

## Telco Customer Churn Analysis – Executive Summary

### Objective

This exploratory data analysis focuses on identifying key drivers of customer churn in a telecommunications company. The analysis involved robust data cleaning, transformation, and visualization techniques to extract meaningful insights and patterns.

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### Data Preparation & Cleaning

**Missing Values:** The TotalCharges column had missing values, which were logically imputed with 0 where tenure was also 0.

**Data Formatting:** Binary features like SeniorCitizen were converted from 0/1 to "No"/"Yes" for better interpretability in charts and reports.

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### Key Insights from Visualizations

#### 1. Churn Rate Overview

Approximately 26.54% of the customers have churned, while 73.46% remain active.

This indicates that nearly 1 in 4 customers discontinue services — a significant concern that needs targeted retention strategies.

#### 2. Demographic Factors

Senior Citizens have a notably higher churn rate.

About 42% of senior citizen customers churned, compared to 23% of non-senior citizens.

Suggests that age-related segments may have unique needs or challenges with the service.

#### 3. Tenure Influence

Tenure is inversely related to churn:

Customers with 0–12 months tenure showed churn rates as high as 50%.

Those with >24 months had a churn rate below 10%.

This suggests a strong need to engage and retain customers early in their lifecycle.

#### 4. Contract Type Impact

Month-to-month contracts have the highest churn rate at 43%.

In comparison:

One-year contracts: ~11% churn.

Two-year contracts: ~3% churn.

Locking customers into longer contracts significantly reduces churn and increases customer stability.

#### 5. Payment Method Analysis

Electronic check users show the highest churn rate at 33.2%.

Other methods such as:

Credit card: 15.3% churn.

Bank transfer: 16.1% churn.

Mailed check: 18.9% churn.

Indicates electronic checks may correlate with lower customer satisfaction or financial instability.

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#### Conclusion & Strategic Recommendations

The analysis underscores four critical churn predictors:

Contract type

Tenure duration

Senior citizen status

Payment method

Actionable Recommendations:

1. Promote longer-term contracts (1-2 years) through discounts or perks.
2. Improve onboarding experience to reduce churn among new customers.
3. Targeted outreach to senior citizens to understand their pain points.
4. Discourage electronic check payments or investigate underlying reasons for dissatisfaction in this group.
5. Create loyalty programs for high-tenure customers to recognize and retain them.

By acting on these insights, the company can design more effective retention strategies, boost customer satisfaction, and reduce revenue loss due to churn.