



# SkyLink Churn Analysis: Understanding and Mitigating Customer Attrition

This project aimed at analyzing customer churn rates at SkyLink, a leading telecommunication company.

Our objective extends beyond mere churn calculation; we delve into the root causes of attrition and propose actionable strategies for mitigation. Utilizing Microsoft Power BI, we will transform raw data into insightful measures, calculated columns, and visually compelling reports to empower SkyLink with a deeper understanding of their customer base.

# Project Overview and Core Objectives

Our primary goal is to deliver intuitive Power BI reports and dashboards that provide SkyLink with a profound understanding of their customer churn dynamics. By meticulously analyzing the provided dataset, we will pinpoint the key factors driving churn, thereby enabling SkyLink to enhance customer relationship management and substantially reduce customer attrition. This project is designed to answer specific questions posed by SkyLink's stakeholders, translating complex data into clear, actionable insights.

## Key Deliverables

- Interactive Power BI Report for visual analysis.



# Understanding the SkyLink Dataset

The analysis leverages a comprehensive dataset detailing SkyLink customer information, accompanied by a metadata sheet providing precise definitions for each column. This rich data source allows for a multi-faceted exploration of customer behavior, service usage, and financial interactions. Key data points range from unique customer identifiers to detailed churn labels, providing the foundation for our analytical models.

## Demographics

Gender, Age, and indicators for "Under 30" and "Senior" customers.

## Contract & Payment

Contract Type (Month to Month, One Year, Two Year) and Payment Method (Credit Card, Direct Debit, Paper Check).

## Service Usage

Account Length, Call & Data Usage, International Plan details, and Customer Service Calls.

## Financials

Monthly Charges and Total Charges, offering insights into customer spending habits.

# Addressing Key Churn Questions

Our analysis will directly address critical questions posed by SkyLink, aiming to provide a granular understanding of churn patterns. We will investigate the current churn rate and identify the most prevalent churn categories, offering immediate insights into areas of concern. Furthermore, we will explore churn rate variations across different states and age groups, highlighting geographical and demographic vulnerabilities.



## Current Churn Rate & Category

What is the overall churn rate and which categories are most frequent?



## State & Age Group Variations

How does churn rate differ across various states and age segments?



## Payment Method & Contract Impact

What is the relationship between payment methods, contract types, account length, and churn?



## Service Calls & Extra Charges

Detailed analysis of customer service calls and the impact of extra charges on churn.



# Data Cleaning and Preprocessing for Accuracy

The integrity of our analysis hinges on robust data cleaning and preprocessing. This critical phase ensures that the dataset is accurate, consistent, and reliable, eliminating redundancies and standardizing values. We will meticulously identify and remove duplicate rows to maintain unique records, and strategically handle null values in 'Churn Reason' and 'Churn Category' to ensure comprehensive insights into customer attrition motivations.

1

## Removing Duplicates

Ensure unique customer records by eliminating any duplicate rows.

2

## Handling Null Values

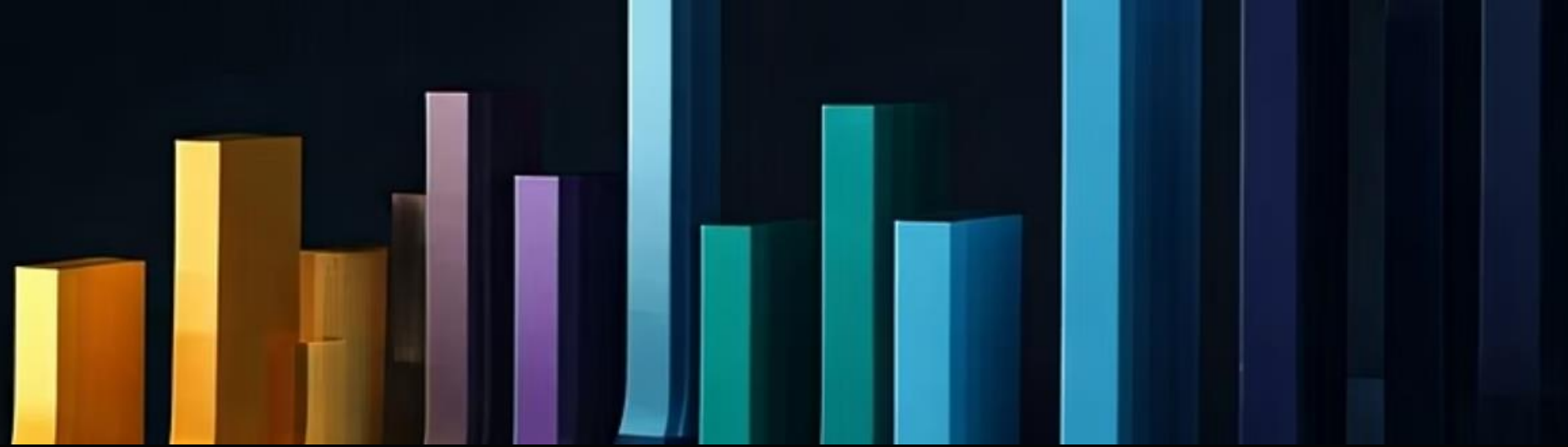
Replace nulls in 'Churn Reason' and 'Churn Category' based on 'Churn Label'.

3

## Replacing Values

Standardize entries like 'Intl Active' and 'Group' for consistent analysis.





# Creating Enriched Conditional Columns

To deepen our analytical capabilities, we will create several conditional columns that categorize existing data into more meaningful segments. This enhancement allows for more granular analysis and pattern identification, providing richer insights into customer behavior and churn drivers. For instance, 'Account Length' will be segmented into short-term, medium-term, and long-term categories, allowing us to understand churn trends across different customer lifecycles.



## Group Contract Categorization

Differentiate between "Group" and "Individual" contracts.



## Account Length Categorization

Segment customers by short-term, medium-term, and long-term account lengths.



## Data Usage Categorization

Classify data usage into low, medium, and high segments based on monthly downloads.



## Extra Charges Categorization

Categorize customers based on extra international and data charges.

# DAX Functions and Column Management

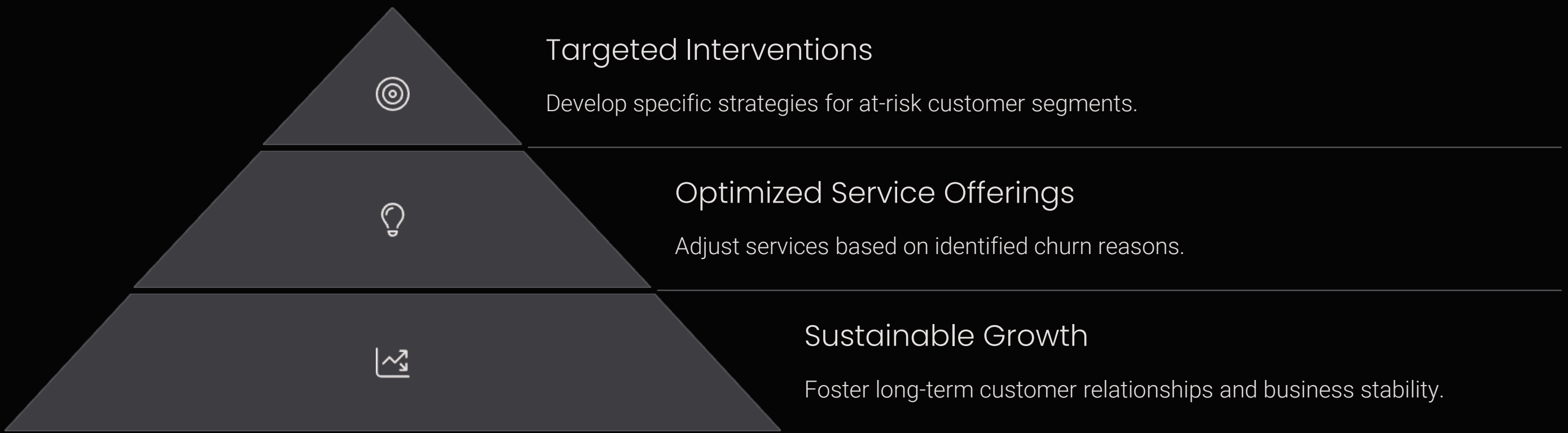
Leveraging Data Analysis Expressions (DAX), we will create a calculated column for 'State Full Name' to enhance geographical analysis. This function will convert state abbreviations into full names, improving readability and analytical depth within Power BI reports. Additionally, we will streamline the dataset by removing redundant or unnecessary columns, ensuring that our analysis remains focused and efficient, while preserving critical information for churn prediction.

The 'Under 30', 'Senior', and 'Phone Number' columns will be removed as they are either redundant with 'Age' or not essential for the core churn analysis objectives.

DAX Function	Create 'State Full Name' column using a SWITCH function for clarity.
Column Deletion	Remove 'Under 30', 'Senior', and 'Phone Number' for dataset optimization.
General Preprocessing	Includes renaming, null value replacement, and conditional column additions.

# Future Impact and Strategic Recommendations

The insights derived from this comprehensive churn analysis will empower SkyLink to develop targeted strategies for customer retention. By identifying the primary drivers of churn, the company can proactively address customer pain points, optimize service offerings, and tailor retention campaigns. Our findings will facilitate data-driven decision-making, leading to improved customer satisfaction and a significant reduction in churn rates, ultimately contributing to SkyLink's long-term growth and profitability.



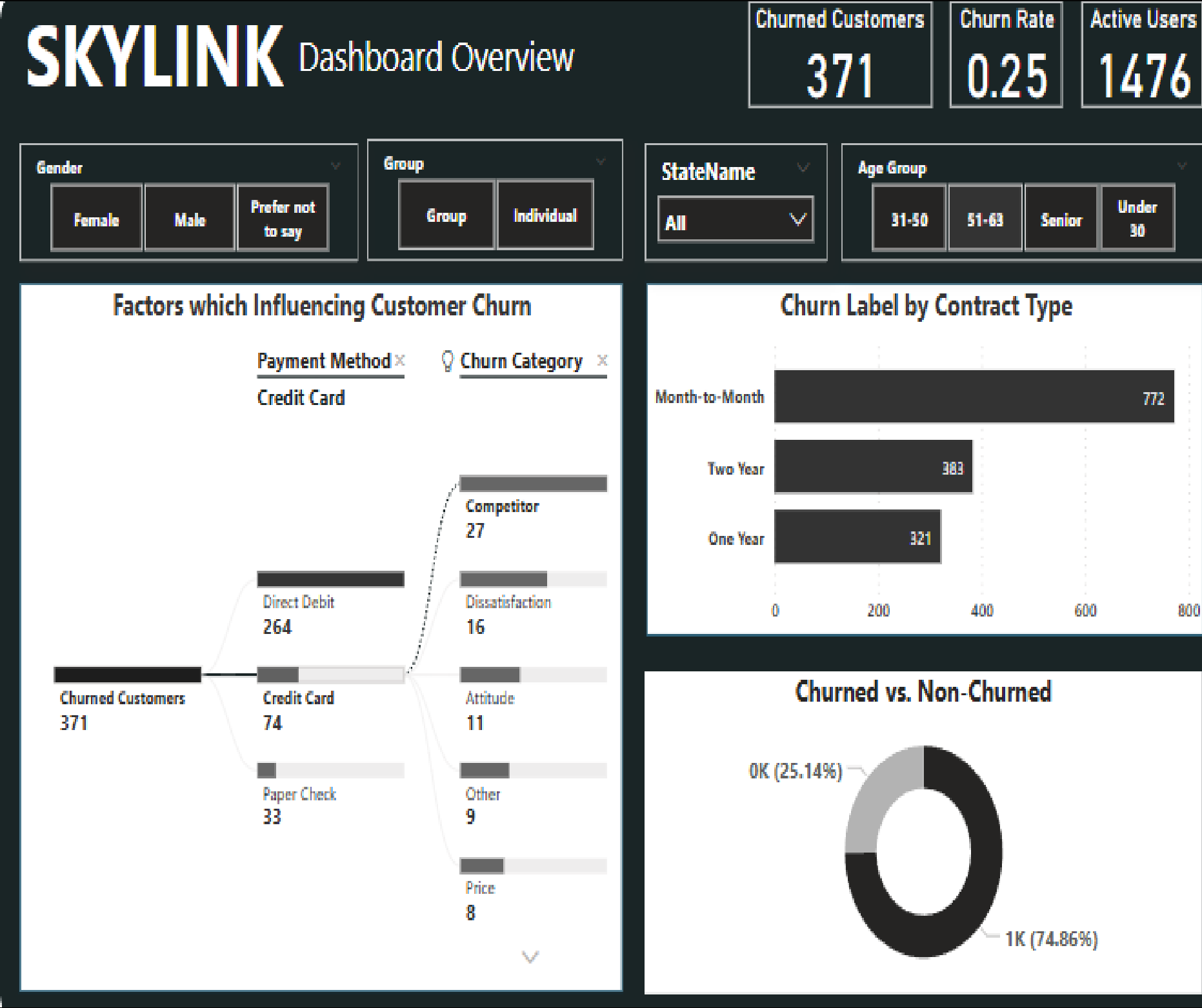


Insight:

The **highest churn** is among customers with **Month-to-Month contracts (772 churned)**, significantly more than **One Year (321)** and **Two Year (383)** contract types. Also, customers using **Direct Debit (264 churned)** experience more churn compared to Credit Card (74) and Paper Check (33).

Recommendation:

Promote longer-term contracts (One Year and Two Year) through incentives such as discounts or added services. These plans have **lower churn rates**, which helps improve customer retention and lifetime value. Additionally, investigate why **Direct Debit users** are churning and consider improving the billing experience for these customers.

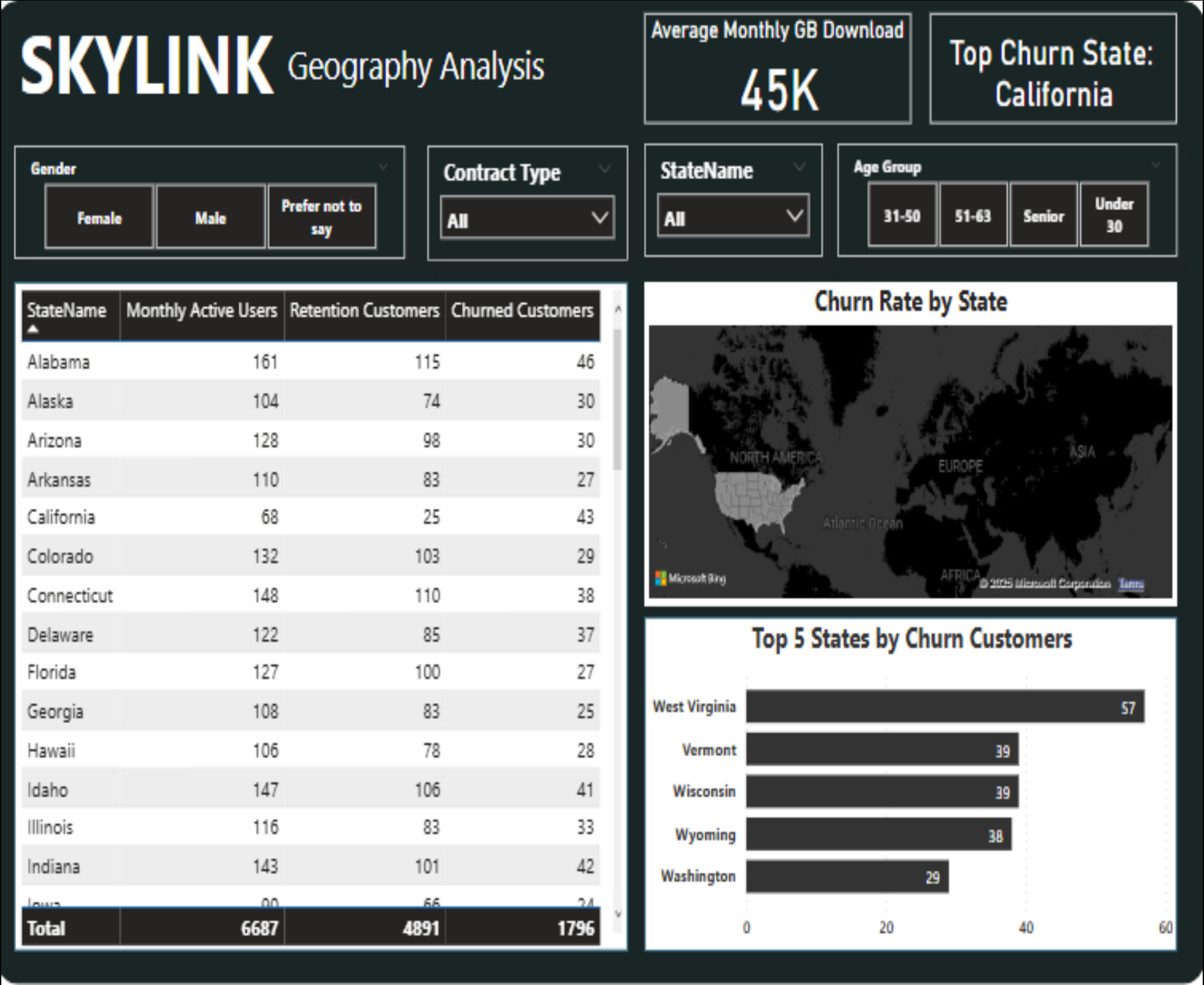


Insight:

California has the highest churn rate with 43 churned customers out of 68 monthly active users, indicating a significant retention challenge in that state.

Recommendation:

Investigate the specific factors contributing to the high churn rate in California, such as service quality or customer support issues, and implement targeted retention strategies to address these concerns.



Insight:

Customers with no unlimited data plan generate more customer service calls (11.7K) and extra data charges (1.9K) compared to those with an unlimited plan (10.9K calls). This suggests that limited plans may lead to higher dissatisfaction or issues, prompting more support interaction.

Recommendation:

Encourage customers to upgrade to unlimited data plans through targeted offers or discounts. This could reduce service calls, improve customer satisfaction, and potentially increase customer lifetime value.

