

# Summary and Recommendations



## Telecom Churn Analysis

This report analyzes customer churn patterns using a telecom dataset to uncover behavioral trends and key risk factors contributing to customer attrition. The dataset was preprocessed by handling missing values, converting data types for accurate analysis, and recoding binary fields (e.g., "SeniorCitizen") for clarity. Various visualizations and group comparisons were used to derive actionable insights.

### Project Objective

To analyze customer churn patterns within a telecom dataset using data visualization and statistical techniques, with the goal of identifying key factors driving churn. The objective is to generate actionable insights that enable the business to reduce churn rates, improve customer retention, and enhance service offerings by targeting high-risk segments through data-driven strategies.



### Key Findings

#### 1. Churn Rate Overview

- Out of the total customer base, **1,869 customers** have churned.
- This represents **26.54%** of the entire dataset, signaling a **moderately high churn rate** that can impact revenue and growth if not addressed.

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#### 2. Senior Citizens Are More Likely to Churn

- Among senior citizens, approximately **42%** have churned, compared to around **24%** for non-senior citizens.
- This suggests age is a significant factor, and this demographic may require tailored communication or support to retain.

3. Tenure Strongly Correlates with Retention

- Customers with **shorter tenure (0–12 months)** show a churn rate of over **45%**.
  - In contrast, those with **more than 60 months of service** have a churn rate below **15%**.
  - This implies that customers who stay longer are more loyal, and early-stage engagement strategies are crucial.
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4. Contract Type is a Major Driver of Churn

- **Month-to-month** customers have a churn rate of approximately **43.9%**.
  - For customers with a **one-year contract**, churn drops to **11.5%**, and even further to **3.9%** for **two-year contract holders**.
  - This shows that **longer contractual commitments greatly improve retention**, potentially due to added benefits or inertia.
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5. Impact of Additional Services on Churn

Customers who did **not subscribe** to value-added services consistently showed **higher churn rates**:

Service	Churn Rate Without Service	Churn Rate With Service
Online Security	41.1%	14.6%
Online Backup	39.9%	17.5%
Tech Support	40.6%	15.2%
Device Protection	39.2%	16.1%
Streaming Services	Slight impact	Not as strongly correlated

This suggests that **upselling services like security, backup, and tech support can significantly reduce churn**.

## 6. Internet Service Type Also Influences Churn

- Customers with **Fiber optic internet** experience **higher churn (around 42%)** compared to those using **DSL (18.7%)**.
  - Customers with **no internet service** have minimal churn, likely due to limited service engagement.
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## Conclusion & Recommendations

- The overall churn rate of **26.54%** highlights a pressing need for proactive retention strategies.
- **Early-stage user support**, particularly in the first year, is essential to prevent new customer churn.
- Promoting **longer contract plans** and bundling **value-added services** (security, backup, tech support) can drastically improve retention.
- **Segmented campaigns** for senior citizens and fiber users may help address high-risk categories more effectively.

By addressing these patterns with focused strategies, the company can reduce churn, enhance customer satisfaction, and improve overall profitability.