

# Summary and Recommendation



## Executive Summary – Telco Customer Churn Analysis

This analysis explores the churn behavior of telecom customers and identifies key patterns across demographics, services, and subscription types. The goal is to highlight high-risk groups and service characteristics associated with customer retention or churn.

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### Overall Churn

- **26.54%** of customers in the dataset have churned.
  - This means roughly **1 in every 4 customers** decided to discontinue their service.
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### Demographic Insights

#### Senior Citizens

- **Yes: 42.0%** churn rate
- **No: 24.0%** churn rate
  - 🔍 **Senior citizens are 75% more likely to churn** than younger customers, making them a key risk group.

#### Gender

- The churn rate is **almost equal** between males and females, showing **no significant churn difference by gender**.
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### Internet Service & Features

#### Internet Service Type

- **Fiber optic: 42.0%** churn

- **DSL: 19.0%** churn
  - **No internet service: 8.0%** churn
    - 🔍 Customers with **fiber optic** are more than **twice as likely** to churn compared to DSL users. Those **without internet service churn the least**, likely due to fewer service expectations.
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## Security and Support Features

### Online Security

- **With OnlineSecurity: 15.0%** churn
- **Without OnlineSecurity: 40.0%** churn
- **No internet service: 8.0%** churn
  - ✅ Having OnlineSecurity **reduces churn by over 60%**, suggesting strong retention value.

### Tech Support

- **With TechSupport: 16.0%** churn
- **Without TechSupport: 39.0%** churn
- **No internet service: 8.0%** churn
  - ✅ Similar to OnlineSecurity, customers with TechSupport are **2.4x less likely** to churn.

### Online Backup

- **With Backup: Lower churn (~17-20%)**
  - **Without Backup: Higher churn (~35-40%)**
    - ✅ OnlineBackup also helps retain customers, though the effect is slightly less pronounced than TechSupport.
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## Phone Services

### Multiple Lines

- **Yes: 35.0%** churn
  - **No: 25.0%** churn
  - **No phone service: 10.0%** churn
    - 🔍 Customers with **multiple lines** are **40% more likely to churn** than those with a single line.
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## Streaming Services

### Streaming TV & Movies

- Customers who **do not use** streaming services (TV or Movies) tend to churn **less**, with rates around **20–25%**.
  - Those with **streaming services** churn closer to **35–40%**.
    - 🔴 This suggests that **non-streaming users** might be more stable, possibly due to simpler service needs.
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## Key Takeaways

- Focus retention efforts on **senior citizens**, **fiber optic users**, and those with **multiple lines**.
- Promoting and bundling services like **Tech Support**, **Online Security**, and **Backup** could **significantly reduce churn**.
- Simpler service packages (DSL + no streaming) appear to correlate with **lower churn**, indicating a more stable customer base.