Documentation – Analysis of Service Features and Customer Churn

Multiple categorical service-related variables were analyzed using count plots to understand their impact on customer churn. Each plot shows how many customers churned (Yes) and did not churn (No) based on whether they subscribed to a particular service.

🔍 **Key Observations**

- **Customers without value-added services such as OnlineSecurity, TechSupport, DeviceProtection, or OnlineBackup show significantly higher churn.**

- Users of **fiber optic internet have higher churn compared to DSL users**, indicating possible dissatisfaction or competitive alternatives.

- **Customers without internet services have the lowest churn**, suggesting that non-internet users are more stable.

- **PhoneService and Streaming services (TV/Movies) show comparatively smaller influence on churn**, meaning they are not major deciding factors.

- **MultipleLines service shows a slight improvement in retention**, but the effect is not as strong as other support/security services.

📌 **Final Interpretation**

Service-related features have a strong influence on churn behavior. Customers who **do not subscribe to additional support, security, or protection services are more likely to leave**, whereas those who opt for such services tend to stay longer. This suggests that providing bundled service plans or encouraging customers to opt-in for support/security features may improve retention.

Business Recommendations

1. **Promote Service Bundles**

   o Offer discounted packages that include **OnlineSecurity, TechSupport, DeviceProtection**, and **OnlineBackup**.

   o Customers availing these services show significantly **lower churn**, so bundling them can increase retention.

2. **Target High-Risk Fiber Optic Customers**

   o Fiber optic users exhibit **highest churn**, possibly due to performance issues or pricing.

   o Run **targeted retention campaigns**, offer **loyalty discounts** or **upgrade incentives** to these customers.

3. **Introduce Proactive Customer Support**

- Customers without support-related services (e.g., no TechSupport) churn more.

- Provide **free trial support services**, **onboarding assistance**, or **automated check-ins** for at-risk customers.

4. **Personalized Upselling Strategies**

- Identify customers **not subscribed to additional services** and offer **custom recommendations** based on their usage.

- Use predictive analytics to **flag customers likely to churn** and motivate them to upgrade.

5. **Encourage Long-Term Contracts**

- Customers with month-to-month plans tend to churn more (common industry insight).

- Offer **discounts or benefits for annual subscriptions** along with bundled services.

6. **Improve Customer Experience for Service Add-ons**

- Ensure high satisfaction for customers using fiber optic and streaming services through **quality monitoring and feedback programs**.

📈 **Strategic Implementation**

Action	Expected Outcome
Bundle support/services	Increased retention
Focus on fiber users	Reduced churn in high-risk segment
Offer trials of service add-ons	Higher adoption rate
Promote long-term plans	Lower churn over time
Predictive churn modeling	Early intervention