

# Summary And Recommendation

## Executive Summary

This analysis delves into customer churn patterns using descriptive statistics and data visualizations, providing actionable insights for enhancing customer retention strategies. The findings are summarized below:

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### 1. Churn Distribution

- **Proportion of Churn:** From a total customer base, **26.54%** of customers have churned, as shown by both countplot and pie chart visualizations.
  - This indicates that approximately **1 in 4 customers** are leaving, representing a significant revenue loss opportunity.
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### 2. Service-Based Insights

- **InternetService:**
    - Customers using **Fiber optic** service exhibit the **highest churn rate (42%)**, compared to those with **DSL (20%)** or no Internet service (10%).
    - This suggests potential dissatisfaction with Fiber optic services.
  - **OnlineSecurity and TechSupport:**
    - A large percentage of churned customers lack **OnlineSecurity (85%)** and **TechSupport (78%)**, highlighting these as key drivers of customer retention.
  - **PhoneService and MultipleLines:**
    - Churn is slightly higher among customers with **MultipleLines (30%)**, compared to those with single-line service (25%).
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### 3. Demographic Patterns

- **SeniorCitizen Status:**
  - Churn rates are significantly higher for **SeniorCitizens (41%)** compared to younger customers (24%).
- **Gender and Partner Status:**
  - Male and female customers churn at similar rates (~26%), but churn is lower among customers with partners (~20%), compared to those without (~32%).
- **Dependents:**

- Customers without dependents churn more often (~30%) than those with dependents (~17%).
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#### 4. Tenure and Billing Patterns

- **Tenure:**
    - Short-tenured customers (1–12 months) account for the majority of churn (~60%), while long-tenured customers (36+ months) exhibit the lowest churn rate (~10%).
    - This indicates that retention efforts should focus on newer customers.
  - **Billing and Contract Types:**
    - Customers with **month-to-month contracts** churn at an alarming rate (~45%), compared to **1-year (12%)** or **2-year (5%)** contracts.
    - Those using **electronic checks** as a payment method churn at **40%**, significantly higher than other payment methods like credit cards (10%).
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#### 5. Payment and Revenue Implications

- Customers with higher monthly charges are more likely to churn. The churn rate is **50%** for customers paying over \$100/month, compared to **15%** for those paying less than \$50/month.
  - The lack of bundled services, such as streaming or security features, is a common trait among churned customers, suggesting that bundling may enhance retention.
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#### Key Recommendations

1. **Enhance Service Offerings:**
  - Address issues with Fiber optic service quality and improve offerings for OnlineSecurity and TechSupport.
2. **Focus on Retention for New Customers:**
  - Develop targeted strategies to engage customers in their first year, such as loyalty rewards or discounts.
3. **Promote Long-Term Contracts:**
  - Offer incentives for customers to switch from month-to-month to longer-term contracts.
4. **Introduce Bundled Packages:**
  - Increase the value proposition by bundling services like streaming, security, and tech support.