

TO MANAGERS:

Summary of Churn Data Analysis

Executive Summary

We conducted an analysis of customer churn data from a telecommunications company to understand the dynamics behind customer retention and churn. Our findings are integral for shaping strategies to improve customer loyalty.

Key Insights

Churn Rate: Approximately 14.5% of our customer base has churned. This is a critical metric indicating the need for improved retention strategies.

Contract Renewal: A promising 90.4% of customers have renewed their contracts, suggesting strong customer loyalty in this segment.

Data Plan Subscription: About 27.6% of customers subscribe to data plans, indicating a significant market segment.

Monthly Charges: The average monthly charge is \$56.27, with a notable range from \$14 to \$111.30.

Customer Service Calls: On average, customers make 1.56 service calls, a potential indicator of service satisfaction or issues.

Correlation Analysis

Monthly Charges and Customer Service Calls: A weak negative correlation ($r = -0.0269$) was observed, suggesting that higher charges marginally decrease the frequency of service calls.

Data Usage and Monthly Charge: A strong positive correlation ($r = 0.78177$) indicates that higher data usage significantly impacts monthly charges.

Conclusion

The data underscores that while monthly charges slightly affect service calls, they are significantly influenced by data usage. This insight is crucial for pricing strategies and service improvements.

Full Report: Churn Data Analysis

Introduction

We embarked on an analysis of the 'churn_data' dataset from our telecommunications company. The dataset included variables like churn status, account duration, contract renewal, data plan subscription, and monthly charges. Our goal was to identify key factors influencing customer churn.

Methodology

Using statistical methods like correlation tests and regression analysis, we explored relationships between different variables. Key focus areas were the impact of monthly charges on customer service calls and data usage.

Exploratory Data Analysis (EDA)

The initial EDA showed a churn rate of 14.5%, with the majority of customers renewing contracts and about a quarter subscribing to data plans. The average account duration was found to be 101 weeks, and the average monthly charge was \$56.27.

In-depth Analysis

Monthly Charges vs. Customer Service Calls: A Pearson correlation test revealed a weak negative correlation, suggesting that increased monthly charges slightly reduce the frequency of customer service calls.

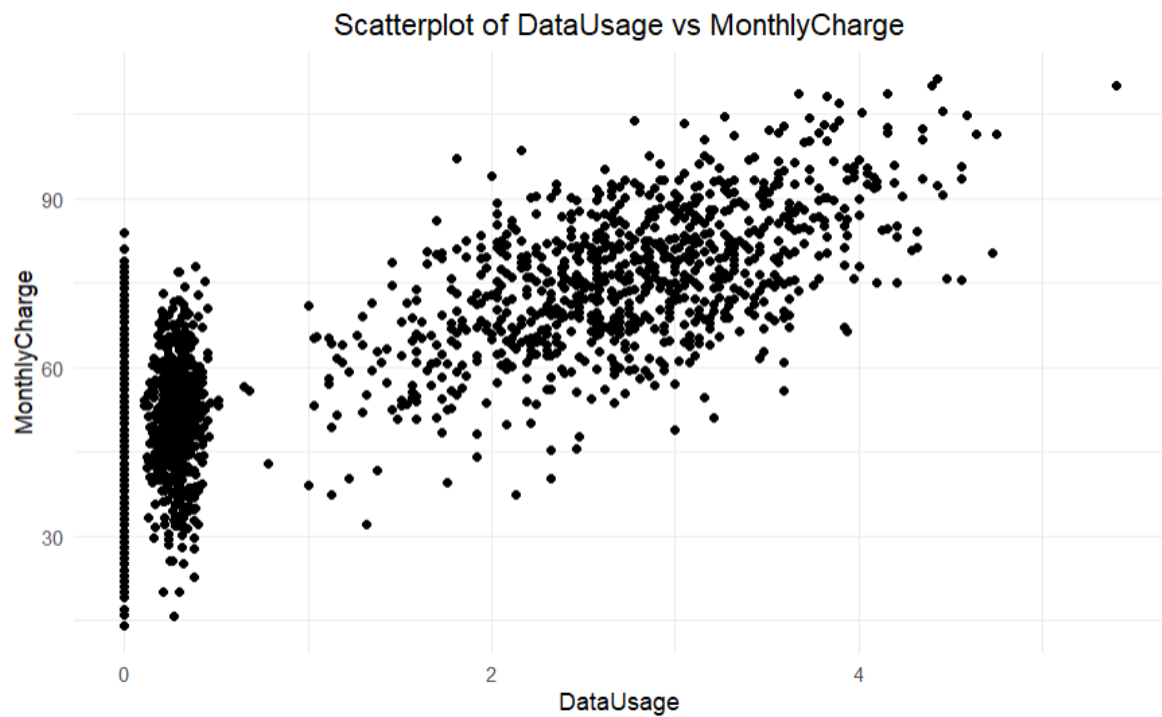
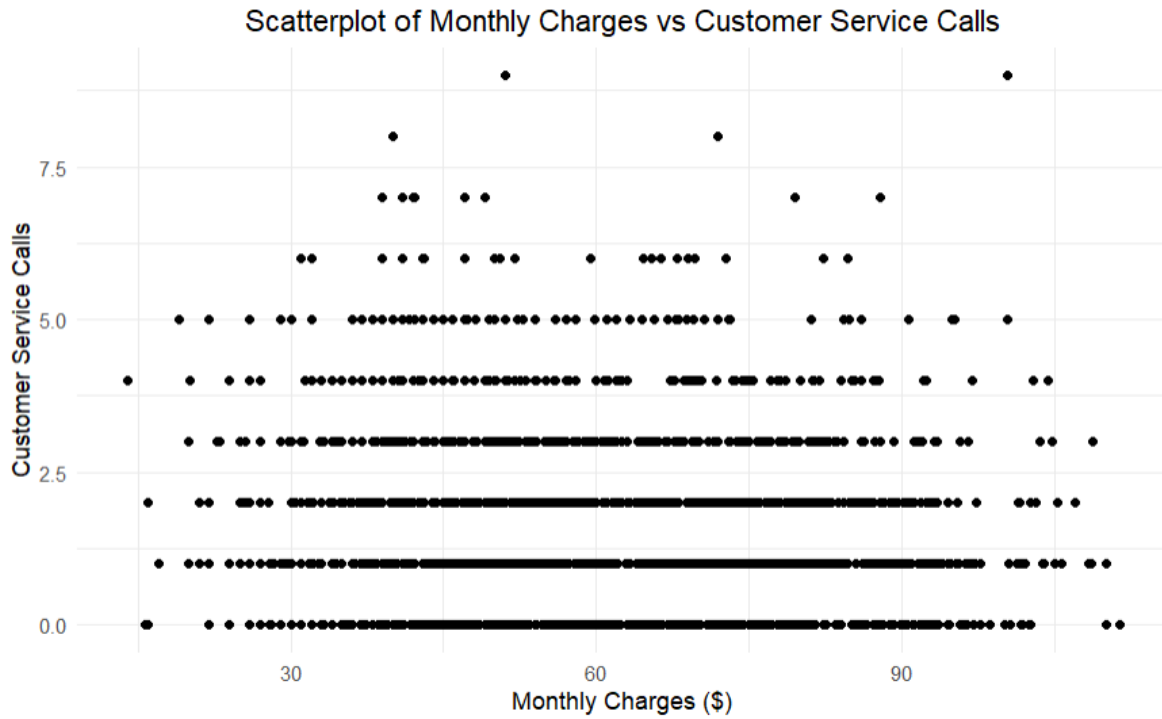
Data Usage vs. Monthly Charge: A strong positive correlation was found, indicating that customers with higher data usage tend to have higher monthly charges.

Conclusion

Our analysis suggests that while monthly charges have a minimal impact on the frequency of customer service calls, they significantly influence data usage. This finding is crucial for tailoring our pricing and data plans to enhance customer satisfaction and reduce churn.

Appendices

Scatterplots:



Note to Managers

This report, backed by statistical analysis and visualizations, provides a comprehensive view of our customer churn dynamics. The insights should guide strategic decisions in marketing, customer service, and product development.