SUMMARY AND RECOMMENDATION

📊 Executive Summary – Telco Customer Churn Analysis

This analysis of the **Telco Customer Churn dataset (7,043 customers, 21 features)** explores customer demographics, service usage, contract details, and billing preferences to uncover key drivers of churn. The overall churn rate is **26.5% (1,869 out of 7,043 customers)**, which represents a significant revenue risk. Below are the major findings and insights:

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1. Customer Demographics

- **Gender**: Churn is **~27% for both male and female customers**, showing **no gender bias** in retention.
- **Senior Citizens**: Among senior citizens, **42% churn**, compared to only **24% of non-senior customers**. Age clearly influences loyalty.
- **Dependents & Partners**:
    - Customers **without partners** churn at **33%**, compared to **19%** for those with partners.
    - Customers **without dependents** churn at **32%**, versus only **15%** for those with dependents.
      ☞ Family ties seem to promote loyalty.

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2. Tenure & Contracts

- **Tenure**:

    - **~50% of customers with tenure <12 months churn**,
    - compared to only **~11% for those with tenure >60 months**.
      ☞ New customers are highly vulnerable to churn.
- **Contracts**:
    - **Month-to-month contracts**: **43% churn**
    - **One-year contracts**: **11% churn**
    - **Two-year contracts**: **3% churn**
      ☞ Long-term contracts **drastically reduce churn risk**.

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3. Services Subscribed

- **Internet Service**:
    - **Fiber optic users churn at ~42%**,
    - while **DSL churn is only ~19%**.
    - Customers with **no internet service churn at just 8%**.
- **Online Security, Tech Support, Device Protection**:
    - Customers **without these add-ons churn at ~40%**,
    - while those **with these services churn at ~15–18%**.
      ☞ Value-added support services strongly improve retention.

- **Streaming TV/Movies**: Little correlation – churn rate is similar for users and non-users.

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4. Billing & Payment Preferences

- **Paperless Billing**:
  - Customers using paperless billing churn at **34%**,
  - compared to **16% churn** for mailed bill customers.
- **Payment Methods**:
  - Customers paying by **electronic check churn at ~45%**,
  - while other methods (credit card, bank transfer, mailed check) are much lower (**15–20%**).
- **Charges**:
  - Churned customers have **higher Monthly Charges (~$74 vs $61)**,
  - but **lower Total Charges** since they leave earlier.

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5. Strategic Implications

1. **Focus Retention on New Customers**:
   - Nearly **1 in 2 customers leaves within the first year**. Onboarding, personalized offers, and early engagement can reduce this.

2. **Promote Long-Term Contracts**:
    - Two-year contracts reduce churn to just **3%.** Offering discounts and loyalty rewards can lock customers in.
3. **Leverage Add-On Services**:
    - Bundling online security, tech support, and device protection can cut churn rates by **over 50%**.
4. **Improve Fiber Optic Service Experience**:
    - With **42% churn**, fiber optic service users are dissatisfied – requiring infrastructure, quality, and pricing improvements.
5. **Optimize Billing Experience**:
    - Address issues with **paperless billing and e-check payments**, possibly through better communication, user experience, and incentives.