

## Summary and Recommendations: Telco Customer Churn Analysis

### Objective:

The analysis aims to identify patterns and factors contributing to customer churn in a telco company, enabling data-driven strategies to improve retention rates.

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### Key Findings:

#### 1. Churn Distribution:

- Approximately **26.5%** of customers have churned, as visualized through bar plots and pie charts.
- Payment methods, contract types, and monthly charges emerged as key influencers of churn behavior.
- Customers who opted for **month-to-month contracts** and **electronic check payments** exhibited significantly higher churn rates compared to others.

#### 2. Demographic Insights:

- Only **16%** of customers are senior citizens, indicating a younger customer base that may value flexibility and digital services over traditional models.
- Customers with **partners (49%)** and **dependents (30%)** showed lower churn rates, suggesting that family or household stability contributes to retention.
- Single or independent customers appear more likely to churn, potentially due to lifestyle or financial flexibility.

#### 3. Service and Billing Insights:

- **Electronic check** is the preferred payment method for **34%** of customers, but it has the **highest churn rate (45%)**, implying dissatisfaction with this payment method.

- Customers on **month-to-month contracts (55%)** face a **43% churn rate**, highlighting the lack of long-term commitment and vulnerability to competitor offers.
- Customers with **higher monthly charges (average \$74.20)** and **low tenure (average 20 months)** exhibit elevated churn rates, reflecting pricing sensitivity and limited service satisfaction among newer customers.
- **Tenure analysis** reveals that customers with less than **6 months of service** are particularly vulnerable to churn, indicating a critical period for customer engagement.

#### 4. Data Quality and Preprocessing:

- No missing values were detected, ensuring reliable analysis and insights.
- Blank entries in **TotalCharges** were identified, cleaned, and converted to numeric values to avoid data inconsistencies.
- Categorical variables, such as **SeniorCitizen**, were standardized for easier interpretation (e.g., **yes/no**).

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### Recommendations:

#### 1. Billing Optimization:

- Introduce more user-friendly payment options and address dissatisfaction with **electronic check** payments by enhancing their reliability and ease of use.
- Offer discounts for switching to automated or paperless billing methods.

#### 2. Contract Enhancements:

- Develop targeted campaigns to promote annual or multi-year contracts, offering incentives such as discounts or bundled services.
- Focus on retaining customers during the first **6 months** by offering flexible plans or free trial extensions to increase commitment.

### 3. Customer Engagement:

- Proactively engage high-risk customers (e.g., low tenure, high charges) with loyalty programs, personalized offers, and enhanced customer support.
- Implement satisfaction surveys and feedback channels to address concerns before churn occurs.

### 4. Data Monitoring and Insights:

- Regularly update data processing pipelines to maintain data integrity and capture evolving customer trends.
  - Leverage predictive modeling tools to identify churn risks early and trigger retention strategies.
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### Conclusion:

This analysis highlights critical factors contributing to customer churn, focusing on payment methods, contracts, and tenure. Customers with **month-to-month contracts**, **electronic check payments**, and **higher charges** are at higher risk of churning. Targeted strategies addressing these areas—such as improved payment methods, long-term contract incentives, and early engagement—can significantly enhance customer retention and satisfaction.

### Acknowledgment

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