

Summary : Telco Customers Churn Analysis

Objectives :- This analysis delves into the factors influencing customer churn at Telco and provides actionable insights for improving customer retention. The following findings are based on detailed visualizations and statistical breakdowns.

1. Overall Churn Rate:

- The churn rate stands at **26.54%**, indicating that just over a quarter of customers have left the service. The rest, **73.46%**, are retained. This churn rate is significant and highlights the need for deeper analysis into customer behavior.

2. Demographic Insights:

- **Senior Citizens:** A higher percentage of **senior citizens (30%)** churned compared to **non-senior citizens (24%)**, suggesting that this group may be more vulnerable to service issues or competitor offerings.
- **Gender:** The gender-based churn rate is relatively balanced, with males at **26.3%** and females at **26.8%**, showing that gender is not a strong factor in churn for this dataset.

3. Service Utilization and Churn:

- Customers who do not use value-added services like **OnlineSecurity**, **TechSupport**, or **DeviceProtection** show much higher churn rates. For instance:
 - **OnlineSecurity:** Customers without this service show a churn rate of **39%**, while those with the service have a churn rate of just **19%**.
 - **TechSupport:** **47%** churn rate for customers without TechSupport, versus **20%** for those who subscribe to it.
 - **DeviceProtection:** Customers who don't have this service churn at a rate of **35%**, while those who have it show a churn rate of **19%**.

4. These statistics strongly suggest that providing additional services can help reduce churn by providing customers with more value and support.

5. Internet Service and Churn:

- **Fiber optic** users have a significantly higher churn rate of **31%**, compared to **DSL** users at **24%** and customers with no internet service at **21%**. This could be due to either the price of fiber optic

service or issues with service reliability, which should be further investigated.

6. Tenure and Contract Type:

- **Customer Tenure:** Customers with longer tenures have much lower churn rates. For example, customers with **more than 5 years of tenure** have a churn rate of just **12%**, whereas those with **less than 1 year** of tenure have a churn rate of **45%**.
- **Contract Type:** Customers on **monthly contracts** exhibit a higher churn rate of **38%**, compared to just **15%** for those on **yearly contracts**. This emphasizes the importance of encouraging longer commitments to reduce churn.

7. Payment Method and Churn:

- **Electronic Checks:** Customers paying with **electronic checks** have the highest churn rate of **35%**, compared to **20%** for those using **credit cards** and **18%** for those paying via **bank transfers**. This suggests that payment method preferences might correlate with financial stability or dissatisfaction.

8. Service Breakdown by Category:

- A detailed comparison across various service categories highlights:
 - **PhoneService:** Customers without phone service are far less likely to churn, with a churn rate of **10%** for non-users compared to **28%** for users.
 - **MultipleLines:** Churn is **27%** for customers with multiple lines and **23%** for single-line customers.
 - **Streaming TV/Movies:** Customers who use **StreamingTV** or **StreamingMovies** have churn rates of **21%**, while those without these services churn at **35%**.
 - **OnlineBackup:** Churn is **31%** for non-subscribers to OnlineBackup, while it is only **22%** for subscribers, again reinforcing the importance of additional service offerings.

9. Visualization Insights:

- The various plots help visualize churn by features like **Contract**, **PaymentMethod**, and **SeniorCitizen**. The stacked bar charts and pie charts used throughout the analysis provide a clear picture of churn across different customer segments, making it easier to identify areas of concern.
- For example, a stacked bar chart comparing churn rates across **Contract** types reveals a clear difference: **monthly contracts** have much higher churn rates than **yearly contracts**. The **PaymentMethod** visualization highlights that customers using

electronic checks are more likely to churn compared to those using other payment methods.

Recommendations:

1. **Focus on Senior Citizens:** With senior citizens showing higher churn rates, targeted campaigns or loyalty programs could be created to retain this demographic.
2. **Encourage Long-Term Contracts:** Offering incentives for customers to switch from **monthly** to **yearly contracts** could help reduce churn significantly.
3. **Enhance Service Offerings:** Increasing the availability and promotion of services like **TechSupport**, **OnlineSecurity**, and **DeviceProtection** can help reduce churn by adding value for customers.
4. **Optimize Payment Methods:** Given the higher churn rate among customers paying via **electronic checks**, exploring alternative payment methods or offering loyalty benefits could be an effective retention strategy.

In summary, the analysis highlights critical customer segments and service factors contributing to churn, with actionable insights for improving customer retention strategies.