

# Executive Summary – Customer Churn Analysis

## Objective:

To analyze customer churn behavior in the telecom industry using demographic, contract, service, and payment-related features to identify retention opportunities.

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## Key Visual Findings:

### 1. Overall Churn Rate

- From the **pie chart**, it is evident that:
  - **26.5% (1,869 customers)** churned.
  - **73.5% (5,174 customers)** stayed.

### 2. Customer Demographics

- **Senior Citizens:**
  - Pie chart shows **16%** of the customer base are senior citizens.
  - Among seniors, churn rate is higher than non-seniors.
- **Gender:**
  - The **count plot** reveals no significant churn difference between **male** and **female** customers.

### 3. Tenure Distribution

- Histogram shows:
  - Most churned customers are within **0–12 months** of tenure.
  - Longer-tenured customers (24+ months) tend to stay, highlighting the need to improve onboarding and early-stage engagement.

### 4. Contract Type Impact

- **Count plot by contract type** indicates:
  - **Month-to-Month** contracts have a churn rate of **~43%**.
  - **One-Year** contracts: **~11%** churn.
  - **Two-Year** contracts: **~3%** churn.
- **Insight:** Longer contracts significantly reduce churn.

### 5. Services and Features

From a grid of **count plots**:

- **Without Add-ons (OnlineSecurity, TechSupport):**
  - Churn rate often exceeds **45–50%**.
- **StreamingService Users:**
  - Slightly lower churn, indicating higher engagement.
- **PhoneService:**
  - Customers **with phone service** show **lower churn** compared to those without.

## 6. Internet Service Type

- Visual data shows:
  - **Fiber Optic** users: highest churn (~**42%**).
  - **DSL** users: moderate churn (~**20%**).
  - **No internet service**: lowest churn (~**8%**).
- **Recommendation:** Focus retention efforts on fiber optic customers.

## 7. Payment Method Impact

- **Bar chart of Payment Methods** indicates:
  - **Electronic Check** users: ~**45% churn rate** (highest).
  - **Mailed Checks**: ~**22–25%** churn.
  - **Auto-pay methods** (Bank Transfer, Credit Card): ~**15–20%** churn.
- **Insight:** Auto-payment adoption reduces churn risk.

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## Recommendations

- **Incentivize Long-Term Contracts:** Offer discounts for 1–2 year contracts.
- **Upsell Add-on Services:** Bundle security/support with basic plans.
- **Improve Early Engagement:** Especially in the first 3 months of service.
- **Target High-Risk Segments:**
  - Fiber Optic customers
  - Month-to-month and electronic check users
- **Promote Auto-Pay Options:** Encourage auto-pay setup during onboarding.