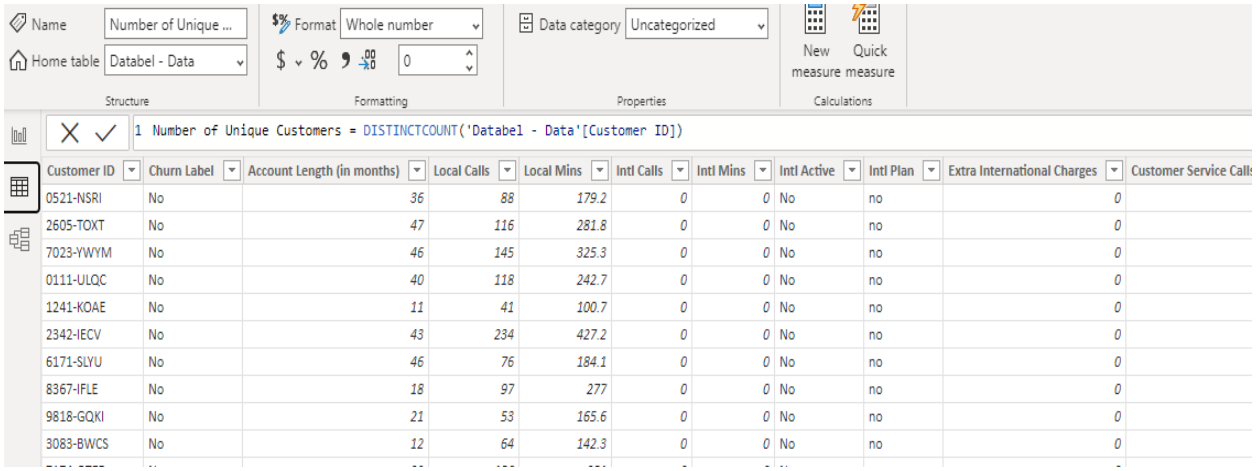
6171-SLYU	No	46	76	184.1	0	0	No	no	0	
8367-IFLE	No	18	97	277	0	0	No	no	0	
9818-GQKI	No	21	53	165.6	0	0	No	no	0	
3083-BWCS	No	12	64	142.3	0	0	No	no	0	
7174-QTEE	No	32	186	381	0	0	No	no	0	
5759-CMDH	No	7	10	28.3	0	0	No	no	0	
4154-UJFU	No	47	257	700.9	0	0	No	no	0	
5527-MMNM	No	1	7	16	0	0	No	no	0	

2. Number of Unique Customers



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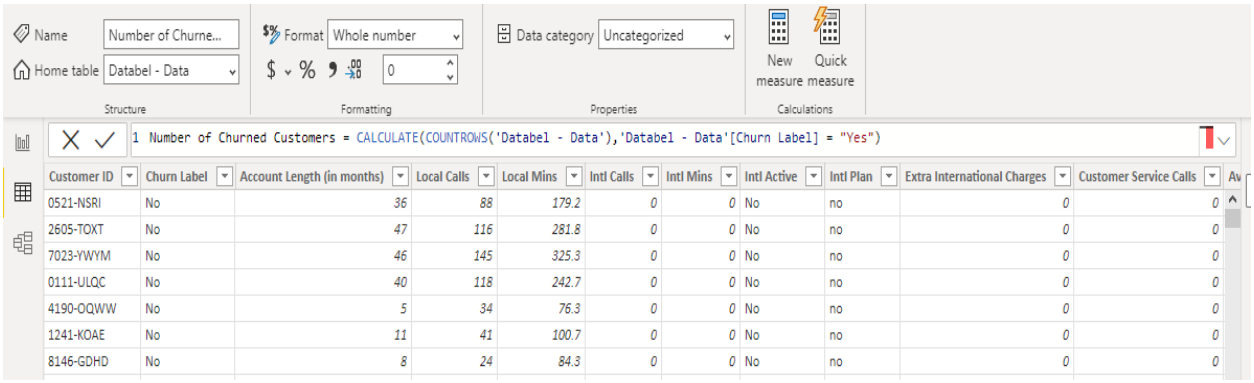
3083-BWCS	No	12	64	142.3	0	0	No	no	0	

Insight: The number of customers and the number of unique customers are 6687. That means all of the customers are unique.

• Create a measure of Number of Churned Customers



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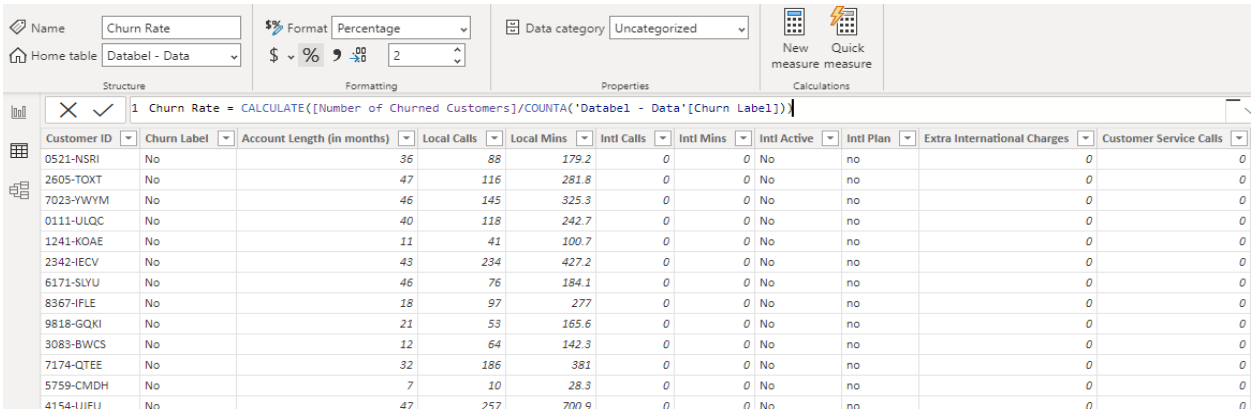
1241-KOAE	No	11	41	100.7	0	0	No	no	0	0	
8146-GDHD	No	8	24	84.3	0	0	No	no	0	0	

• Calculate the Churn Rate as percentage format



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• **Add the "Churn Rate" within a visualization and show it in the dashboard**

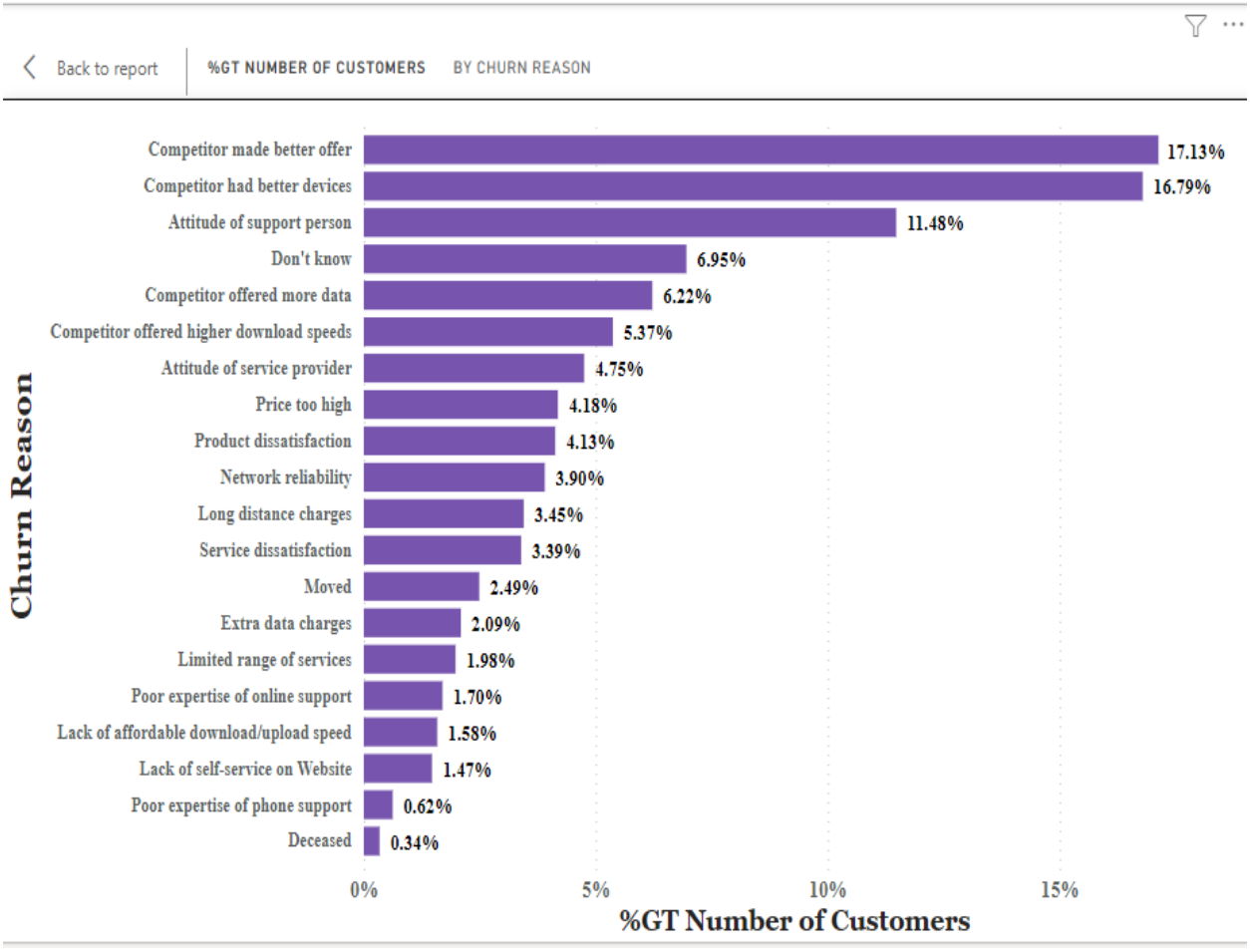
Insight: The number of churn customers are 1796, which is almost 28.86% of the total customers.

• **Add a bar chart with Number of Customers and Churn Reason, and**

• **Make sure to order the churn reason with descending order, and**

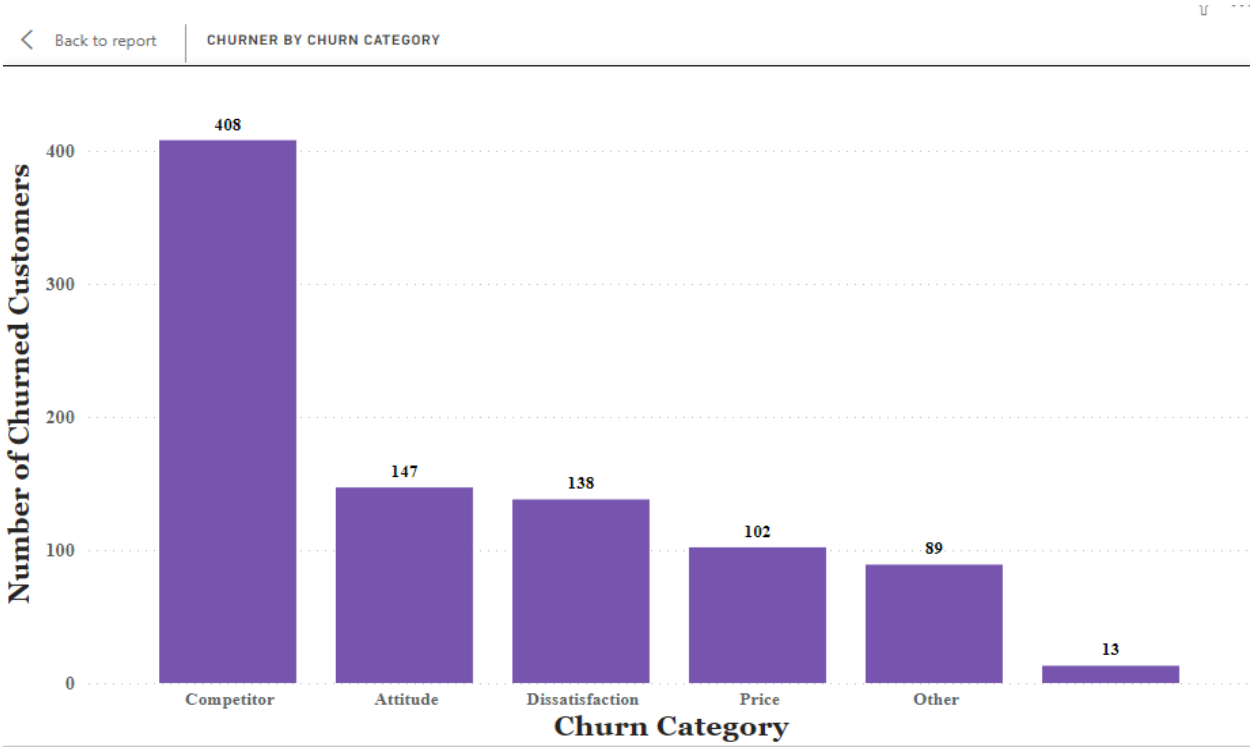
• **Show the number of customers as "Percent of grand total"**

Insight: The visualization highlights two primary churn drivers. The first is competitors offering more value in terms of better devices, increased data, and high-speed downloads. The second significant factor is the impact of support personnel attitude and overall service quality.



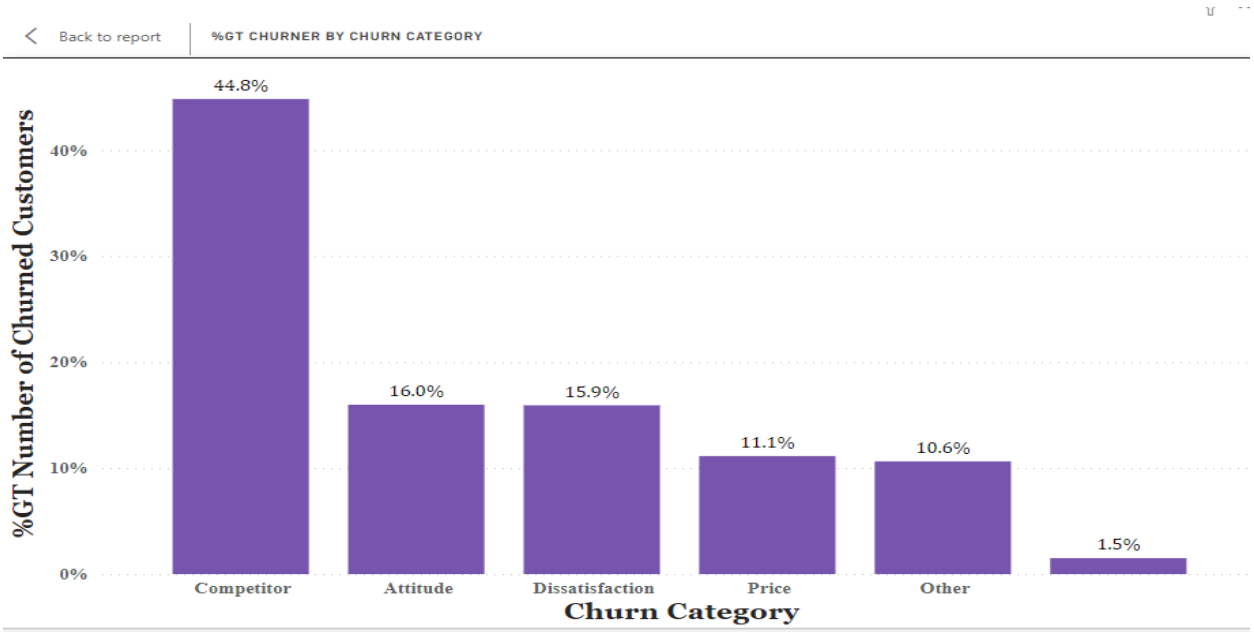
• Create a visualization of your choice for churner by churn category

Insight: The visual represents major churner's churn category is competitors which shows 805 customers churn due to competitor, then attitude and dissatisfaction shows 287 and 286 churn customers.



• Copy the visualization and show the percentage of all churn categories within the churn rate

Insight: The visual represents major churner's churn category is competitors which shows almost 45% of customers churn due to competitor, then attitude and dissatisfaction both shows 16% churn customers, 11% due to prices and the remaining 11-125 are others.

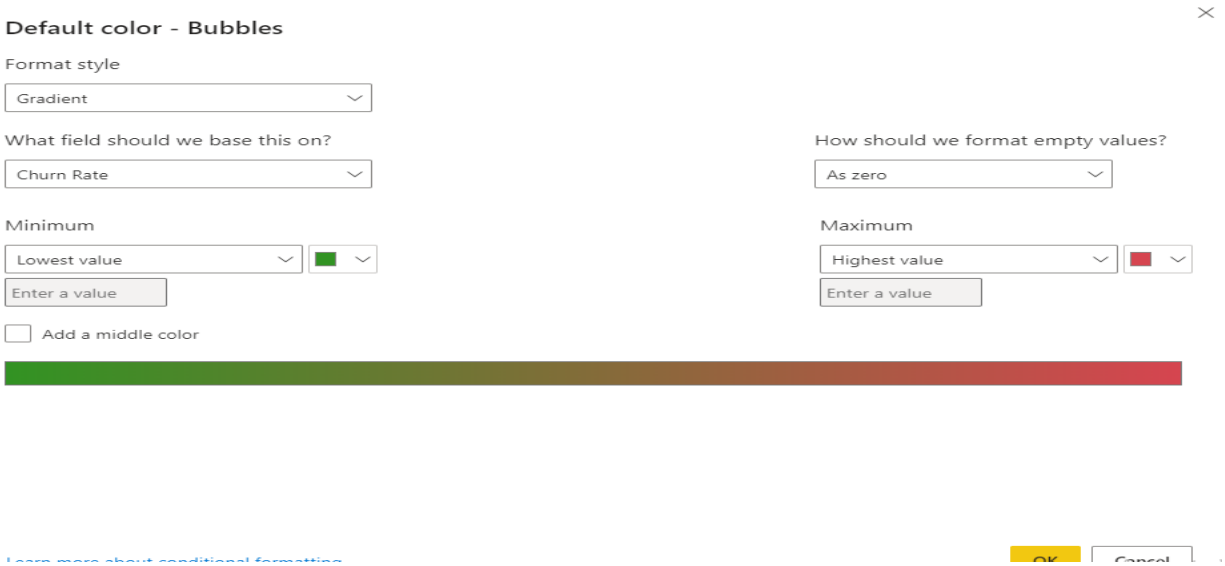


• Add a map visualization with the following details churn rate, number of customers and number

of churned customers by state

Insight: If we look, the majority customers are from North America. In this region, California (CA) stands out with the highest churn rate at 63.2%, accounting for 43 churned customers. Conversely, West Virginia (WV) exhibits the highest churn count at 213 customers, with a churn rate of 26.7%.

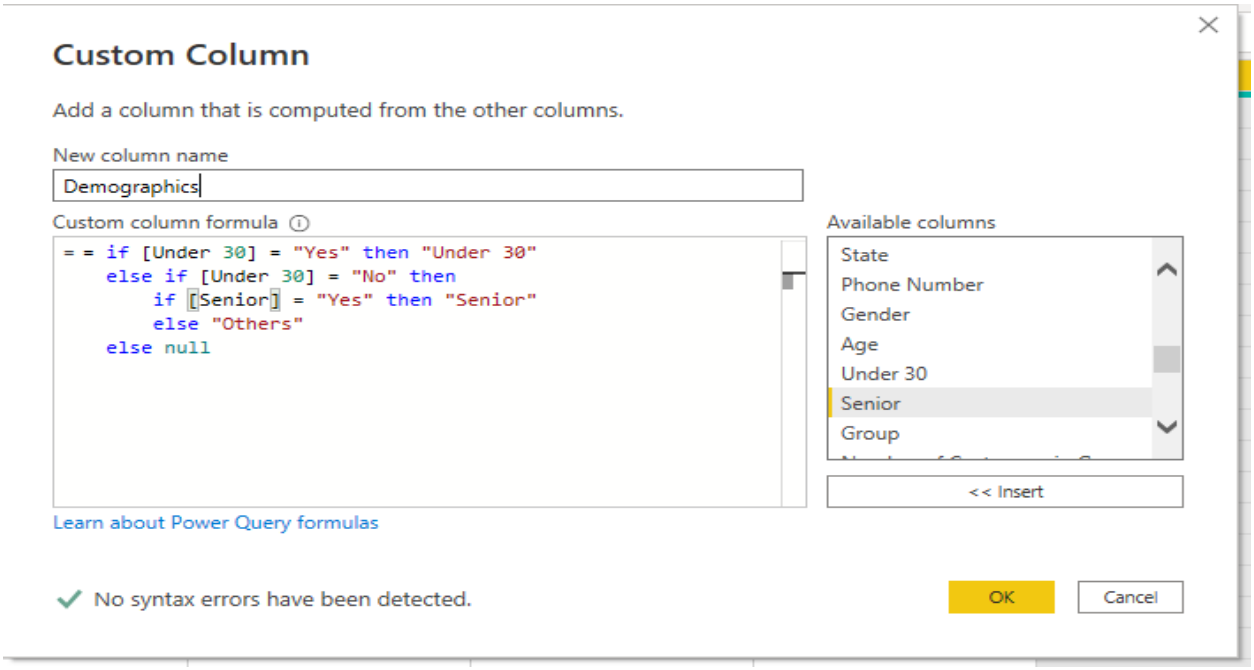
• **Use Gradient colors so that its easy to spot states with a high churn rate**



• **Create a column called Demographics by creating age categories as "Under 30" "Senior" "Others"**

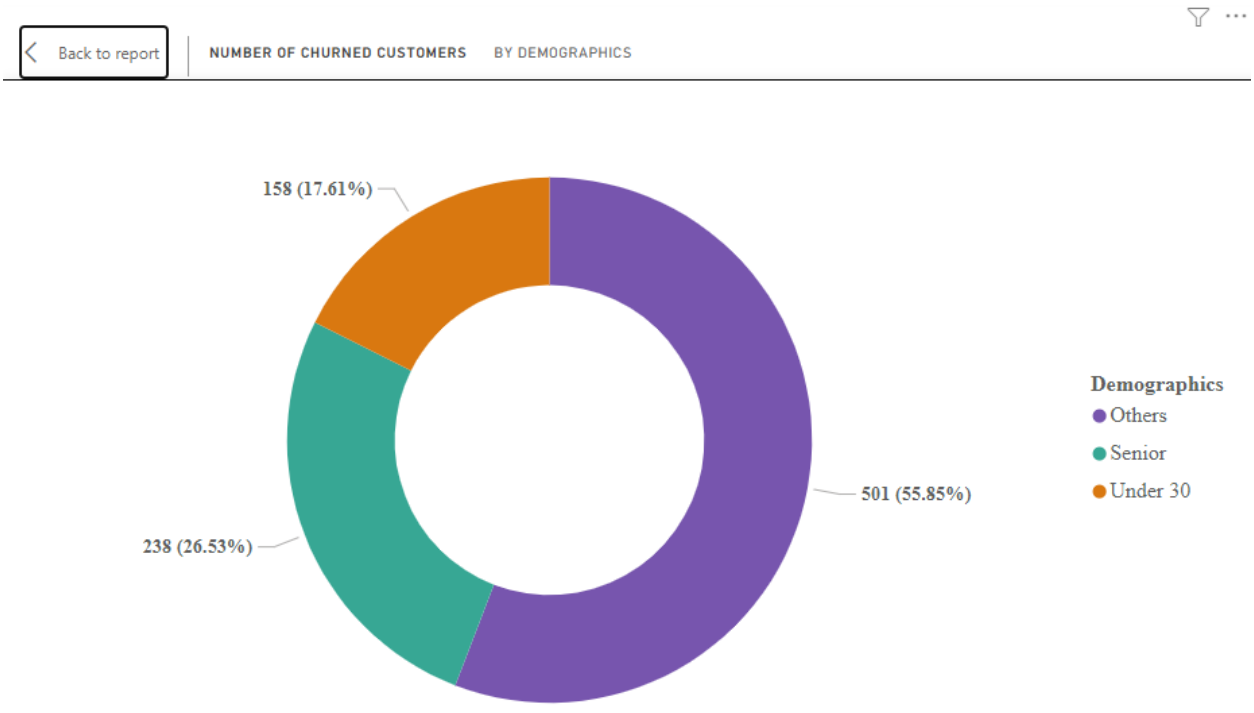
For this, I had followed the steps:

1. Transform data
2. Created Custom column
3. Used an IF statement to categorize as shown below

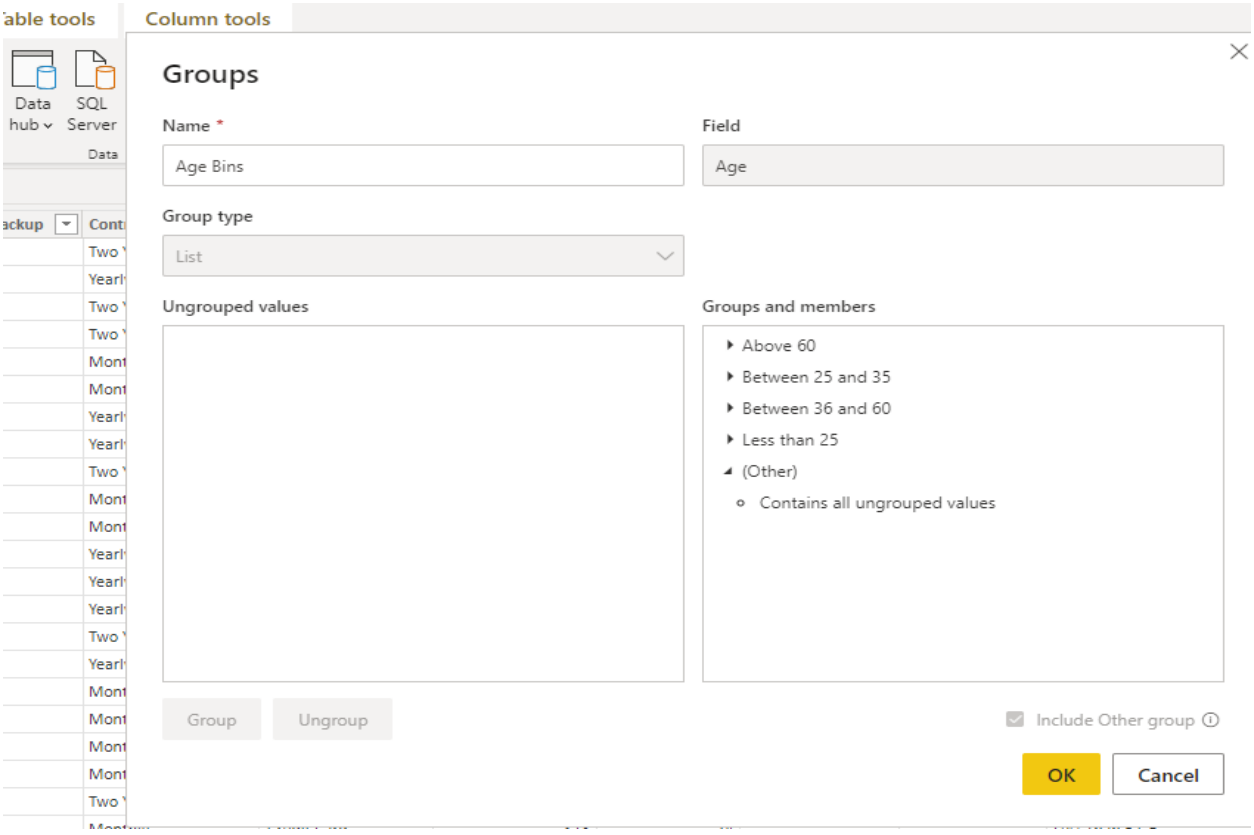


• Add any Visualization to analyze the churn rate for each categories

Insight: The doughnut chart shows the proportion of churned customers, with 26.53% being seniors, 17.61% falling under the age of 30, and 55.85% in other age categories.

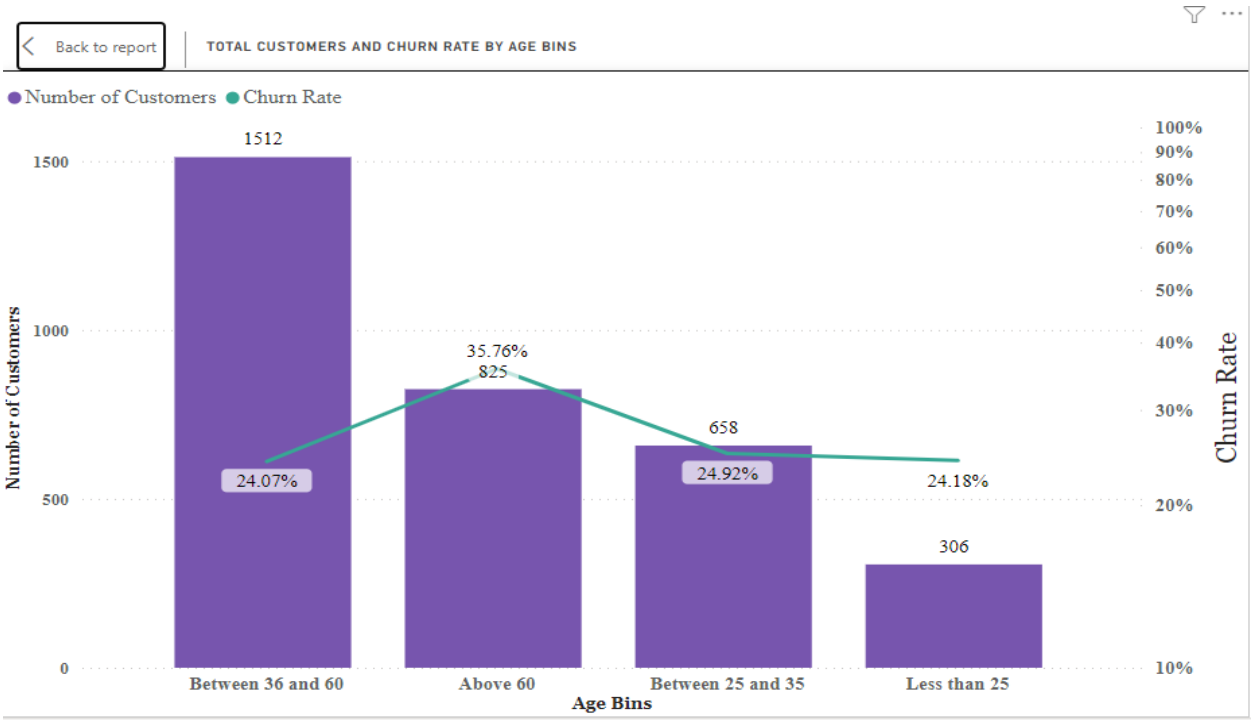


• **Create age bins such that “less than 25”, “Between 25 and 35”, “Above 60”**



• **Add a line and stack chart column to show number of customers and churn rates by age bins**

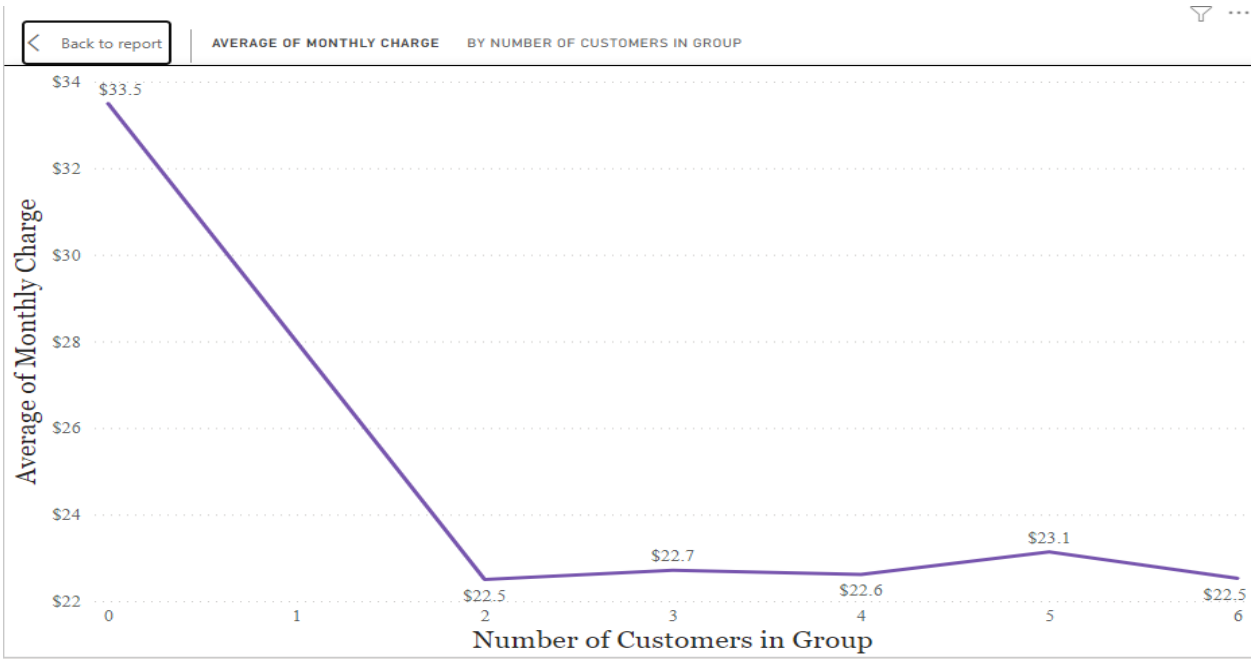
Insight: The Line in visual gives a clear age-related churn trend. Older customers (above 60) have the highest churn rate at 35.7%, followed by the 36-60 age group at 24.07%. Simultaneously, the 25-35 age group has a similar churn rate of 24.9%. In contrast, younger customers (below 25) exhibit a relatively lower churn rate at 24.2%. Adapting strategies for each age group is vital to mitigate churn effectively.



• Change Monthly Charge to Currency. Create a graph for average monthly charge by customer

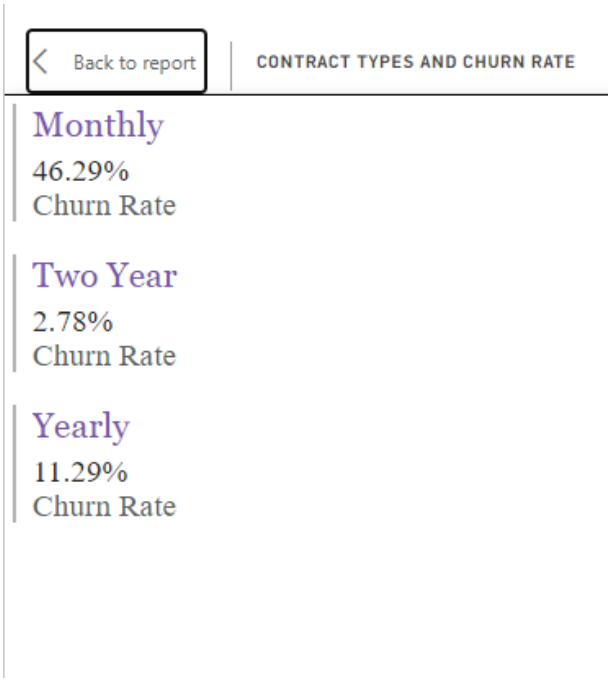
group

Insight: Larger customer groups tend to have lower average monthly charges. Group 0, with the most customers, shows the highest average monthly charge at $33.5. Conversely, smaller groups exhibit a gradual decrease in average monthly charge.



• Use the multi card row visualization to show yearly, monthly contracts affecting churn rate

Insight: The multirow card shows Monthly contracts exhibit a high churn rate of 46.29%, possibly due to flexibility preferences. Yearly contracts demonstrate a moderate churn rate of 11.2%, implying better customer retention. Two-year contracts have the lowest churn rate at 2.7%.



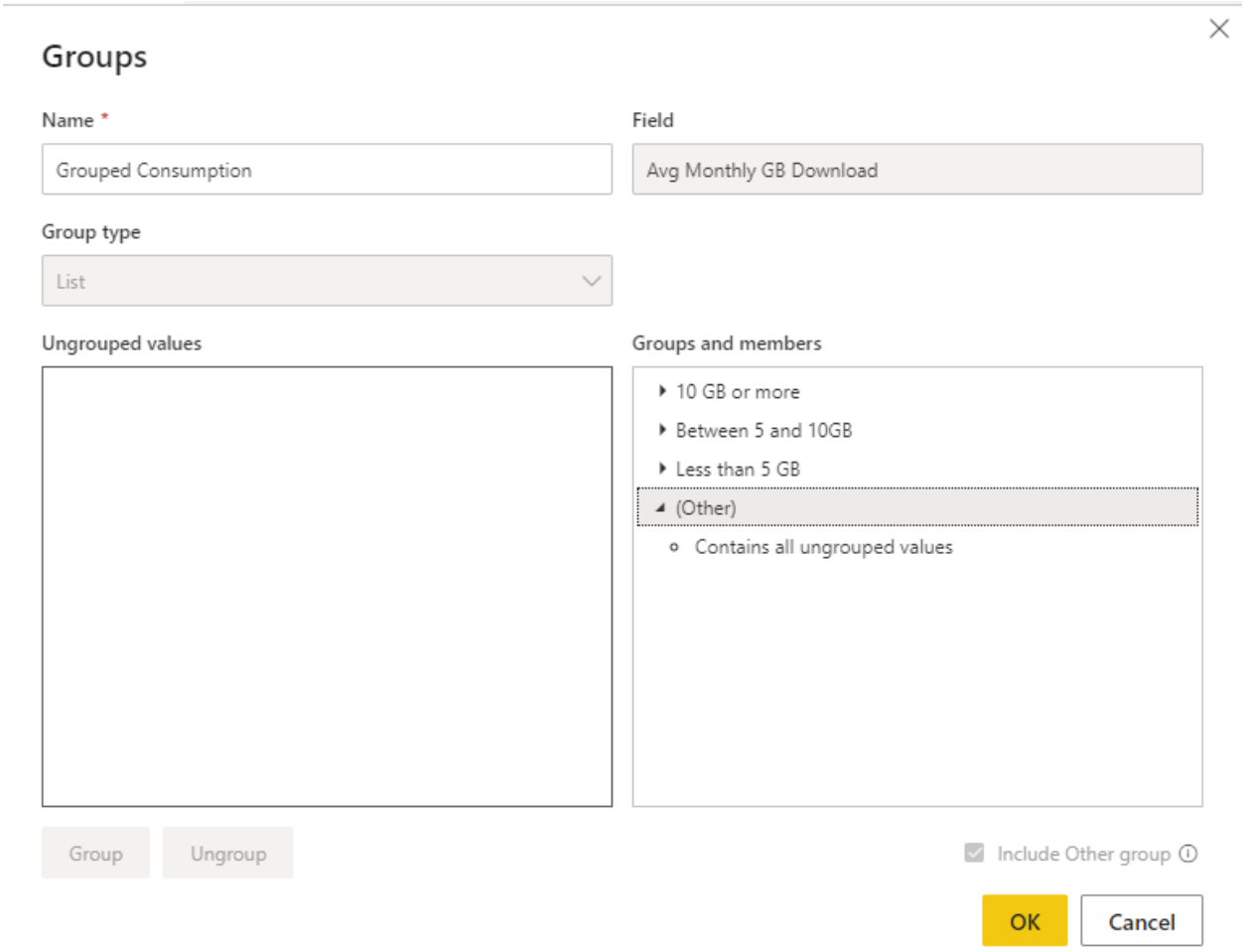
• Create a column called Grouped Consumption that classifies the average monthly GB download

in the following groups:

o Less than 5 GB

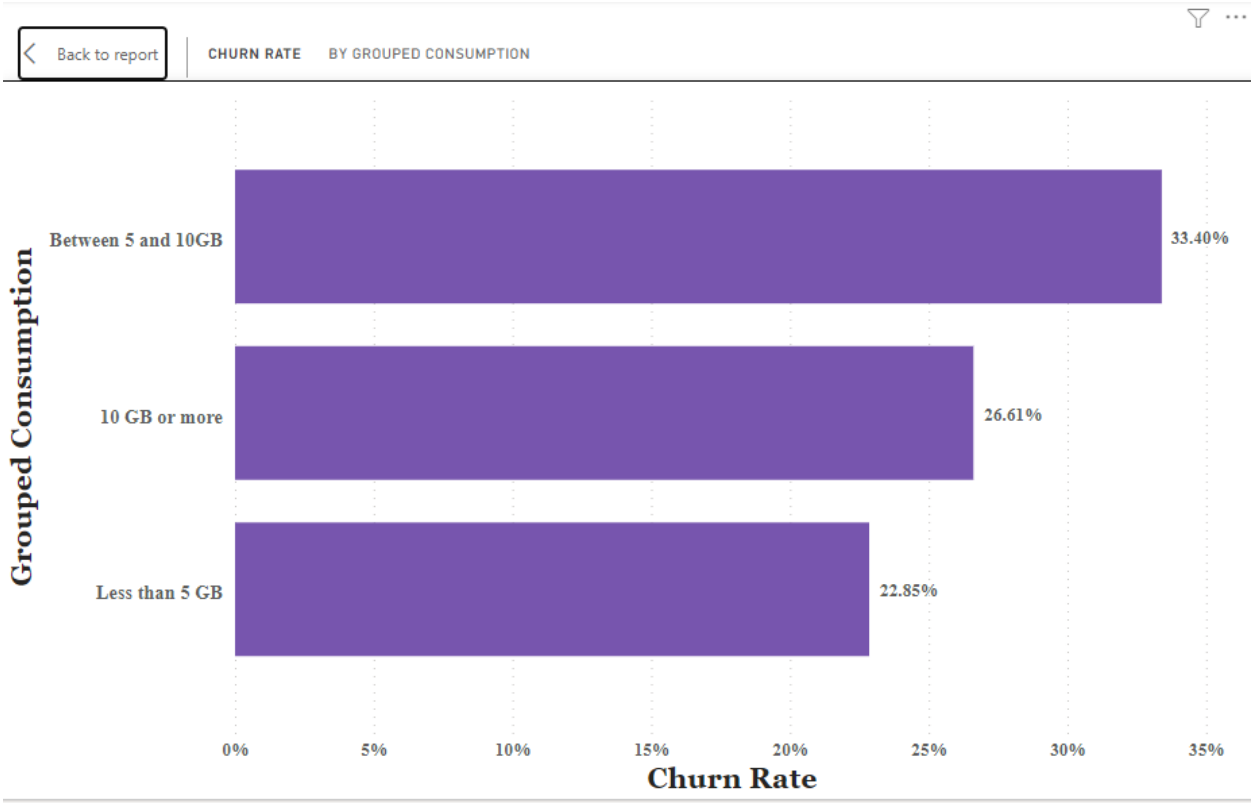
o Between 5 and 10 GB

o 10 GB or more



• Create a cluster bar chart of churn rate by group consumptions

Insight: Churn rates are influenced by data usage patterns. Customers using 5-10 GB have the highest churn rate (33.4%), followed by those with 10+ GB (26.6%). However, customers using less than 5 GB have relatively lower churn rate (22.8%). Understanding the relationship between data consumption and churn rates can help tailor data plans and offerings to mitigate churn effectively.



• Show churn rates by intl plan and intl active on matrix at the same time add a map visualization

to show state and province wise churn rate for intl plan

Insight: In the matrix, rows represent customer status with an international plan, while columns represent international active.

Back to report | CHURN RATE BY INTL PLAN AND INTL ACTIVE

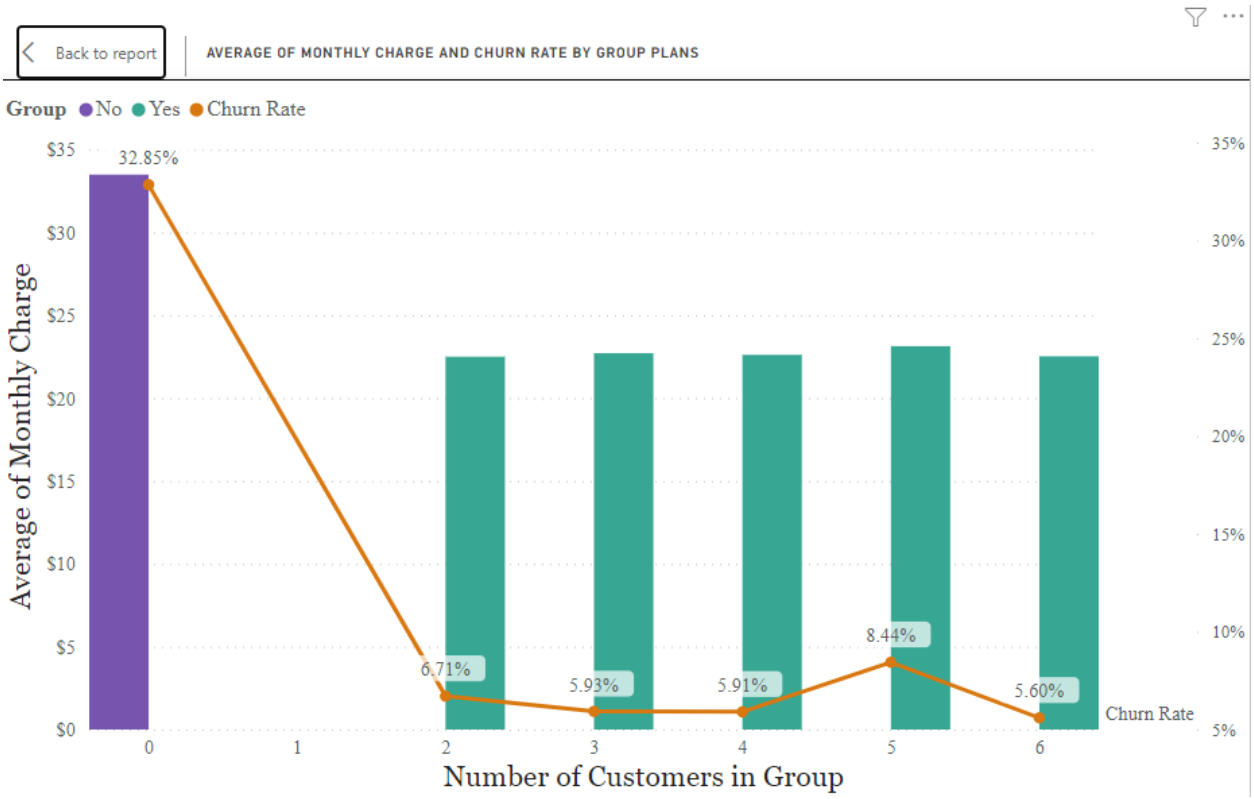
Intl Plan	No	Yes	Total
no	20.01%	40.34%	**27.07%**
yes	71.19%	7.59%	**24.88%**
Total	**22.21%**	**34.31%**	**26.86%**

• Create graph of total amount of customers who churn by each churn category and Total amount of customers by each contract types

• **Create a graph of average monthly charge and churn rate by group plans**

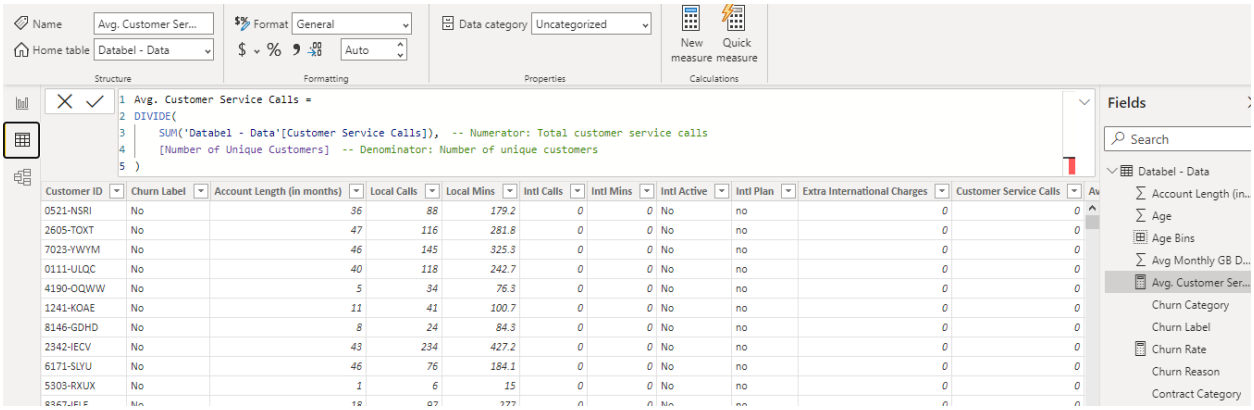
Insight: In the visualization, a '0' signifies absence of group plans, correlating with a high churn rate of 32.85%, and have high average monthly charges. As customers opt for group plans, monthly charges decrease, subsequently reducing churn rates. Notably, larger customer groups have lower average monthly charges, with group '0' having the highest. Conversely, smaller groups display a gradual decline in average monthly charges and churn.

so

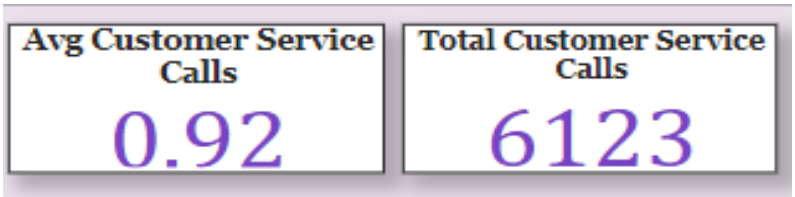


• **Create a slicer for account length**

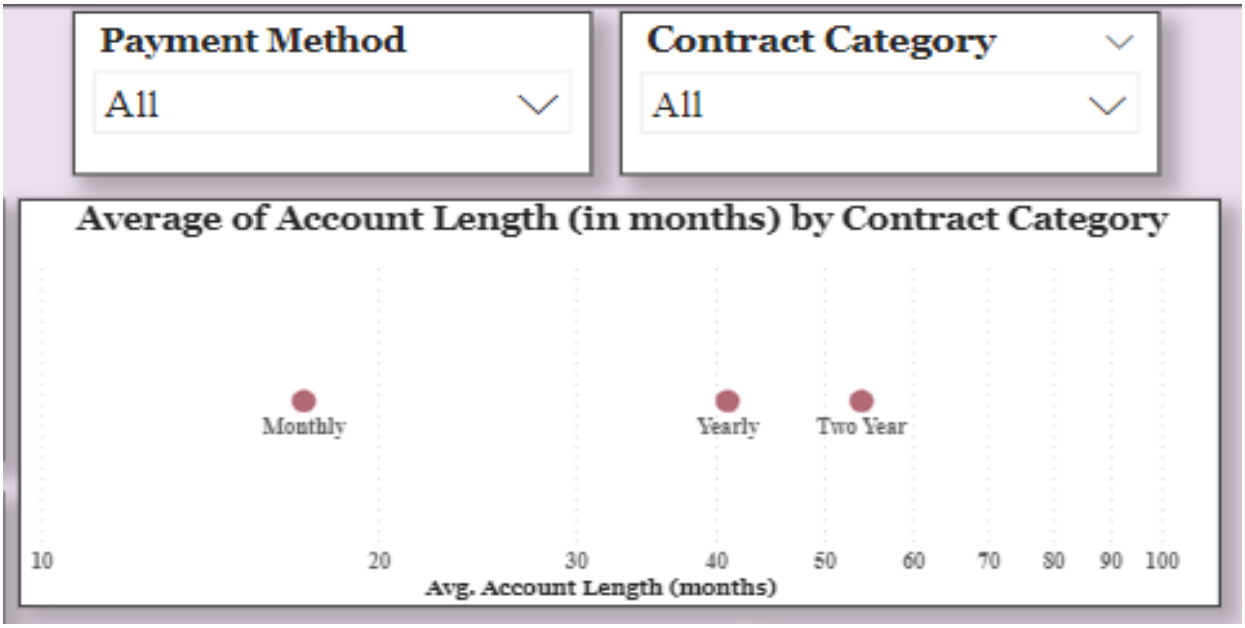
• **Create a measure to calculate the average customer service calls per customer name the measures as Avg. Customer Service Calls**



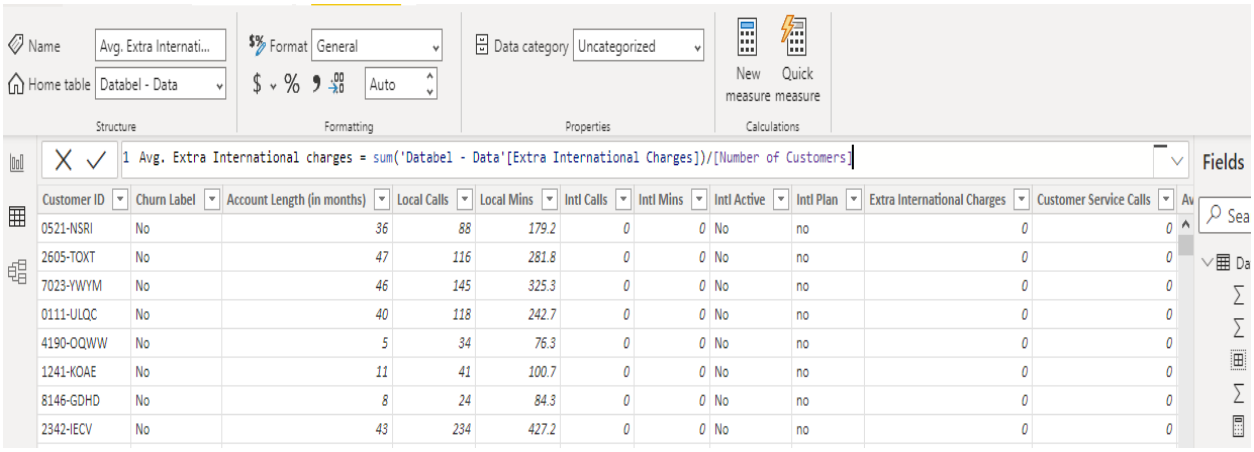
• **Add two cards with total customer service calls and average customer service calls**



• **Add a scatterplot to add average account length by contract categories. To see a specific result by contract category and payment method add a slicer to analyze specific results**



• Add to new measures avg extra international charges and avg extra data charges create the structure such that For example - sum ()/ total number of customers



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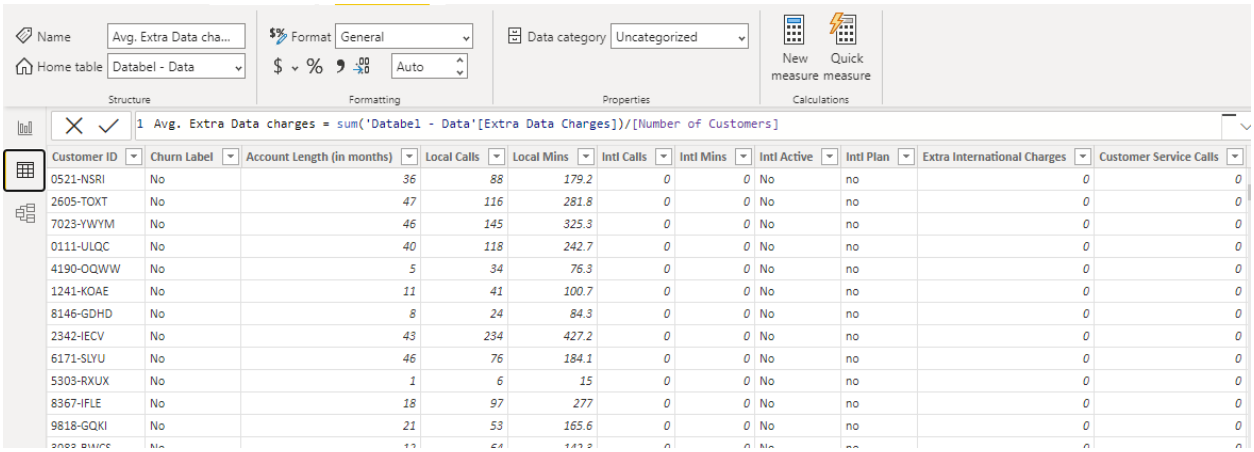

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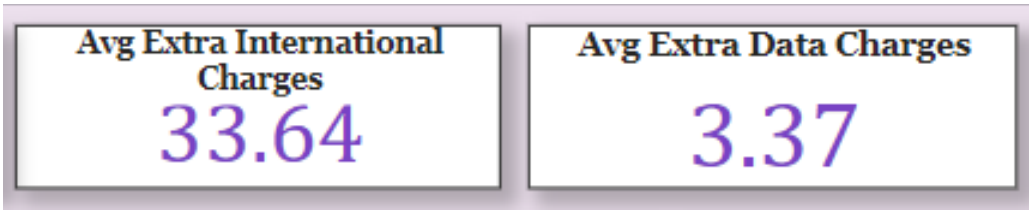
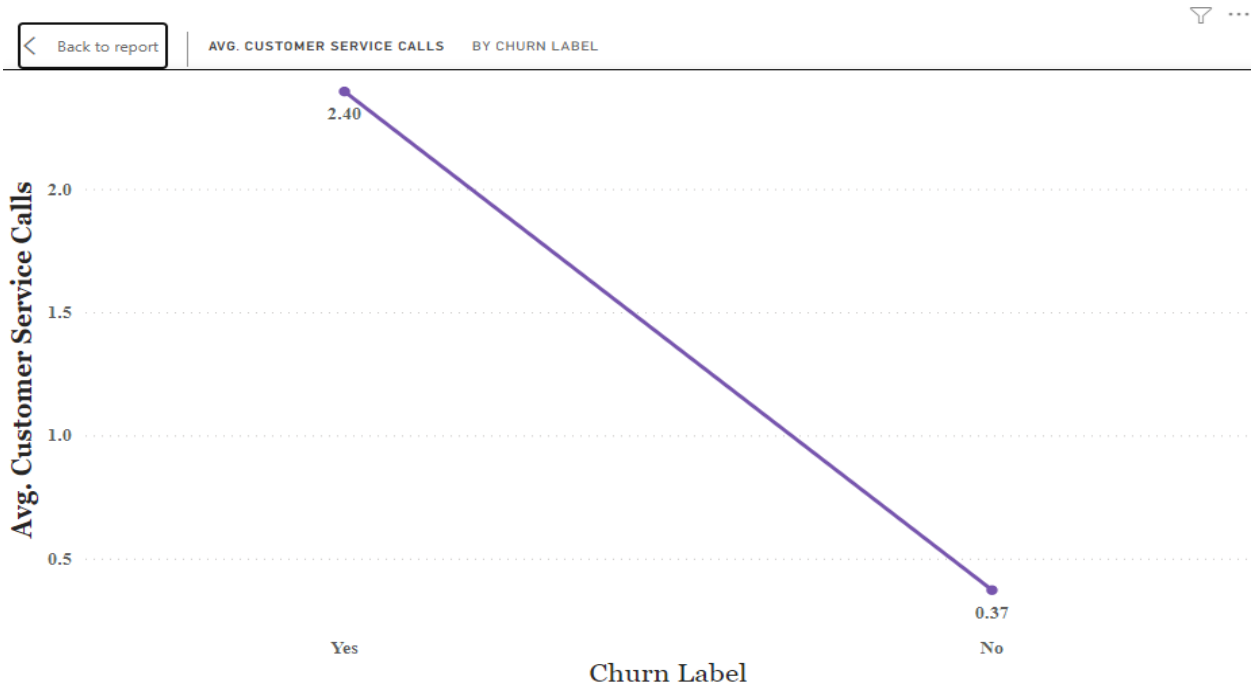
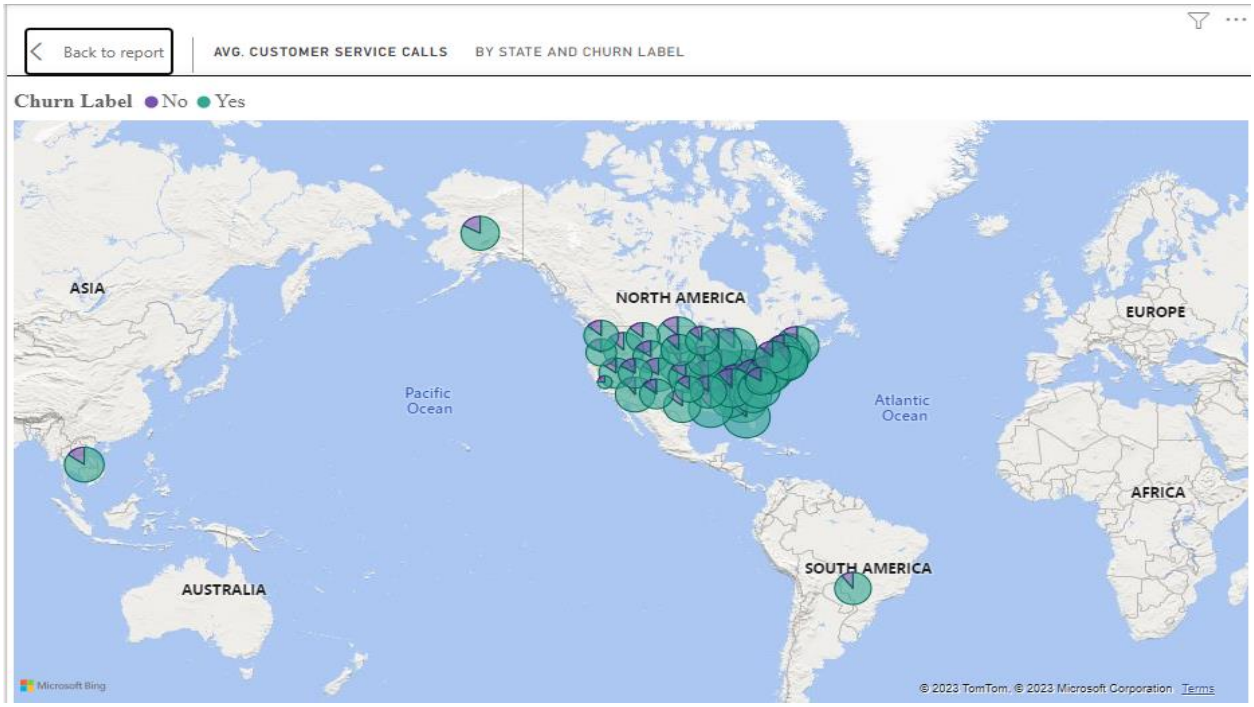
• Add two cards to analyze both the measures created in the previous points



• **Create a line chart for churn label and avg customer service calls measure created earlier**

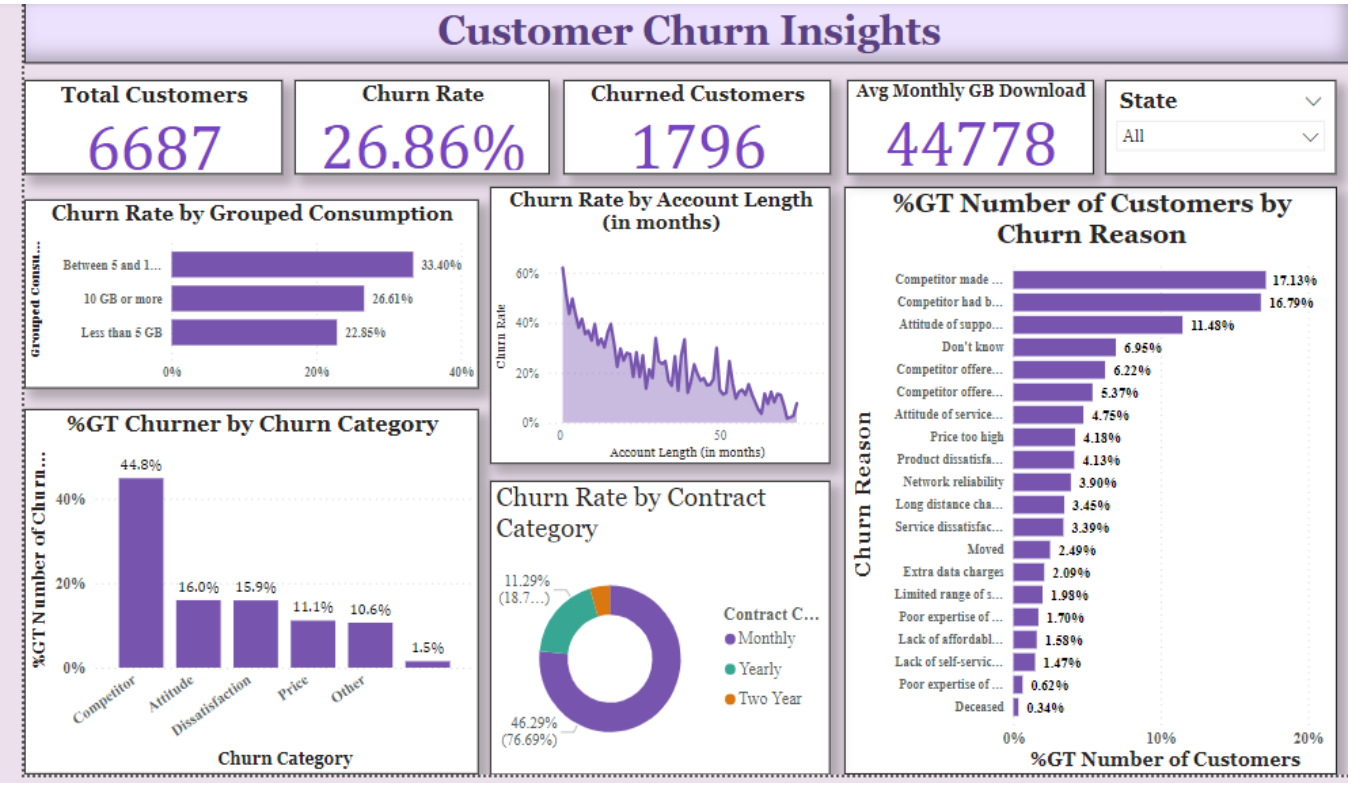


• **Add other mapping visualization to understand the avg customer calls by states and churn labels**

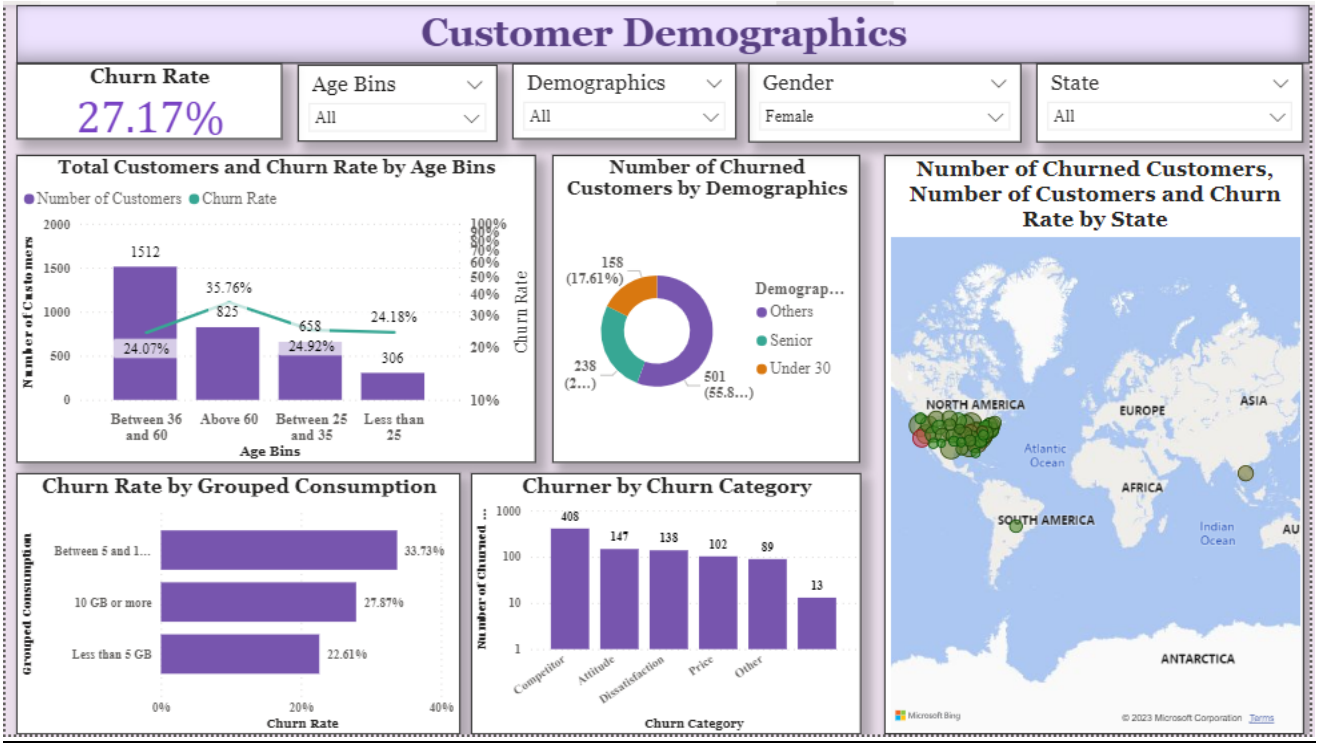


Dashboards

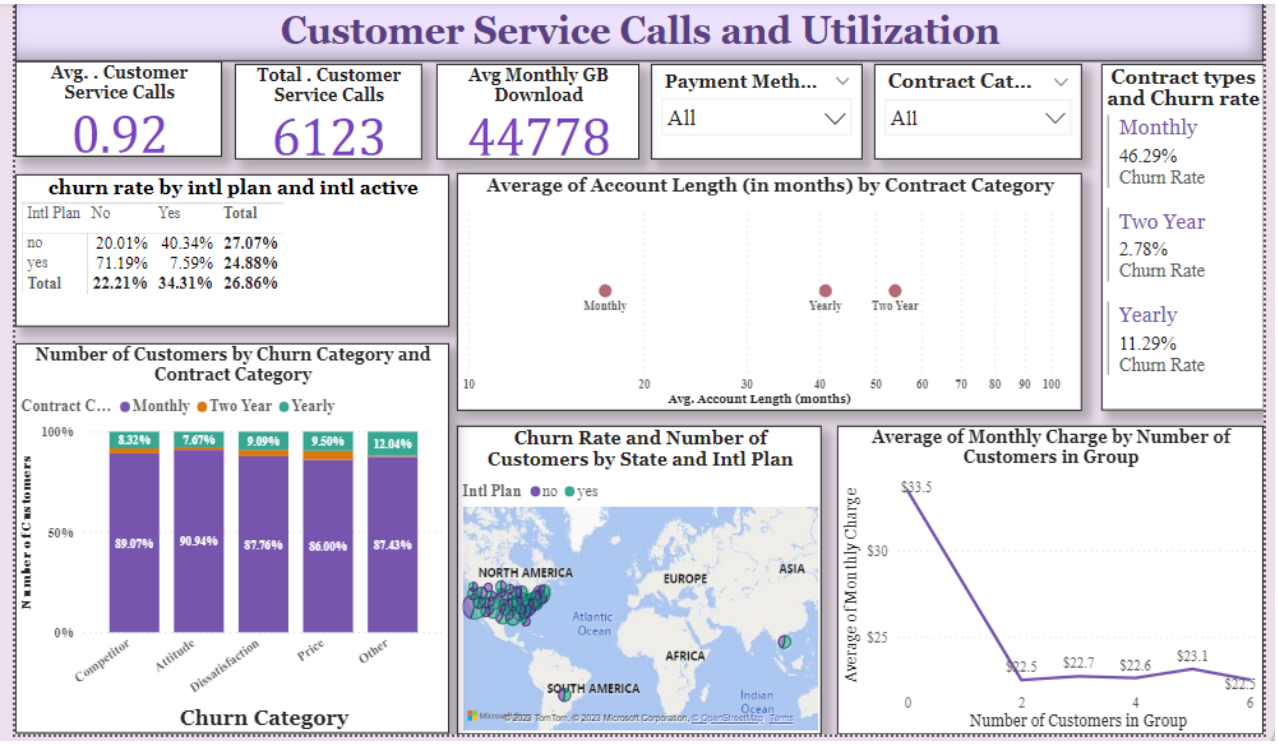
Dashboard 1



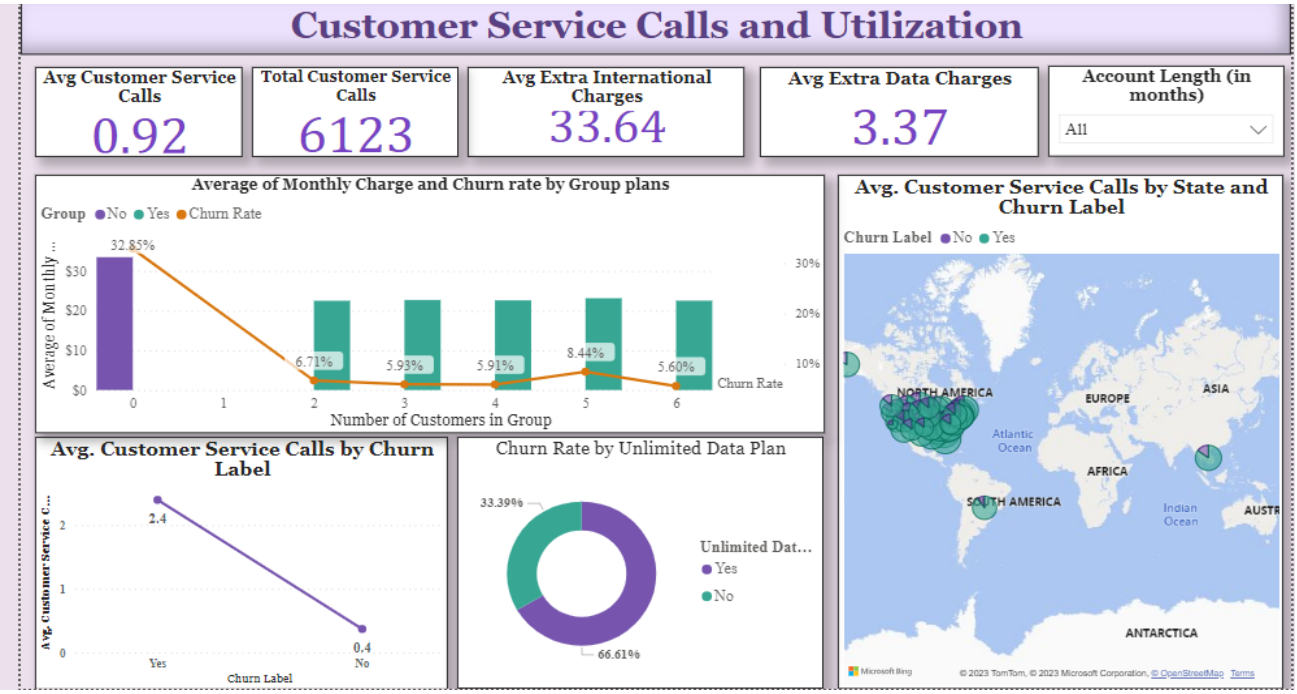
Dashboard 2



Dashboard 3



Dashboard 4



Key Insights

- Churn rates vary significantly across age groups. Customers above 60 and between 36-60 exhibit higher churn rates, emphasizing the need for age-tailored retention strategies.
- Customers with higher data usage, particularly in the range of 5-10 GB, demonstrate higher churn rates. Optimizing data plans for these segments could lead to improved customer retention.
- Competitors offering better devices, higher data limits, and faster download speeds significantly impact customer churn. Addressing these competitive aspects is essential to retain customers.
- Churn rates vary by region, with California and West Virginia showing significant churn patterns. Understanding regional dynamics can aid in developing targeted strategies for these areas.
- Age demographics play a crucial role in churn. Seniors and younger customers under 30 exhibit higher churn rates, necessitating personalized retention approaches for different age groups.
- Group plans are associated with reduced average monthly charges and lower churn rates. Encouraging customers to opt for group plans can contribute to better customer retention.

Recommendations

1. **Tailored Retention Strategies**:

Develop personalized retention strategies based on age demographics to address varying churn rates and preferences.

2. **Optimized Data Plans:**

Review and adjust data plans, particularly targeting the 5-10 GB usage range, to ensure competitive offerings and reduced churn rates.

3. **Competitive Analysis and Offerings:**

Continuously monitor competitors to ensure that the company's offerings remain attractive and competitive in the market.

4. **Geographic Targeting:**

Focus on regions like California and West Virginia with high churn rates, tailoring marketing and service enhancement strategies for these areas.

5. **Promotion of Group Plans**:

Promote group plans to customers to lower their average monthly charges, which could lead to increased satisfaction and reduced churn.