

# Customer Churn Analysis Report Telecom

## 1. Churn Distribution:

- A **bar plot** visualizes the distribution of customers who churned versus those who didn't, with **26.54%** of customers having churned.
- The **pie chart** reinforces this insight, showing that churn is a significant concern for the company, as more than a quarter of the customer base is lost.

## 2. Demographics & Churn:

- **Gender:**
  - The **count plot** of churn by gender reveals no significant difference between male and female customers. Both genders have roughly the same churn rate, indicating that gender is not a major determinant of churn.
- **Senior Citizens:**
  - A **stacked bar chart** indicates that **Senior Citizens** are more likely to churn compared to younger customers. The churn rate is higher in this category, suggesting that Senior Citizens might require special attention, better service packages, or targeted retention strategies.

## 3. Service Subscription Impact:

- **Phone and Internet Services:**
  - Customers without **Phone Services** or **Multiple Lines** churn less frequently than those who use these services.
  - **Fiber Optic Internet** users show a higher churn rate compared to **DSL** users, indicating that issues related to fiber-optic services may be driving customers away. This could be due to pricing, performance issues, or customer satisfaction with the service.
- **Online Security, Backup, and Device Protection:**
  - Customers without **Online Security**, **Online Backup**, or **Device Protection** have a much higher churn rate. These services seem to play a crucial role in customer retention, and their absence likely correlates with dissatisfaction or a lack of perceived value in the service package.
- **Streaming Services & Tech Support:**
  - **StreamingTV** and **StreamingMovies** play an important role in reducing churn. Customers who do not subscribe to these services show a higher likelihood of leaving.
  - Similarly, customers without **Tech Support** have higher churn rates, suggesting that offering better support and ensuring customers have access to troubleshooting services could improve retention.

## 4. Contract Type & Churn:

- A **count plot** highlights the stark difference between customers on different contract types:
  - **Month-to-month contracts** are associated with the highest churn rates. These customers can leave at any time, leading to greater volatility.
  - In contrast, customers on **1-year** or **2-year contracts** churn far less frequently, as longer-term contracts provide stability and commitment, lowering the churn risk.

- **Recommendation:** Encourage customers on month-to-month plans to switch to longer contracts by offering incentives such as discounts, improved services, or loyalty programs.

## 5. Payment Method & Churn:

- The analysis of payment methods shows that customers using **Electronic Checks** are more likely to churn compared to those using **Credit Cards**, **Bank Transfers**, or **Mailed Checks**.
- **Electronic Check** users might be more price-sensitive or dissatisfied with the overall experience. Addressing these concerns by offering better payment options or value-added services might help reduce churn in this segment.

## 6. Visual Summary of Key Service Impacts:

- A **set of count plots** for various services (Phone Service, Multiple Lines, Internet Service, Online Security, Backup, Device Protection, Tech Support, Streaming TV, and Streaming Movies) visually depict the relationship between churn and service utilization:
  - For each service, customers who do **not** use the service tend to churn more, suggesting a correlation between service adoption and customer loyalty.
  - Notably, the lack of **OnlineSecurity**, **TechSupport**, and **Streaming services** have the largest impact on churn rates.

## 7. Additional Findings:

- **Senior Citizen Population:** The analysis shows that a greater percentage of senior citizens tend to churn. Tailored offerings, discounts, or simplified services might help retain this segment.
- **Electronic Payment Issues:** Customers using **electronic checks** as their payment method are significantly more likely to churn. This could be addressed by promoting more convenient and modern payment methods or offering better incentives for non-electronic check users.

## Strategic Recommendations:

1. **Service Bundling:** Offer bundled services like **Online Security**, **Tech Support**, and **Streaming services** at competitive prices to encourage customers to adopt more services, thus reducing churn.
2. **Targeted Customer Retention Programs:**
  - Develop targeted strategies for **Senior Citizens** by offering tailored services, special support, and incentives aimed at their specific needs.
  - Engage **month-to-month contract holders** with incentives like discounts for switching to longer-term contracts to lock in customer loyalty.
3. **Improve Payment Experience:**
  - Customers using **electronic checks** show the highest churn rates. Promoting alternative payment methods like credit card or auto-pay options may help retain these customers.
4. **Tech Support Emphasis:** Ensure that all customers, especially those without **Tech Support**, have easy access to help and troubleshooting services. Implementing proactive customer care might also help reduce churn rates.

## Conclusion:

This detailed exploratory data analysis (EDA) effectively highlights the key drivers of customer churn, including demographic factors, service usage, contract type, and payment methods. The insights from this analysis should inform strategic initiatives focused on reducing churn and improving customer satisfaction by addressing specific areas of concern like **service adoption**, **contract commitment**, and **payment methods**.