Executive Summary: Telecom Customer Churn Analysis

Summary Report

This project conducts an Exploratory Data Analysis (EDA) on a telecom customer churn dataset, aiming to uncover factors influencing customer attrition. The dataset contains 7,043 records with 21 attributes, including customer demographics, services used, and account information.

Key Insights & Observations:

1. Churn Overview:

- Approximately 26.5% of customers have churned, while 73.5% have remained loyal.

- Visuals such as count plots and pie charts clearly demonstrate this imbalance.

2. Demographic Influence:

- Gender has minimal impact on churn; churn rates are nearly identical for male and female customers.

- Senior Citizens (16.2% of total customers) have a higher churn rate (approx. 42%) compared to non-senior citizens (approx. 24%).

3. Service Usage Patterns:

- Customers not using services like OnlineSecurity, TechSupport, or DeviceProtection show significantly higher churn rates.

- For instance, 75% of customers without OnlineSecurity churned, while only about 20% of those with it did.

4. Tenure and Contract Type:

- A strong link exists between customer tenure and churn: over 50% of customers with tenure <12 months

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have churned.

- Month-to-month contract holders show over 40% churn, while one-year and two-year contracts have significantly lower churn rates (~10% and ~3% respectively).

5. Internet and Streaming Services:

- Customers with no internet service rarely churn (under 10%), indicating lower risk in this segment.

- Users of streaming services (TV and movies) have moderate churn risk, but combining them with other missing services increases churn probability.

6. Payment Methods:

- Customers using electronic checks show the highest churn (~45%), whereas those on automatic bank transfer or credit card methods show much lower churn rates (under 15%).

Conclusion:

The analysis shows that contract type, tenure, service subscriptions, and payment method play key roles in predicting churn. Enhancing service bundling, incentivizing longer contracts, and shifting users from electronic checks to automatic payment modes could effectively reduce churn.