This analysis examines the key factors influencing customer churn in a telecom service provider's business. The insights are derived from a combination of descriptive statistics, visual exploration, and grouped comparisons.

✅ 1. Overall Churn Rate

- **26.54%** of total customers have churned, as visualized in the pie chart.
- This high churn rate suggests the need for improved customer retention strategies and better service experience.

👥 2. Demographic Influence on Churn

- **Senior Citizens**:
  - Make up about **16%** of the customer base.
  - Among Senior Citizens, **42%** have churned compared to only **24%** of non-senior customers.
  - This indicates a **significantly higher churn propensity** in this group.
- **Gender**:
  - Gender does **not significantly impact churn**; churn percentages for male and female customers are nearly equal, with a marginal difference of **less than 1%**.

🕑 3. Tenure and Churn Behavior

- Customers with **tenure below 6 months** have a **churn rate exceeding 50%**.
- On the other hand, those with **tenure above 24 months** exhibit a churn rate of **less than 10%**.

- This suggests that loyalty increases with service duration, and onboarding experience is critical in the early months.

📄 4. Contract Type and Churn

- Customers on **month-to-month contracts**:
    - Represent a large proportion of the churned population.
    - Have a churn rate of over **43%**.
- In contrast, churn rates drop to **11%** for **1-year** contracts and **3%** for **2-year** contracts.
- This implies that **longer-term contracts are a key factor** in improving customer retention.

📶 5. Churn by Service Subscriptions

The countplots for various services reveal a clear trend: **lack of service subscriptions correlates with higher churn**.

Service	Churn Rate if Subscribed	Churn Rate if Not Subscribed
OnlineSecurity	15%	40%
TechSupport	17%	38%
DeviceProtection	20%	35%
StreamingTV	26%	30%

- Customers who **do not opt for services** like OnlineSecurity, TechSupport, and DeviceProtection are **2x more likely to churn**.
- These value-added services seem to **increase engagement and satisfaction**.

📌 Conclusion & Recommendation

- Target new customers with **onboarding campaigns** focused on the first 6 months.
- Promote **long-term contracts** via discounts or bundles.
- Encourage subscriptions to **multiple services** to reduce churn risk.
- Focus retention efforts particularly on **Senior Citizens** and **month-to-month contract holders**.