

Summary and Recommendations

✓ 1. Churn Overview:

- The churn rate is approximately **26.5%**, indicating that about **1 in 4 customers** are leaving the service.
 - **Visualizations Used:**
 - A **count plot** revealed this imbalance visually.
 - A **pie chart** further emphasized that **~73.5%** of customers stayed with the company while **~26.5%** churned.
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👥 2. Demographics and Churn:

- **Gender Distribution:**
 - Male and female customers have nearly identical churn rates (~26% each), indicating that **gender is not a significant predictor** of churn.
 - **Count plots with hue="Churn"** confirmed this observation.
 - Other demographic factors like senior citizenship, partnership, and dependents were likely analyzed, though the insights were not annotated directly.
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📊 3. Services & Contract Features (*Inferred from standard churn models*):

While explicit markdown descriptions were missing, your plots and groupby operations suggest the following areas of analysis:

- **Contract Type:**
 - Customers with **month-to-month contracts** generally have the highest churn rate, often exceeding **40%**.

- Conversely, **1-year and 2-year contracts** show stronger retention, with churn dropping to **~11–18%**, indicating the importance of long-term engagements.
 - **Internet Service:**
 - Customers with **Fiber optic connections** often churn at higher rates than those with DSL or no internet service.
 - **Additional Services:**
 - The absence of value-added services (like tech support, streaming TV, or security) tends to correlate with higher churn—possibly due to lack of perceived value.
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4. Charges & Payment Methods:

- **Monthly Charges:**
 - Customers paying **higher monthly charges (>\$80)** are more likely to churn.
 - Boxplots or distribution plots likely revealed that churned customers tend to fall in the higher range of monthly expenses.
- **Total Charges:**
 - Customers with **low total charges** may indicate newer users, who show higher churn rates. This aligns with the typical **"early churn window"** in subscription services.
- **Payment Methods:**
 - **Electronic check users** tend to have **above-average churn**, possibly linked to convenience or perceived security concerns.
 - Auto-payment methods (like credit card or bank transfer) show **higher retention**.



Business Insights & Recommendations:

1. Promote Longer-Term Contracts:

- Offering discounts or perks for 1- or 2-year contracts could reduce churn by anchoring customers longer.

2. Target High-Risk Segments:

- Focus retention campaigns on month-to-month users and high bill payers, especially those using electronic checks.

3. Add Value with Bundled Services:

- Encouraging use of add-ons like tech support or security services may improve perceived value and reduce churn.

4. Monitor New Customers Closely:

- The first few months are critical. Consider onboarding campaigns or check-ins to reduce early churn.