

# Customer Churn Analysis

## Overview

This analysis explores customer churn patterns using a dataset that includes various service usage details, demographic factors, and payment methods. The goal is to identify key reasons behind customer churn and provide actionable insights to improve retention rates.

## Key Findings

### 1. Overall Churn Rate:

- The data reveals that **26.54% of customers have churned**, meaning that roughly **one in four customers** have discontinued their service.
- Understanding the driving factors behind churn is crucial for business strategies to improve customer retention.

### 2. Demographic Insights:

- **Senior Citizens are more likely to churn** (approximately **42% of senior citizens** have left, compared to **24% of non-senior citizens**).
- **Tenure strongly influences churn:** Customers who stayed for **less than 6 months** have a **churn rate of nearly 70%**, whereas those with a tenure of **more than 5 years** have a churn rate of only **10%**.

### 3. Service Subscription Impact:

- **PhoneService:** Customers with PhoneService have a churn rate of **22%**, whereas those without it have a higher churn rate of **31%**.
- **InternetService:** Customers using **DSL Internet** show lower churn rates (**23%**), while those with **Fiber Optic Internet** have a significantly higher churn rate (**42%**).
- **Additional Services Matter:**
  - **OnlineSecurity:** Customers without this service have a **churn rate of 46%**, compared to only **15%** for those who have it.
  - **TechSupport:** Similar to OnlineSecurity, customers without TechSupport have a churn rate of **45%**, compared to only **16%** for those who have it.
  - **StreamingTV & StreamingMovies:** Churn is noticeably higher among those who **do not subscribe** to these services.

### 4. Payment Method Analysis:

- Customers using **Electronic Check** as a payment method have the **highest churn rate (45%)**, compared to only **16% for those using Bank Transfer or Credit Card Payments**.
- This suggests that **customers paying via electronic check may perceive more inconvenience or lack incentives to continue their subscription**.

## Visual Insights & Charts

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- Various charts were created to **visualize churn distribution** across different factors, helping to identify patterns and correlations.
- **Pie Charts:** Showed the overall churn distribution.
- **Bar Charts:** Helped compare churn rates across different services and demographics.
- **Stacked Bar Charts:** Illustrated the impact of multiple factors on churn, such as service combinations and payment methods.

## Conclusion & Recommendations

- **Enhance Customer Retention Strategies:** Target new customers in their **first six months**, as they are the most likely to leave. Implement **onboarding engagement programs** to increase early retention.
- **Encourage Adoption of Retention Services:** Customers who subscribe to OnlineSecurity and TechSupport churn significantly less. Offer **discounted bundles** to encourage adoption.
- **Re-evaluate Electronic Check Payment Method:** Consider offering **incentives for switching to auto-payment methods** such as Bank Transfer or Credit Card, which have lower churn rates.
- **Improve Fiber Optic Customer Retention:** Since **Fiber Optic users have a high churn rate (42%)**, investigate potential service issues and explore ways to improve satisfaction.

By addressing these factors, the company can **effectively reduce churn and improve customer loyalty** through targeted retention strategies.