Executive Summary – Customer Churn Analysis

This analysis explores patterns in customer churn from a telecom dataset using visualizations and statistical summaries. The goal is to identify customer segments that are more likely to churn and uncover actionable business insights.

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1. Overall Churn Rate

- Out of the total customer base, **26.54%** have churned, while **73.46%** have remained.

- This is a **concerning churn rate**, indicating that more than 1 in 4 customers are leaving the service.

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2. Demographic Patterns

- **Gender**:

  - Churn is almost equally distributed among males and females, showing **no significant impact** of gender on churn behavior.

- **Senior Citizens**:

  - **42.8%** of **Senior Citizens** have churned vs. **24.6%** of non-senior citizens.

  - This indicates that **senior customers are 1.74x more likely to churn**, possibly due to usability issues or lower service relevance.

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3. Tenure Analysis

- Customers with **short tenure (0–6 months)** have the **highest churn rates**.

- Churn **significantly declines** as tenure increases, with customers staying **longer than 2 years showing minimal churn**.

- This suggests that **retention efforts should be focused on new customers during the first few months**.

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4. Contract Type & Churn

- **Churn by Contract Type**:

  - **Month-to-Month**: 43.9% churn

  - **One year**: 11.5% churn

  - **Two year**: 2.8% churn

- Customers on **Month-to-Month contracts are over 15x more likely to churn** than those on Two-Year contracts.

- **Long-term contracts are clearly associated with lower churn**, possibly due to commitment or bundled offers.

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5. Service-Based Insights

For various digital services, churn is higher among customers who **do not use** the service:

Feature	Churn % (Yes)	Churn % (No)
OnlineSecurity	14.8%	42.1%
TechSupport	15.0%	38.8%
StreamingTV	30.2%	37.5%
DeviceProtection	23.8%	35.1%
MultipleLines	23.7%	29.8%

- Customers **without security or support services** churn more—this implies these features may improve perceived value or satisfaction.

- The **"No Internet Service"** group has extremely low churn, possibly due to their low engagement or basic phone-only usage.

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6. Internet Service Type

- **Fiber Optic** users have a churn rate of **41.0%**, which is **significantly higher** than:

  - DSL: **19.2%**

  - No Internet: **7.5%**

- This indicates a need to **investigate Fiber Optic customer experience**—possibly due to technical issues, pricing, or poor support.

Key Recommendations:

1. **Focus retention efforts** on Month-to-Month customers and new sign-ups (< 6 months).

2. Promote and bundle **OnlineSecurity, TechSupport**, and other value-added services.

3. Analyze churn causes among **Fiber Optic users** to reduce dissatisfaction.

4. Consider incentives for long-term contract conversion.