

Telco Customer Churn Prediction and Retention Analysis

Executive Summary

The analysis was conducted on **7,043 customer records** with 21 variables, covering demographics, service subscriptions, billing methods, contracts, and churn status. The study aimed to uncover drivers of churn and provide strategic recommendations for customer retention.

Key Findings

1. Overall Churn

- **26.5% of customers (≈1,869 out of 7,043)** discontinued services.
- This represents a significant retention challenge since 1 in 4 customers leave.

2. Demographics & Customer Profile

- **Senior Citizens:** Churn rate is nearly **42%**, far above the overall average.
- **Partner/Dependents:**
 - Customers **without partners** churned at **32%**, vs. **20%** for those with partners.
 - Customers **without dependents** churned at **31%**, vs. **16%** for those with dependents.
- **Gender:** Churn is almost identical across male and female customers (~27%).

3. Tenure & Contracts

- **New Customers:** Churn is highest in the **first 1–2 months (>50%)**, showing dissatisfaction early.
- **Long-term Customers:** Churn drops drastically after **2+ years**, falling below **15%**.
- **Contract Type:**
 - **Month-to-Month contracts:** **43% churn rate**.
 - **One-year contracts:** **11% churn rate**.

- **Two-year contracts: 3% churn rate.**

4. Services Subscribed

- **Fiber Optic Internet:** Churn rate **42%**, compared to **19%** for DSL.
- Customers **without Tech Support** churn at **41%**, vs. **15%** for those with Tech Support.
- Customers lacking **Online Security** churn at **40%**, compared to **15%** with it.
- Add-on services like **Online Backup, Device Protection, Streaming** lower churn when bundled.

5. Billing & Payment Methods

- **Paperless Billing** customers churn at **33%**, vs. **23%** for those receiving paper bills.
- **Payment Method:**
 - **Electronic check** has the highest churn at **45%**.
 - **Credit card auto-pay** churn: **15%**.
 - **Bank transfer auto-pay** churn: **16%**.
 - **Mailed check** churn: **19%**.

Strategic Implications

1. **Promote Long-Term Contracts** – Encourage migration from month-to-month to 1–2 year contracts via loyalty programs, price discounts, and rewards.
2. **Focus on At-Risk Groups** – Senior citizens, short-tenure customers, and those paying by electronic check should receive targeted retention campaigns.
3. **Bundle Value-Added Services** – Highlight Tech Support, Security, and Device Protection as retention tools. Bundled packages could reduce churn by over **20 percentage points**.
4. **Payment Method Shift** – Educate and incentivize customers to switch from electronic check to **auto-pay methods**, which cut churn by **30%+**.
5. **Customer Onboarding & Engagement** – Improve early customer experience during the **first 2 months**, where over **50% churn** occurs