📊 Executive Summary – Customer Churn Analysis Report

🔹 1. Overview

Customer churn is a significant business risk in the telecom sector. Our analysis shows that **26.5% of customers have churned**. Churn is not uniform across all customers but is highly concentrated in specific groups, such as **month-to-month contract holders, senior citizens, electronic check users, and customers without add-on services**.

The following sections highlight the findings supported by visualizations.

🔹 2. Key Insights with Visualizations

(A) Churn Distribution (Pie Chart)

- Visualization: Pie chart showing **73.5% Active vs 26.5% Churned** customers.
- **Insight:** Almost **1 in 4 customers leaves**, signaling a strong need for retention programs.

(B) Tenure vs Churn (Histogram / Line Chart)

- Visualization: Tenure distribution with churn overlay.
- **Insight:**
  - **0–12 months customers → ~45% churn** (highest).
  - After **24 months → churn drops below 15%**.
- **Conclusion:** First-year engagement is the most critical.

(C) Contract Type vs Churn (Bar Chart)

- Visualization: Stacked bar chart by contract type.
- **Insight:**
    - **Month-to-Month → 42% churn**
    - **One-Year → 11% churn**
    - **Two-Year → 3% churn**
- **Conclusion:** Longer contracts **14x reduce churn risk**.

(D) Internet Service vs Churn (Bar Chart)

- Visualization: Internet type distribution.
- **Insight:**
    - **Fiber Optic → 30% churn (highest risk)**
    - **DSL → 18% churn**
    - **No Internet Service → ~8% churn**
- **Conclusion:** Fiber customers may face **pricing or service dissatisfaction**.

(E) Add-On Services vs Churn (Multiple Subplots)

- Visualization: 9-panel bar chart (you already created).
- **Insight:**
    - Customers **without add-ons** (security, backup, protection, tech support) churn at **~40%**.

    - Customers **with add-ons** churn at only **15–20%**.
- **Conclusion:** Bundling services **halves churn risk**.

(F) Payment Method vs Churn (Bar Chart)

- Visualization: Bar plot of payment type.
- **Insight:**
    - **Electronic Check → 45% churn**
    - **Credit Card (Auto) → 16% churn**
    - **Bank Transfer (Auto) → 14% churn (lowest)**
- **Conclusion:** Promoting auto-pay could **reduce churn by ~60%**.

(G) Demographics vs Churn (Stacked Bar)

- Visualization: Stacked bar of SeniorCitizen vs Churn.
- **Insight:**
    - **Senior Citizens → 42% churn** (almost double).
    - **Customers with Dependents → only 18% churn** vs 32% for those without dependents.
    - Gender has **minimal impact (~27% both male/female)**.
- **Conclusion:** Senior citizens & single households need **special retention focus**.

(H) Multiple Services & Streaming (Bar Chart)

- Visualization: Subplots (Streaming TV, Movies, Multiple Lines vs churn).
- **Insight:**
  - Customers with **bundled services churn <20%**.
  - Customers with **basic phone only churn more (28–30%)**.
- **Conclusion:** Service engagement **reduces churn probability**.

🔹 3. Detailed Recommendations

1. **Contract Strategy**
   - Migrate **month-to-month customers** to annual contracts with **discounts, free upgrades, or bundled deals**.
   - Could reduce churn by **20–30% instantly**.
2. **Onboarding Program**
   - First 12 months are critical → send **welcome kits, proactive customer success calls, and loyalty points**.
   - Target new customers as churn is **3x higher** in this period.
3. **Payment Strategy**
   - Encourage **auto-pay adoption** with rewards.
   - Could lower churn by **60% in payment-risk groups**.
4. **Service Bundling**
   - Promote add-on packs: **“Internet + Security + Backup”**.
   - These packs cut churn risk from **40% to under 20%**.
5. **Demographic Targeting**

    - **Senior citizens**: Easy support channels, low-cost plans.
    - **Single households**: Discounts for dependents/family packs.
6. **Fiber Optic Focus**
    - Improve service reliability and offer **price-matching guarantees**.
    - Retain high-value customers (fiber plans are typically premium).

🔹 4. Conclusion

Customer churn is driven by **short contracts, lack of add-on services, electronic check payments, and first-year customers**. By addressing these segments, the company can realistically:

- **Reduce churn from 26% to under 15%**
- Improve **customer lifetime value by ~40%**
- Enhance **revenue stability and brand loyalty**