# **SUMMARY AND RECOMENDATION**

**Overview of Dataset**

* **Total Customers Analyzed**: 7,043
* **Features Included**: 21 attributes including demographics, service usage, billing, and churn status.
* **Target Variable**: Churn (Binary: Yes/No)

The dataset captures key behavioral and demographic data points, including monthly charges, total charges, tenure, contract type, internet service, payment method, and value-added services such as online security and tech support.

**Key Statistical Highlights**

| **Metric** | **Value** |
| --- | --- |
| Average Tenure | 32.4 months |
| Average Monthly Fee | ₹64.76 |
| Max Monthly Fee | ₹118.75 |
| Average Total Bill | ₹2,279.73 |
| Churn Rate (Est.) | ~26.5% |

* Most customers have a **monthly contract** and average a tenure of ~2.5 years.
* A large portion of customers are **not senior citizens** (83.8%).
* About **30%+** of customers are paying **more than ₹89/month**, which may signal a high-churn risk group.

**Behavioral Observations from Your EDA**

**1. Tenure Distribution**

* Many customers churn early — especially in the **first 6 months**.
* Tenure has a **positive correlation** with retention, suggesting loyal customers stay longer.

**2. Contract Type & Churn**

* Customers on **Month-to-Month** contracts dominate the churn group.
* **Longer contracts (1-2 years)** show significantly lower churn, reinforcing the need for retention offers via contractual lock-ins.

**3. Churn & Charges**

* **Churned customers** have higher average monthly charges than retained ones.
* High bills, especially with Fiber Optic internet and add-ons, correlate with dissatisfaction unless value is perceived.

**4. Senior Citizen Behavior**

* Senior citizens (16.2% of total) show a **slightly elevated churn rate**, suggesting they may require special support programs or simplified plans.

**Actionable Insights (From Analysis & Plots)**

**Product Strategy**

* **Bundle Protection Services**: Many churners had no online security, tech support, or backup. Promoting these in early tenure can boost stickiness.
* **Focus on Fiber Optic Users**: High churn rates here indicate either pricing or service delivery issues.

**Billing & Payments**

* Customers using **Electronic Check** method churn disproportionately — consider migrating them to auto-pay or digital modes.
* **Paperless billing users** showed a **slightly higher churn rate**, possibly due to digital fatigue or oversight.

**Service Design**

* **Multiple lines**, streaming options, and device protection are **not strong retention drivers** on their own.
* Customers with **DSL Internet** and bundled tech support tend to remain longer.