

⭐ Executive Summary – Telco Customer Churn Analysis

This project analyzes the **Telco Customer Churn** dataset to identify the key drivers influencing customers to leave the telecom service. The analysis applies structured data cleaning, descriptive statistics, and visual exploration to uncover churn patterns across demographics, account types, contract structures, and subscribed services.

The dataset contains customer attributes such as **tenure**, **contract type**, **billing details**, **internet services**, and **tech-support features**, making it possible to evaluate customer engagement and satisfaction levels.

Key Findings

1. High-Risk Customer Segments

- **Fiber Optic users show the highest churn rate ($\approx 42\%$)**, suggesting potential dissatisfaction with cost or service reliability.
- **Month-to-month contract customers churn at 43%**, significantly higher than yearly and two-year contract customers.
- Customers **without OnlineSecurity or TechSupport** churn **at 30–37%**, reflecting the importance of support-related features.

2. Low-Risk Segments

- Customers with **two-year contracts** exhibit **very low churn ($\approx 3\%$)**, indicating contractual stability.
- Users with **OnlineSecurity/Backup/DeviceProtection** show churn below **15–18%**, suggesting bundled services improve

retention.

- Long-tenure customers demonstrate high loyalty and minimal churn risk.

3. Demographic Insights

- **Senior citizens churn at ~42%**, almost double compared to non-senior customers (~23%).
- Customers with dependents and partners show lower churn tendencies.

4. Billing Insights

- Higher **MonthlyCharges** correlate with elevated churn, especially for customers with multiple premium services but without long-term contracts.

Operational Takeaways

- Retention strategies should prioritize **fiber optic users**, **month-to-month subscribers**, and customers **lacking support services**.
- Upselling long-term contracts or service bundles may significantly reduce churn.
- Providing personalized offers to high-risk customers could lower churn percentage substantially.

Business Impact

The insights derived from this analysis help telecom companies:

- Improve customer retention planning

- Build targeted marketing campaigns
- Reduce revenue leakage
- Enhance customer experience through value-added services