# CUSTOMER CHURN ANALYSIS

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**SUBJECT: BUSINESS INTELLIGENCE AND DATA VISUALIZATION**

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# INTRODUCTION

Customer Churn, often referred to as customer attrition or customer turnover, is a critical metric for businesses across various industries. It represents the percentage of customers who discontinue using a company's products or services within a given period. Churn is a significant concern for organizations as it can result in the loss of revenue and the need to acquire new customers to replace those who have departed.

Understanding the reasons behind customer churn and identifying at-risk customers is vital for any business. It provides an opportunity to implement strategies to improve customer retention, enhance the customer experience, and ultimately increase revenue.

Churn analysis typically involves examining customer data, such as usage patterns, demographics, and interactions with the company's services. By identifying patterns and trends associated with churn, businesses can make data-driven decisions to mitigate customer attrition and foster long-term customer relationships.

In today's ever-changing business landscape, retaining customers is a significant challenge for all types of companies. In this fast-paced, digital age, customer preferences can change quickly. To succeed in such an environment, businesses need to thoroughly grasp the complex interplay between keeping customers and losing them.

In this report, we dive into the captivating realm of customer churn. With the help of data analysis, our goal is to uncover valuable insights from our dataset. Our aim is not only to understand why customers decide to leave but, more importantly, how we can minimize churn and build lasting relationships.

## SOFTWARE USED

In the world of modern business, data analysis is our guiding light. With the right tools and methods, we can turn raw data into useful insights. We've chosen Tableau as our tool to help us dive deep into our dataset and uncover hidden knowledge. Through creative data visualization and thorough analysis, we can shed light on why customers leave and use this knowledge to improve our retention strategies.

We used the latest version of Tableau - Tableau 2023.2, which is a powerful tool for data analysis and visualization. By using Tableau, we've simplified our analysis process and made our insights more accessible. We've presented our findings in an engaging and interactive way, allowing our audience to explore the data and gain valuable information effortlessly.



## OBJECTIVES

1. To find out why customers are leaving and how many of them are leaving.

2. To identify the top reasons for customers leaving.

3. To see if customers with similar traits or behavior patterns are more likely to leave.

4. To check if things like age and gender, location, customer interactions with customer service relate to churn.

5. To investigate financial and service performance indicators to see how they affect churn.

6. To recommend practical solutions to keep more customers happy and sticking around.

# THE DATA

Our journey into understanding customer churn relies on a rich and varied dataset. This dataset gives us a full picture of our customers and how they use our services. It's like the solid foundation for our analysis, helping us find important insights and make smart decisions.

Here is an overview of the dataset's key attributes:

- **Customer ID:** A unique identifier for each customer.

- **Churn Label:** A binary indicator (churned or not churned) representing the customer's churn status.

- **Account Length (in months):** The duration of the customer's subscription in months.

- **Local Calls:** The number of local calls made by the customer.

- **Local Mins:** The total duration of local calls in minutes.

- **Intl Calls:** The number of international calls made.

- **Intl Mins:** The total duration of international calls in minutes.

- **Intl Active:** A binary indicator for international service activation.

- **Intl Plan:** A binary indicator for the presence of an international service plan.

- **Extra International Charges:** Additional charges incurred for international calls.

- **Customer Service Calls:** The number of calls made to customer service.

- **Avg Monthly GB Download:** The average monthly data usage in gigabytes.

- **Unlimited Data Plan:** A binary indicator for the presence of an unlimited data plan.

- **Extra Data Charges:** Additional charges related to data usage.

- **State:** The customer's geographical location (state).

- **Phone Number:** The customer's phone number (sanitized for privacy).

- **Gender:** The customer's gender.

- **Age:** The customer's age.

- **Under 30:** A binary indicator for customers under the age of 30.

- **Senior:** A binary indicator for senior customers.

- **Group:** A grouping attribute for customers.

- **Number of Customers in Group:** The count of customers in the respective group.

- **Device Protection & Online Backup:** A binary indicator for the presence of these services.

- **Contract Type:** The type of service contract (e.g., monthly, annual).

- **Payment Method:** The customer's chosen payment method.

- **Monthly Charge:** The monthly service charge.

- **Total Charges:** The total charges incurred by the customer.

- **Churn Category:** A categorization of reasons contributing to churn.

- **Churn Reason:** Specific explanations for customer churn.

This comprehensive dataset gives us the information we need to dig into customer churn. We can find patterns, figure out what affects customer choices, and use this knowledge to do a better job of keeping customers and making our business grow.

# THE CHURN OVERVIEW

As we begin our data-driven journey, one of the first key metrics we encounter is the overall churn rate. This metric is at the core of our analysis, giving us a clear picture of the challenge we face. With a churn rate of 26%, we can see the percentage of customers who have decided to stop using our services.

Churn Rate is given by formula:

```
Churn Rate = ([No. of Churners] / [Total No. of Customers])*100
```

# IDENTIFYING THE TOP CHURN REASONS

Digging deeper into the factors that affect this churn rate will reveal why customers leave and show us ways to do better. Understanding these reasons allows us to create strategies that improve customer retention, service quality, and our position in the market.

Let's explore the data further to uncover the stories it holds and find strategies that can reduce churn, improve the customer experience, and help our business grow.

For Churn Reason Analysis, we have made the following charts-

1. Word Cloud to highlight most prominent churn reasons
2. Donut Chart of churn category distribution to analyse weightage of each churn category
3. Bar Chart to find top 5 churn reasons and analyse them in detail along with solutions

The most substantial factors contributing to churn, as revealed by our analysis, are:

1. Competitor Made Better Offer (30.89%):

**Significance**: This is the leading cause of churn, suggesting that customers are being lured away by competing offers.

**Insights**: Customers are price-sensitive and responsive to offers from competitors, indicating the need to maintain competitive pricing and regularly assess market dynamics.

**Actionable Strategy**: Implement dynamic pricing strategies and loyalty programs to match or surpass competitor offers. Provide additional value, such as bundled services or rewards, to incentivize customer loyalty.

2. Competitor Had Better Devices (30.28%):

**Significance**: Customers are swayed by competitors offering superior devices, underlining the importance of technology and equipment.

**Insights**: Device quality and functionality are critical to customer satisfaction and staying up-to-date with technology trends is essential.

**Actionable Strategy**: Invest in device improvement and stay current with cutting-edge technology. Offer customers the latest devices and ensure compatibility with their evolving needs.

3. Attitude of Support Person (20.69%):

**Significance**: Churn linked to support personnel's attitude underscores the human element of customer service.

**Insights**: Customer service is not solely about problem-solving; it's about delivering a positive customer experience.

**Actionable Strategy**: Prioritize customer service training and emphasize the importance of a positive, empathetic, and solution-oriented attitude among support personnel.

4. <u>Competitor Had Offered Higher Download Speed (9.58%)</u>:

**Significance**: Customers value internet speed and are willing to switch providers for faster connections.

**Insights**: Fast and reliable internet is essential in the modern world, and providers need to meet or exceed speed expectations.

**Actionable Strategy**: Invest in network infrastructure and technology to provide competitive download speeds. Regularly test and improve network performance to ensure customer satisfaction.

5. <u>Attitude of Service Provider (8.56%)</u>:

**Significance**: The customer's perception of the service provider's attitude is a substantial driver of churn.
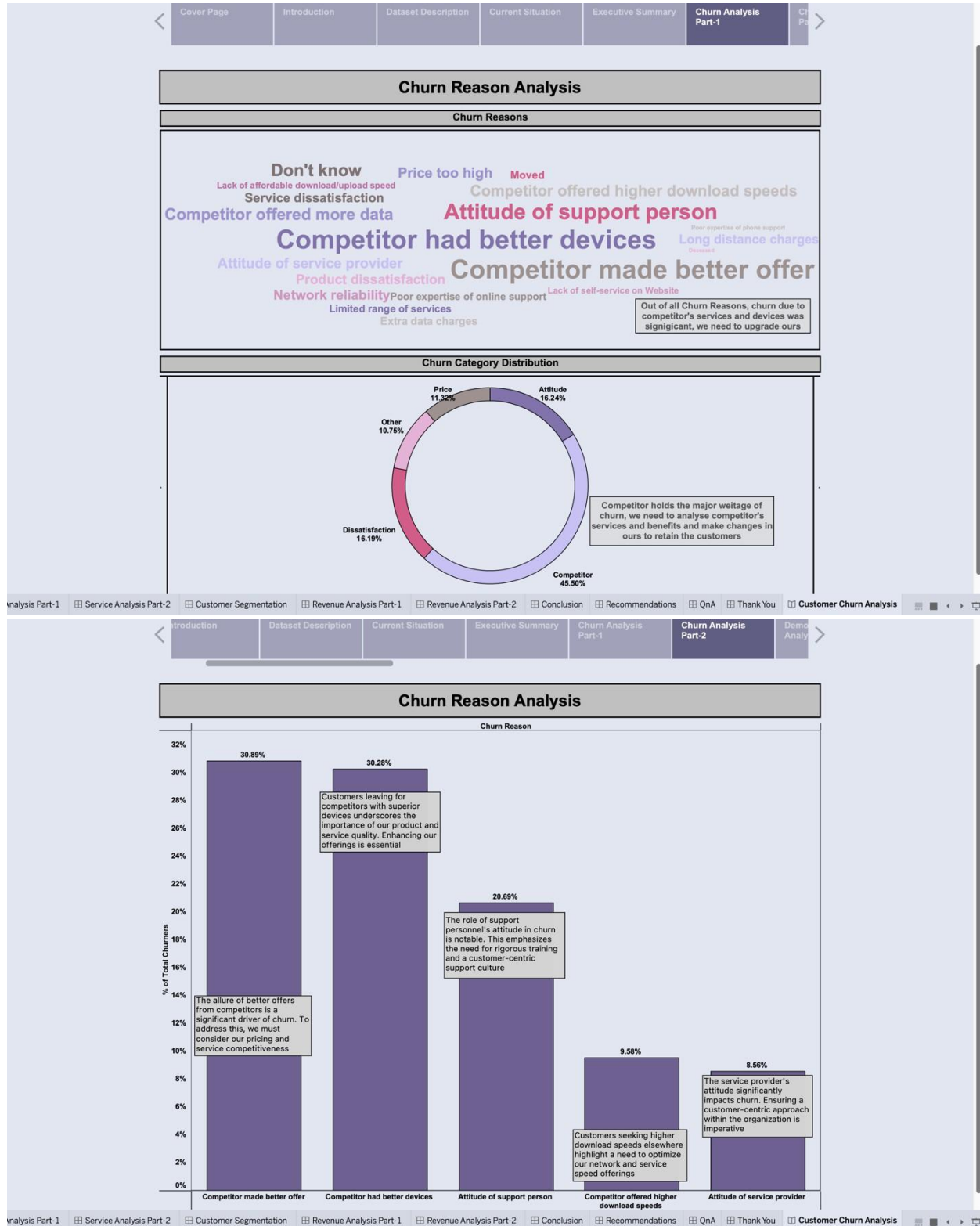
**Insights**: Customers seek a positive and respectful relationship with their service provider.

**Actionable Strategy**: Foster a culture of respect and empathy within the organization. Implement training and guidelines to ensure a consistently positive attitude in interactions with customers.

<u>The Significance and Implications:</u>

These top churn reasons hold implications for our business analysis. They represent the key areas where **Databel** can implement strategies for improvement and drive customer retention. By addressing these issues, they can create an environment where customers are not only attracted but also compelled to stay. Our analysis does not stop at identifying these churn reasons; it provides a roadmap for action.
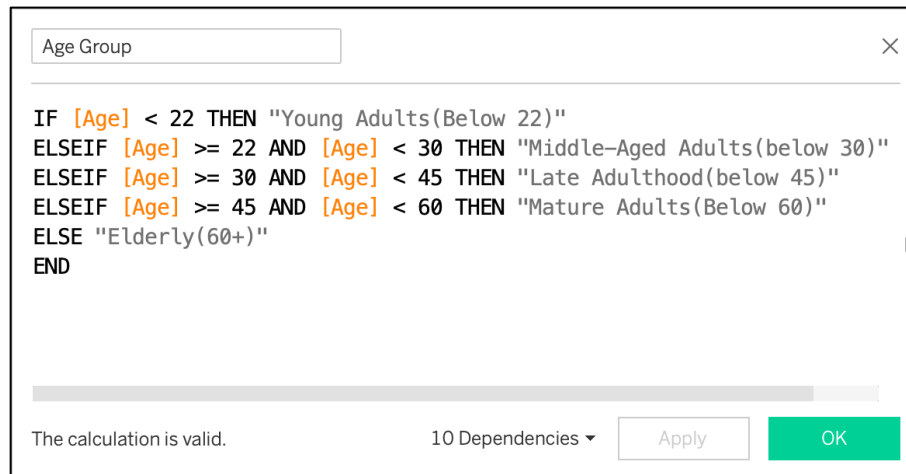
**Churn Reason Analysis Dashboards -**

## Churn Reason Analysis

### Churn Reasons

Don't know  Price too high  Moved
Lack of affordable download/upload speed  Competitor offered higher download speeds
Service dissatisfaction
Competitor offered more data  **Attitude of support person**
Competitor had better devices
Poor expertise of phone support
Long distance charges
Deceased
Attitude of service provider  Competitor made better offer
Product dissatisfaction
Network reliability  Poor expertise of online support  Lack of self-service on Website
Limited range of services

Out of all Churn Reasons, churn due to competitor's services and devices was signigicant, we need to upgrade ours

Extra data charges

### Churn Category Distribution

Price 11.32%
Attitude 16.24%
Other 10.75%
Dissatisfaction 16.19%
Competitor 45.50%

Competitor holds the major weitage of churn, we need to analyse competitor's services and benefits and make changes in ours to retain the customers

## Churn Reason Analysis

### Churn Reason

| Churn Reason | % of Total Churners |
|---|---|
| Competitor made better offer | 30.89% |
| Competitor had better devices | 30.28% |
| Attitude of support person | 20.69% |
| Competitor offered higher download speeds | 9.58% |
| Attitude of service provider | 8.56% |

The allure of better offers from competitors is a significant driver of churn. To address this, we must consider our pricing and service competitiveness

Customers leaving for competitors with superior devices underscores the importance of our product and service quality. Enhancing our offerings is essential

The role of support personnel's attitude in churn is notable. This emphasizes the need for rigorous training and a customer-centric support culture

Customers seeking higher download speeds elsewhere highlight a need to optimize our network and service speed offerings

The service provider's attitude significantly impacts churn. Ensuring a customer-centric approach within the organization is imperative

# DEMOGRAPHIC INSIGHTS

In the world of customer churn analysis, understanding our customers' demographics is crucial. Our analysis has revealed insights about different customer groups. These insights aren't just numbers; they're the keys to creating strategies to keep customers happy and satisfied.

Age Group Insights:

For this, we have grouped the 'Age' of customers into 5 distinct groups – Young Adults (Below 22), Middle-Aged Adults (Below 30), Mature Adults (30-45), Late Adulthood (45-60) and Senior Citizens (60+). This grouping was achieved through calculated field in tableau, and further we used side by side bar chart to analyze churners and non-churners ratio for these age groups.

```
Age Group                                                    ✕

IF [Age] < 22 THEN "Young Adults(Below 22)"
ELSEIF [Age] >= 22 AND [Age] < 30 THEN "Middle-Aged Adults(below 30)"
ELSEIF [Age] >= 30 AND [Age] < 45 THEN "Late Adulthood(below 45)"
ELSEIF [Age] >= 45 AND [Age] < 60 THEN "Mature Adults(Below 60)"
ELSE "Elderly(60+)"
END
                                                             ▶


The calculation is valid.        10 Dependencies ▾    Apply      OK
```

**Finding** - One of the most important things we've learned is that customers in the 60+ age group are more likely to leave. This may be due to age considerations, but we need to pay special attention to the needs and preferences of these customers. Young Adults (Below 22) are the least churning.

Gender:

For this we used side by side bar chart to get the overview of churners and non-churners, gender-wise.

**Finding** - Gender doesn't seem to make a big difference in churn. Both men and women have similar behaviors when it comes to leaving services.

Contract Methods:

Again, we used side by side bar chart to get the overview of churners and non-churners by contract methods – month-by-month, one-year and two-year contracts.

**Finding** - Another key insight is revealed through customer behavior was that customers with two-year contracts are rarely churning but month-to-month contract customers are churning in large numbers.

**Demographic Analysis Dashboard** -
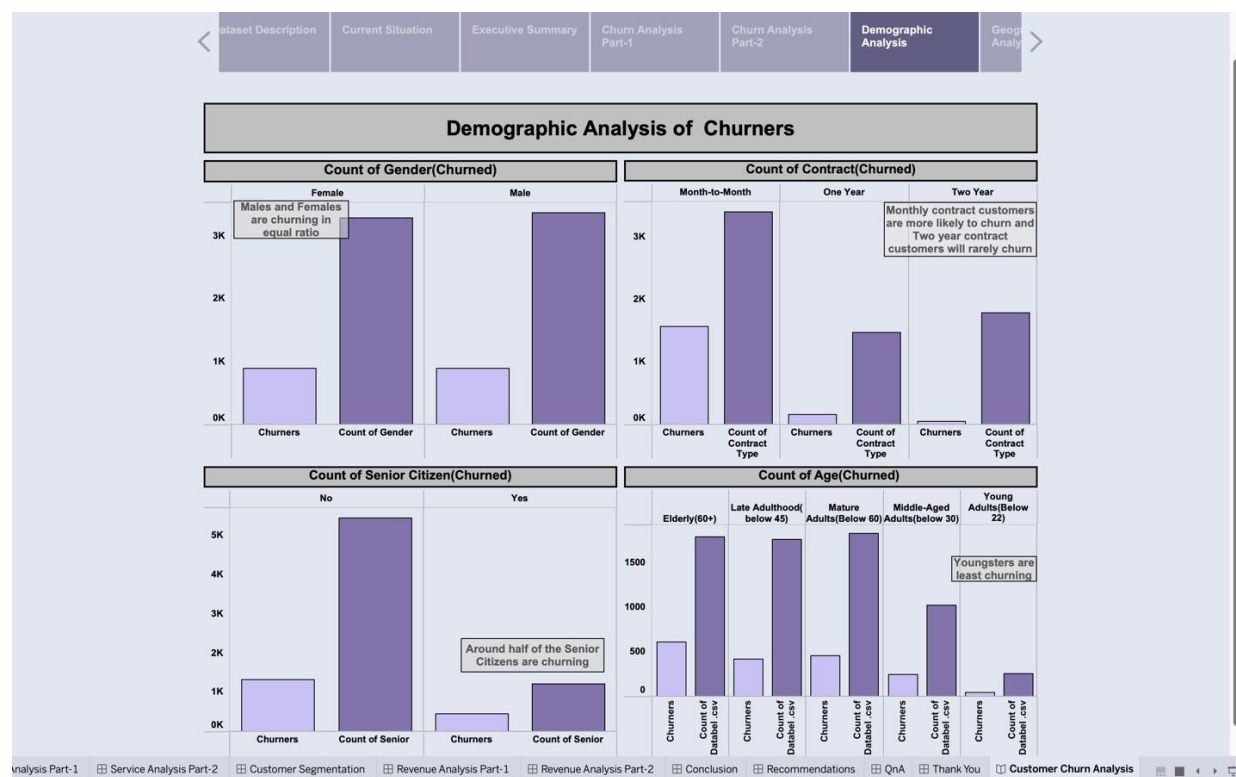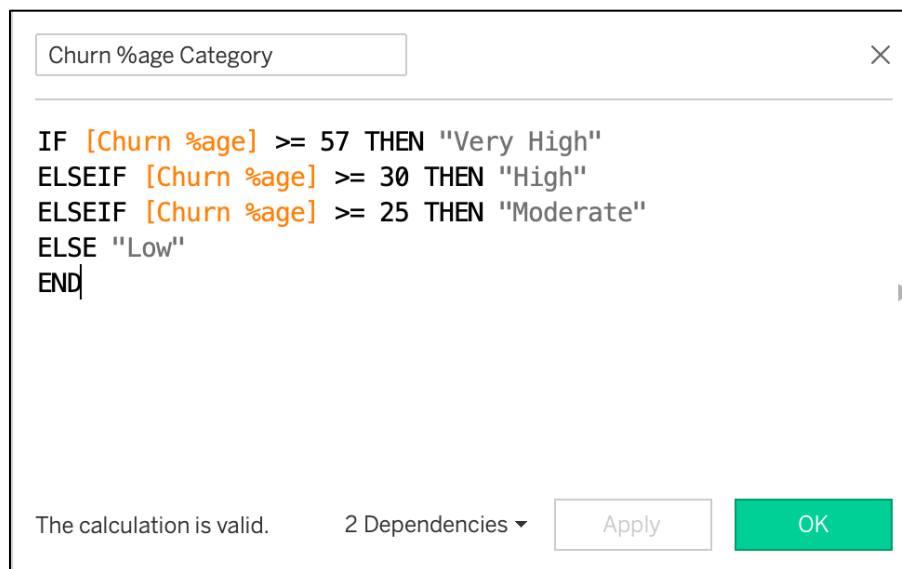
# GEOGRAPHICAL INSIGHTS:

As we dive into the world of customer churn, we've looked at where our customers are located and found some valuable insights that can help us keep them around. Geography isn't just about where people live; it's about how different places affect churn.

State Differences:

To track churn rates by state, we have used 'map' to classify regions as – very high churn%, high churn%, moderate churn%, and low churn%. This classification was achieved through calculated field which classifies churn into these labels based on churn %.

```
Churn %age Category                                    ✕

IF [Churn %age] >= 57 THEN "Very High"
ELSEIF [Churn %age] >= 30 THEN "High"
ELSEIF [Churn %age] >= 25 THEN "Moderate"
ELSE "Low"
END                                                    ▶




The calculation is valid.     2 Dependencies ▾    Apply        OK
```

**Finding -** One thing we've noticed is that churn rates vary from state to state. For example, Canada has a much higher churn rate, we can say alarming than other states. This tells us that we need to figure out what's going on in Canada and come up with ways to fix it.

Grouping and Churn:

We used a tree map to see how no. of grouped customers in each state is related to its churn%.

**Finding –** Tree map shows that in regions where number of grouped customers were more, churn was least and vice-versa. For example – Canada has least number of customers in group therefore faced highest churn.

Crosstab view:

We have also showed 3 crosstabs for - top 10 regions by churn rate, top 10 regions by retention rate, and top 10 regions by customer count.

**Geographic Analysis Dashboard -**
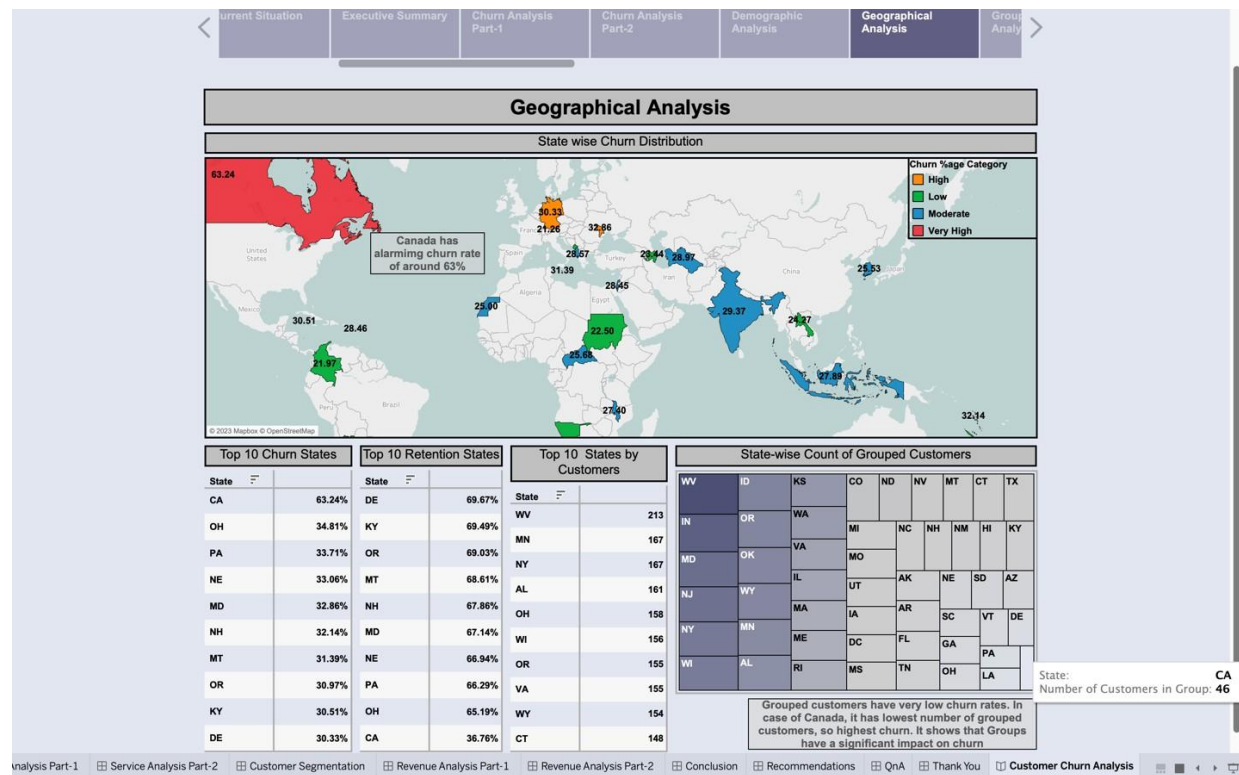
# CUSTOMER BEHAVIOR TRENDS

We've split all the info into two parts – one for customers who stick around (non-churners) and another for those who leave (churners). This helps us see what works for different groups of customers, for this we compared both using graphs, analysis from those are described below:

1. First, we peeked at the balance between males and females among our customers. It's even for both churners and retainers.

2. Senior citizen to non-senior citizen ratio among non-churners was around 22% and in churners it was 35%, shows that they are churning in good numbers.

3. How customers pay is another aspect we checked out. We have a donut chart that shows the payment methods people prefer. It showed that Direct Debit method of payment was preferred by 55% customers but among churners, it rose to 71% indicating that there might be some issue with this payment method.

4. 80% of the churned customers and 67% non-churners had unlimited data plan, indicating unlimited data plan customers are churning substantially.

5. 87% of the churners are month-to-month contract customers.

**Customer Behavior Dashboard -**



This shows detailed comparison between churner and non – churner profile from various aspects.

# GROUP AND AGE ANALYSIS:

Our exploration through data took us to the fascinating age and group analysis, where we examined how different sets of customers influence essential metrics.

Metrics:

We defined crucial metrics using calculated fields, like "Average Monthly Charges", "Customer Counts", "Churned Customer Counts" and "Average Customer Service Calls." These metrics form the core of our understanding of customer behavior and its impact on our business. We offer a versatile filter that allows users to select the metric they want to explore. These metrics are defined using parameters and calculated fields.

```
Metric                                                          ✕

CASE [Select Metric]
    WHEN 'Avg Monthly Charges' THEN [Avg Monthly Charges]
    WHEN 'No. of Customers' THEN [No. of Customers]
    WHEN 'No. of Churned Customers' THEN [No. of Churned Customers]
    WHEN 'Avg Customer Service Calls' THEN [Avg Customer Service Calls]
END

The calculation is valid.          4 Dependencies ▾    Apply       OK
```

```
No. of Churned Customers                                        ✕

IF [Select Metric] = 'No. of Churned Customers'
THEN SUM([Churners])
END

The calculation is valid.          5 Dependencies ▾    Apply       OK
```

```
Avg Customer Service Calls                                    ✕

IF [Select Metric] = 'Avg Customer Service Calls'
THEN AVG([Customer Service Calls])
END

                                                              ▶



────────────────────────────────────────────────────────
The calculation is valid.    5 Dependencies ▾    Apply        OK
```

For this comprehensive analysis, dual-axis charts are used for both age and group analysis. The x-axis of each of the chart represents – number of customers in group and the age intervals respectively. These age intervals are computed using calculated field in tableau. One y-axis is representing bar chart to show the metric which user chooses, and the other y-axis represents a line chart showing churn% for each group and age interval.

```
Age Intervals                                                ✕

INT(( [Age] + 5 ) / 5 ) * 5



                                                             ▶




The calculation is valid.    3 Dependencies ▾    Apply        OK
```

**Age and Group Analysis Dashboard -**
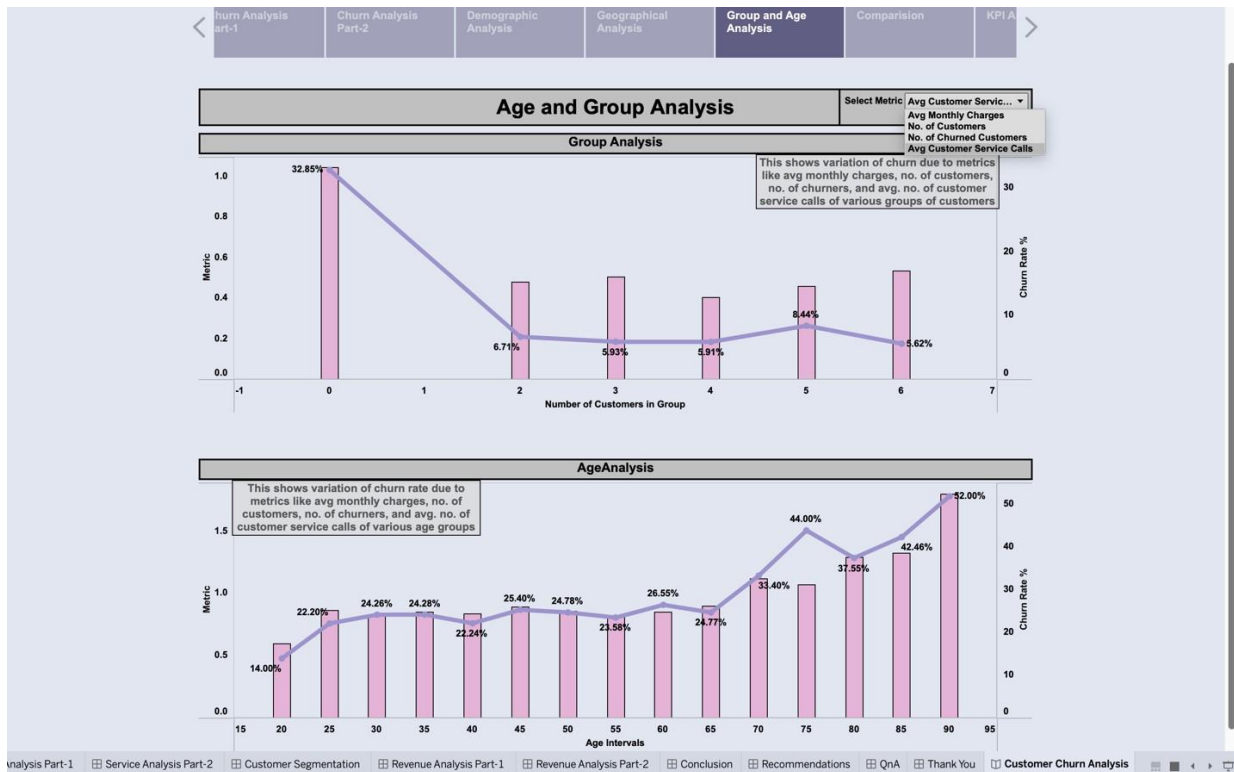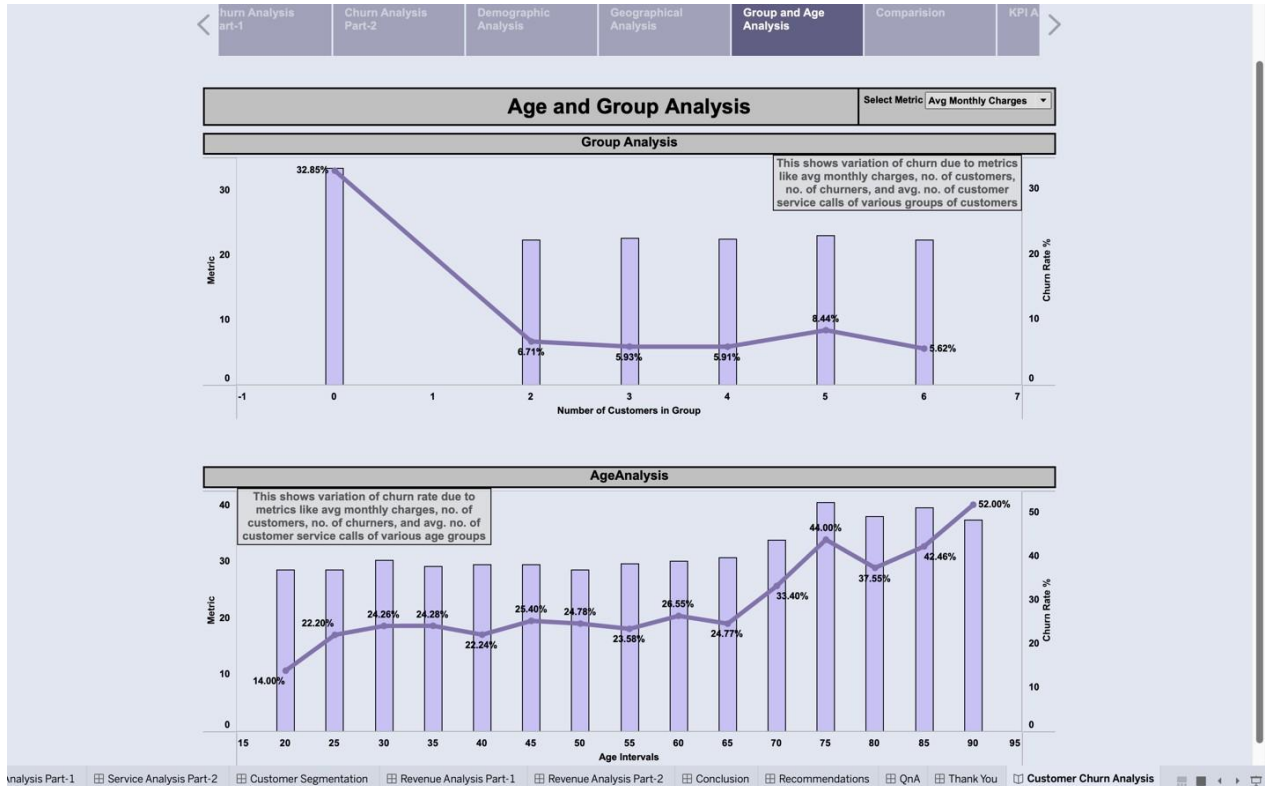
# KPI ANALYSIS:

In our data-driven exploration, we now dive into the Key Performance Indicator (KPI) analysis. KPIs are the compass that guides our decision-making, helping us understand the health of our business and the effectiveness of our strategies.

KPIs:

KPIs offer a versatile window into the performance of our organization. We've picked four essential KPIs for your exploration: "Revenue", "Total Data Charges", "Number of Churned Customers" and "Customer Service Calls". These KPI's are:

1. Avg. Revenue > $500
2. Total Data charges > $90
3. Churner Count > 50
4. Customer Service Calls > 35

These all are with respect to various churn reasons

**KPI Analysis Dashboard -**
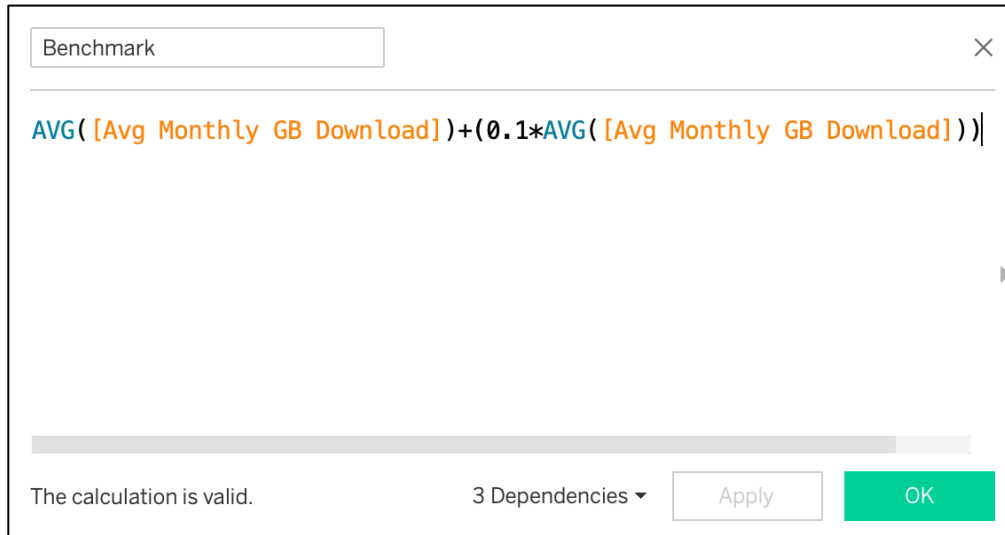
# SERVICE ANALYSIS

This analysis seeks to unravel the layers of customer service-related data, guiding us to comprehend the factors that influence customer behavior and churn.

## Monthly Data Consumption Insights

A bullet chart is made which displays how the average monthly data usage of our customers compares to set benchmarks. This chart acts as a compass, helping us gauge the expectations and needs of our customer base. This benchmark is a calculated field wherein expected avg monthly data usage of each customer is calculated and compared to current value. This benchmark is set as the increment in 10% data consumption from previous one.

```
Benchmark                                                    ×

AVG([Avg Monthly GB Download])+(0.1*AVG([Avg Monthly GB Download]))




                                                             ▶



The calculation is valid.        3 Dependencies ▾   Apply      OK
```

## The Impact of Plans and Payment Methods

We further explore the role of international plans, device protection and online backup plan, unlimited data plan on churn %. By analyzing churn percentages among customers with and without these plans, we gain insights into the impact of these plans on our churn rates.
The Donut Chart offers a visual representation of the interplay between payment methods and churn percentages, showing highest churn % in paper check payment customers.

Account Length and Monthly Charges

The line plot portraying the relationship between account length and monthly charges helps us grasp how account length and churn label influence customer spending. Churners tend to have more monthly charges compared to non-churners and the average monthly charges increase with tenure for both churners and non-churners.

Customer Service Calls and Churn

Similarly, the scatter plot tracking the number of customer service calls of churners and retainers shows their association with customer attrition. Clearly, non-churners have less frequency of customer service calls (0-2 times) while churners tend to have called customer service frequently (0-6 times). This shows that there is issue with our customer service executives, they are not trained enough to handle complaints and queries of customers.

Customer Tenure and Churn

The scatter plot of customer tenure and churn allows us to understand the correlation between customer loyalty and attrition. Churners are more concentrated around less tenure region, only few of them are around large tenure region. While retainers are concentrated evenly around tenure, majorly near more in tenure region. It shows mostly churners have left after doing business with us for a very short duration.

The insights gained from these analyses provide a foundation for tailored strategies aimed at enhancing customer experience and retention.
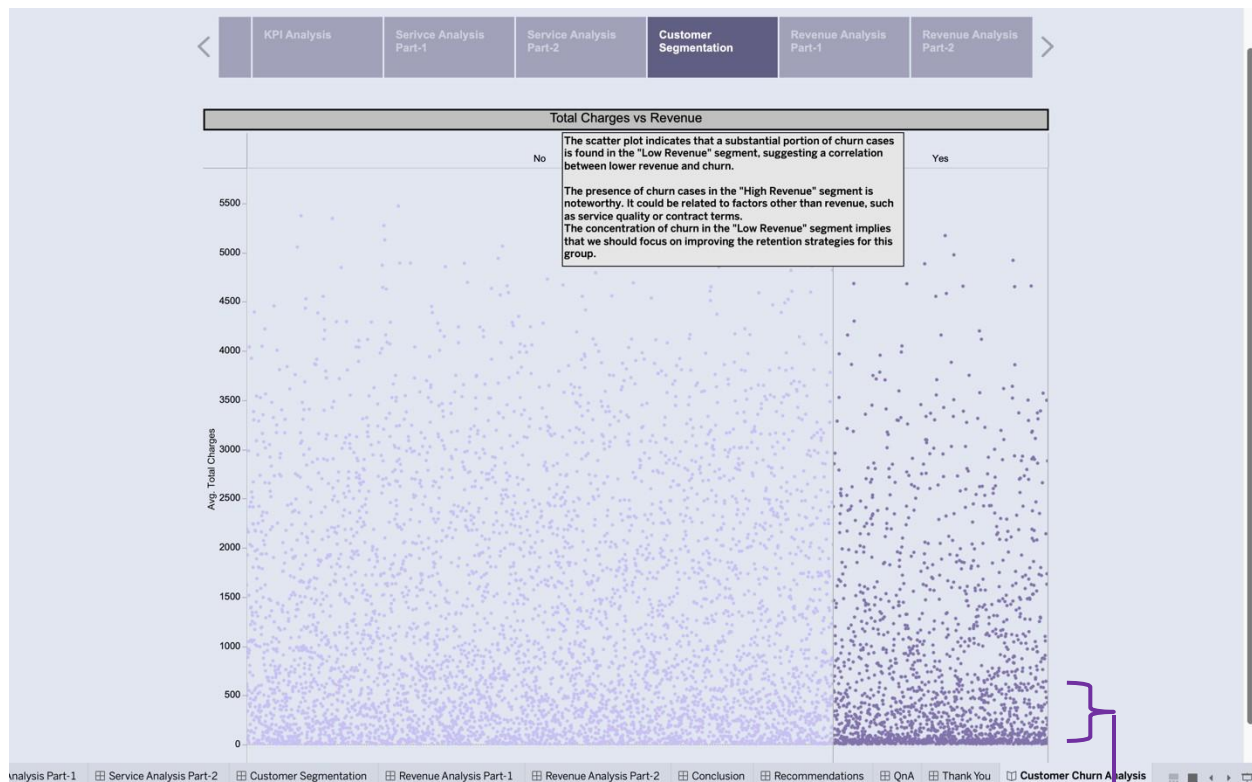
## Service Analysis Dashboards –
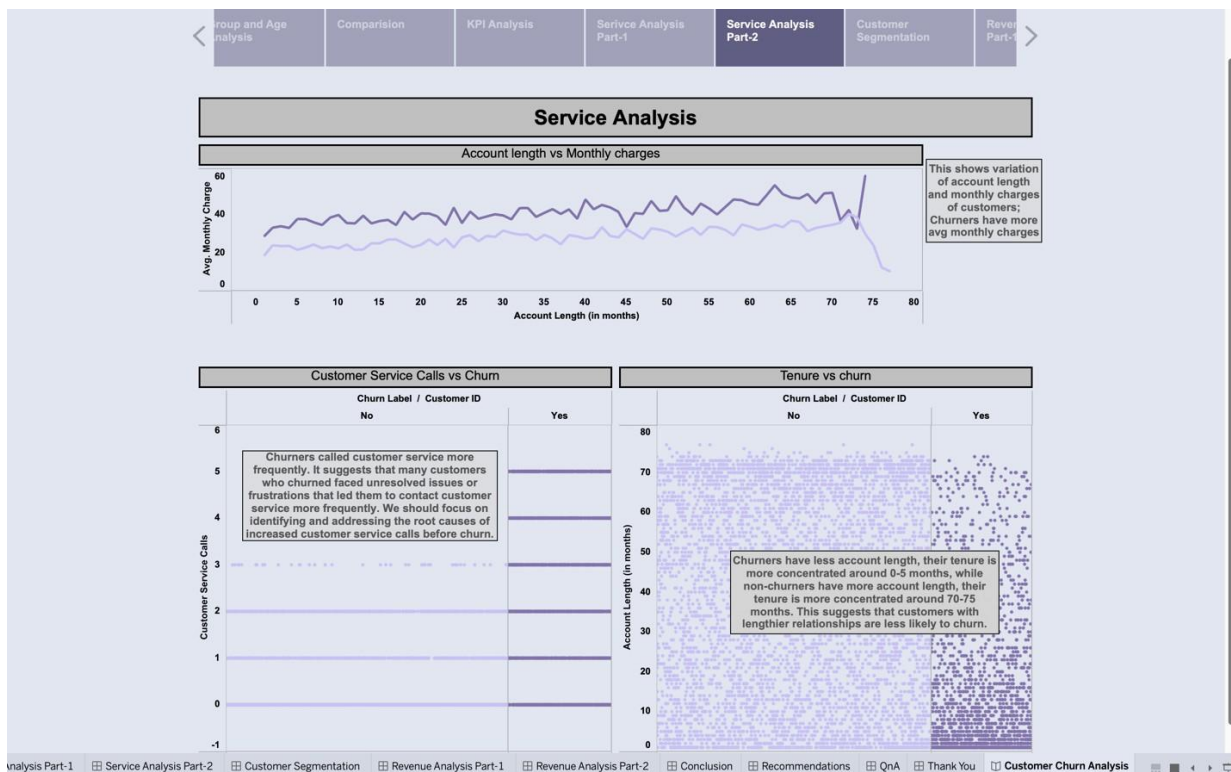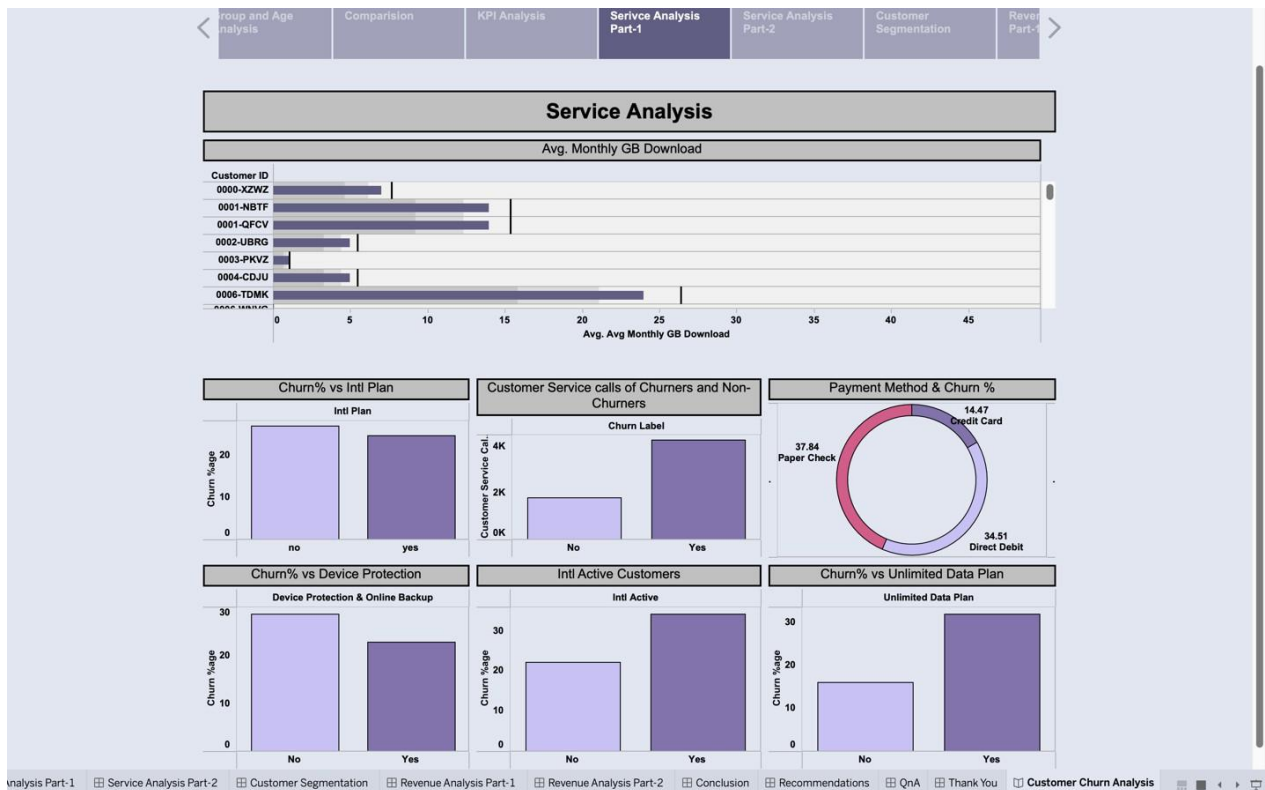
# CUSTOMER SEGMENTATION

Customers are viewed as High Revenue and Low Revenue Segments based on the revenue generated from them, and their total charges vs revenue was plotted as a scatter plot showing Total charges and Revenue trends in churners and non-churners.

**Customer Segmentation Dashboard -**



Non churners are concentrated evenly around all revenue segments

Churners are mostly concentrated around low revenue segment

# REVENUE ANALYSIS

We have segmented and analyzed customers based on their revenue contributions. Our Revenue analysis are as follows:

Revenue Groups:

We have segmented customers based on their spending habits using calculated fields. Then these revenue groups are analyzed with the help of bar-in-bar chart showing revenue lost and revenue gained for these groups. It shows that low and very low spending customers are making overall loss. A waterfall chart is also made showing running sum of revenue earned, showing moderate spending groups have more revenue earned.

```
Revenue Groups                                                    ×

IF [Total Charges] < 1000 THEN "Very Low Spending"
ELSEIF [Total Charges] >= 1000 AND [Total Charges] < 2000 THEN "Low Spending"
ELSEIF [Total Charges] >= 2000 AND [Total Charges] < 3000 THEN "Moderate Spending"
ELSEIF [Total Charges] >= 3000 AND [Total Charges] < 4000 THEN "High Spending"
ELSE "Very High Spending"
END
                                                                 ▶

The calculation is valid.              5 Dependencies ▾    Apply        OK
```

Tenure Groups:

Similarly, customers are segmented based on their account length. Then these groups are analyzed with the help of bar-in-bar chart. It shows that Elite customers hold major portion for revenue gain and newcomers are making overall loss. A pareto analysis is also made showing 80% of the revenue is earned due to top 20% of our customers (i.e., Elite customers).

```
Customer Tenure                                          ×

IF [Account Length (in months)] <= 5 THEN 'New Comer'
ELSEIF [Account Length (in months)] <= 15 THEN 'Loyalist'
ELSEIF [Account Length (in months)] <= 30 THEN 'Reguar'
ELSEIF [Account Length (in months)] <= 45 THEN 'Novice'
ELSEIF [Account Length (in months)] <= 55 THEN 'Elite'
ELSE 'Elite'
END
                                                         ▶

The calculation is valid.    5 Dependencies ▾    Apply        OK
```

Payment Method Groups:

Payment Method groups are also analyzed with the help of bar-in-bar chart. It shows that Direct Debit Payment customers hold major portion for revenue gain. Maybe this payment method is most convenient for users.

Contract Groups:

Customer groups are also analyzed which showed that two-year contract customers hold major portion for revenue.

Age Groups:

Age groups showed that elderly customers (60+ age) hold major portion for revenue losses.

Churn Reason:

Churn Reasons are analyzed for revenue losses due to each reason. Competitors are the main reason for revenue losses (46% of loss).

Retaining Valuable Customers:

Our segmentation analysis underscores the importance of retaining high-value customers, who significantly impact the financial well-being of our organization. These customers are more than just a revenue source; they are vital assets that warrant dedicated efforts to ensure their continued satisfaction and loyalty.

Tailoring Our Strategies:

The insights derived from revenue segmentation provide the foundation for fine-tuning our strategies. We can customize our retention initiatives to align with the unique needs and expectations of our high-value customers, guaranteeing exceptional experiences that match their financial contributions.

## Revenue Analysis Dashboard -
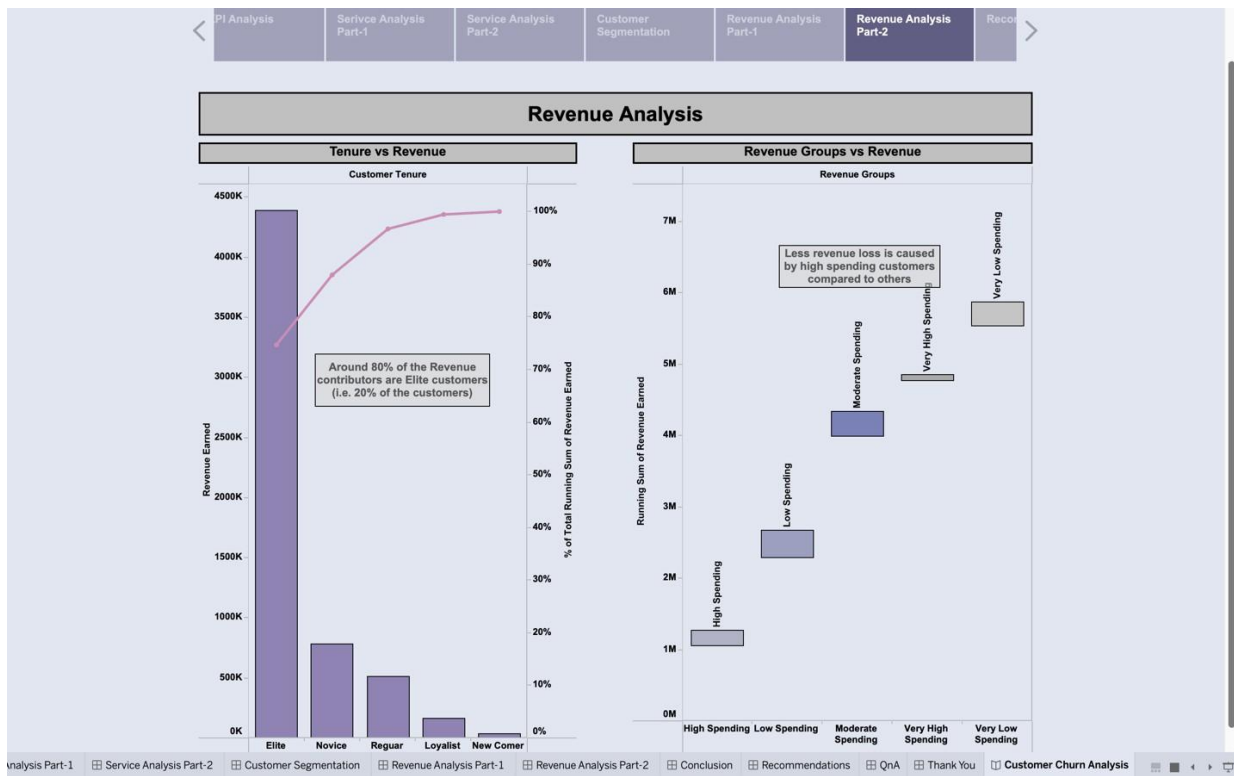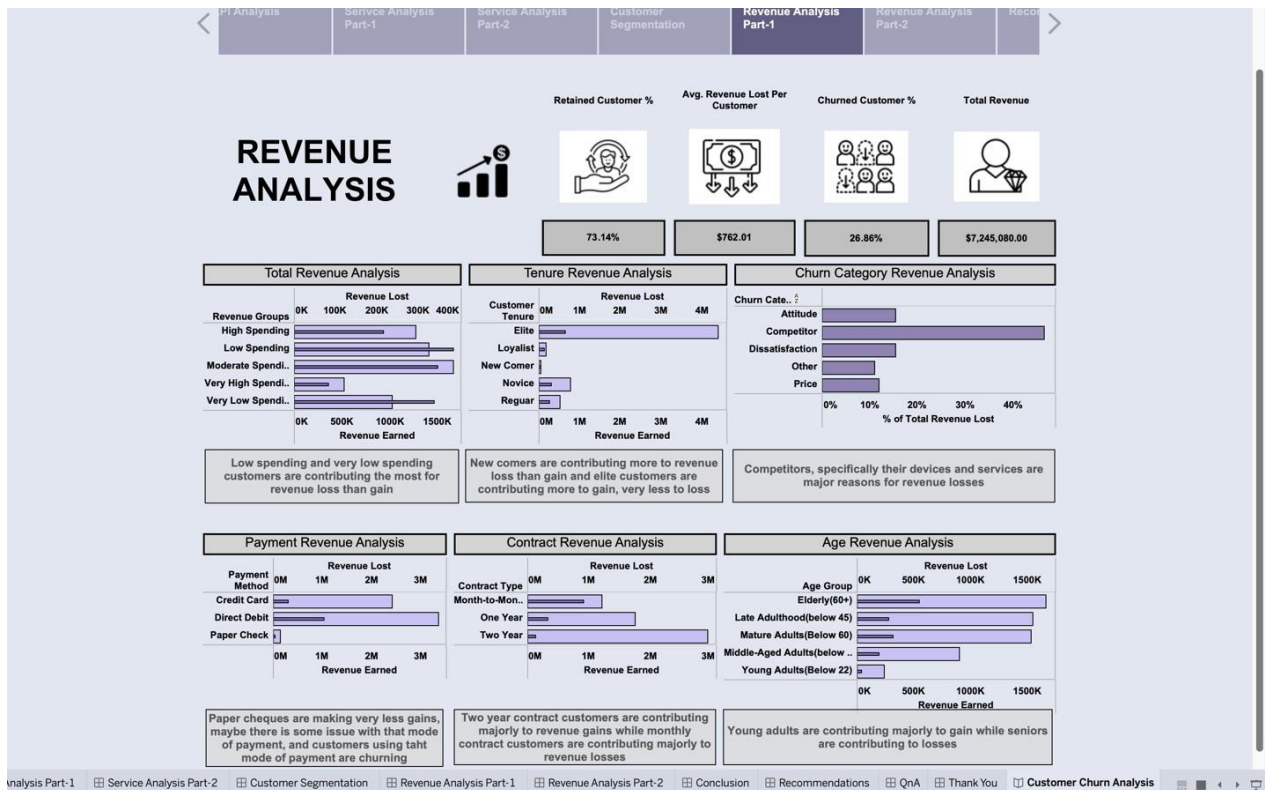
# RECOMMENDATIONS FOR ACTION

We present a series of key recommendations, each aimed at reducing churn, enhancing the customer experience, and optimizing revenue. These actionable strategies have the potential to transform Databel's approach and drive positive change within their organization. Some actions which Databel can implement are:

1. **Proactive Issue Resolution**: It can develop a robust system for proactive issue resolution, addressing customer concerns swiftly and efficiently. Ensure that support teams are equipped to resolve issues in a single interaction, minimizing the need for repeated contact.

2. **High-Value Customer Retention**: Can create exclusive retention programs for high-value customers, offering premium services, discounts, and incentives to solidify their loyalty.

3. **Age-Specific Engagement**: Tailor engagement strategies to cater to specific age groups. Understand the unique needs and expectations of different demographics and adjust services and communications accordingly.

4. **Optimize Pricing and Plans**: Conduct a thorough review of pricing and service plans to ensure they align with market standards and customer expectations. Offer transparent and flexible pricing structures.

7. **Data-Driven Decision-Making**: Foster a culture of data-driven decision-making within the organization. Ensure that insights from the analysis are integrated into daily operations and strategy planning.

8. **Continuous Monitoring**: Regularly review and adjust strategies to align with changing customer needs and market dynamics. Develop a robust customer feedback loop that actively solicits and acts on customer input. Use feedback to refine and enhance products, services, and support.

# CONCLUSION

Our analysis into the realm of Customer Churn Analysis has been a journey filled with revelations and insights. From the overarching churn rate to the finer details of customer behavior, this analysis has provided us with a clear roadmap for improvement.

As we conclude our exploration of customer churn, we do so with a sense of purpose and direction. The challenges we've uncovered are not obstacles but opportunities for growth. The opportunities we've identified are not mere possibilities but concrete paths to success.

Our vision for the future is one where customer retention is not just a goal but an integral part of our business. It's a future where commitment to service quality is paramount, and where tangible business growth becomes a reality.