

Executive Summary – Telecom Customer Churn Analysis

This exploratory data analysis (EDA) investigates patterns and drivers of customer churn in a telecom dataset, focusing on service usage, customer demographics, and billing information. The visual and statistical insights aim to support strategic retention decisions.

🔍 Key Findings:

- **Churn Patterns:** Customers with short tenure, month-to-month contracts, and electronic check payments showed higher churn rates.
 - **Service Influence:** Lack of services such as Tech Support, Online Security, and Device Protection correlates with increased churn.
 - **Demographics Impact:** Senior citizens, customers without partners or dependents, and those with higher monthly charges tend to churn more.
 - **Visual Insights:** Count plots across various service categories (e.g., InternetService, StreamingTV, PhoneService) reveal distinct churn behaviors, helping identify risk segments.
1. **Overall Churn Rate:**
 - Approximately **26.5%** of customers have churned.
 2. **Customer Tenure:**
 - Nearly **50% of churned customers** had a tenure of **less than 12 months**, indicating early-stage churn vulnerability.
 3. **Contract Type:**
 - **Month-to-month contract customers** represent over **85% of churned users**, highlighting the lack of long-term commitment as a strong churn driver.
 - In contrast, customers on **two-year contracts** show significantly lower churn (<5%).
 4. **Payment Methods:**
 - **Electronic check** users contribute to around **45% of total churn**, while **automatic payment methods** like credit cards are associated with better retention.
 5. **Senior Citizens:**
 - **42% of senior citizens** churned, compared to **22% of non-senior citizens**, making them a high-risk group.
 6. **Monthly Charges:**
 - Customers paying **more than \$70 per month** churn at a rate of over **35%**, especially those without bundled or value-added services.
 7. **Value-Added Services:**
 - Churn is higher among those **without** services like:
 - **Tech Support** (Churn rate: ~38%)
 - **Online Security** (Churn rate: ~41%)
 - **Device Protection** (Churn rate: ~36%)
 - Customers **with these services** tend to have churn rates **below 20%**, suggesting that bundled support features encourage retention.
 8. **Internet and Streaming Services:**
 - Customers using **Fiber optic internet** churn significantly more (~37%) than DSL users (~20%).

- **Streaming service users** without corresponding protection services also show higher churn.
 - 9. **Partner & Dependents:**
 - Customers **without a partner or dependents** show a churn rate of over **32%**, compared to **18%** among those with dependents, indicating family-linked customers are more loyal.
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★ **Strategic Insights:**

- **Retention Focus:** Target **month-to-month, high-charge, and service-light** customers with incentives, bundles, or loyalty programs.
- **Feature Upsell:** Promote **Tech Support** and **Security services** to reduce churn in high-risk segments.
- **Senior Citizen Strategy:** Offer specialized plans and support to improve retention among elderly customers.