



Executive Summary – Telco Customer Churn Analysis

This analysis aims to understand **why customers churn** and identify the key drivers of churn in the telecom dataset. The goal is to support strategic decision-making for customer retention.



Data Preparation

- Loaded and cleaned the dataset (`telco-customer-churn-data.csv`).
 - Handled blank values in `TotalCharges` (replaced with 0).
 - Converted `TotalCharges` to numeric.
 - Encoded `SeniorCitizen` as "yes"/"no" for clarity.
 - No duplicate or null values in critical fields.
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Churn Distribution

- **26.54%** of customers have churned, and **73.46%** have stayed.
 - This is a **significant churn rate**, indicating potential issues in services or customer satisfaction.
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Key Drivers of Churn

1. Gender

- Churn rate is **almost equal** across genders.
- Gender does **not significantly influence** customer churn.

2. Senior Citizens

- **Higher churn rate** among **senior citizens**.
- Visual: Count plot shows more churn (in %) from the senior group vs non-seniors.

3. Tenure

- Customers with **<5 months tenure** have a **very high churn rate** (majority in this group).
- Customers with **>1 year tenure** tend to stay, showing the importance of customer retention efforts in the early months.

4. Contract Type

- Month-to-month contract customers have:
 - **~43% churn rate**, which is the **highest**.
- In contrast:
 - **One-year contracts**: ~11% churn rate.
 - **Two-year contracts**: only **~3.8% churn rate**.
- Insight: **Long-term contracts retain more customers**.

5. Internet & Streaming Services

- Customers with **Fiber Optic** internet have a **much higher churn rate** than DSL or No Internet Service.
- Lack of **OnlineSecurity**, **TechSupport**, or **DeviceProtection** increases the chance of churn.
- Users **without streaming services (TV/movies)** churn less, showing that **upsold features may not lead to satisfaction** if not paired with support.

6. Phone Service

- No major difference in churn between those with or without **PhoneService**.
 - But those with **MultipleLines** show a **slightly higher churn rate**.
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Insights Summary

Feature		Insight
Churn Rate	26.54%	
Tenure	<5 months = high churn; >12 months = low churn	
Contract Type	Month-to-month = 43% churn; 2-year = 3.8%	
Senior Citizens	Higher likelihood of churn	
Internet Type	Fiber Optic users churn more	
Add-on Services	Lack of support services (Security, Backup, etc.) → higher churn	

Recommendations

1. **Promote longer contracts** with incentives (discounts, bundles).
2. **Engage early** – Focus on retention during the first 3–6 months.
3. Improve **tech support** and offer **value-focused add-ons**.
4. Consider **re-evaluating Fiber Optic service satisfaction**.