Telco Customer Churn

Analyzed using python and Power BI

-Presented by Aman Dubey

Overall Churn Snapshot (KPIs)

Objective:

- The goal of this project is to analyze customer churn behavior in a telecom company and identify key factors that influence why customers leave the service.

7032
Total Customers

₹ 64.80
Avg MonthlyCharge

26.6%
Churn Rate

1869
Churned Customers

Dataset Overview:

1. Total Customers: **7,032**
2. Churned Customers: **1,869**
3. Overall Churn Rate: **26.6%**
4. Average Monthly Charge: **₹64.80**

Key Observations:

- Around 1 out of every 4 customers has churned.
- Despite having a large base of active customers, churned customers represent a significant revenue risk.
- Average monthly charges are moderate, indicating churn is not limited to premium users only.

Churn by Gender

Objective:
- Male and Female customers are almost equally distributed.
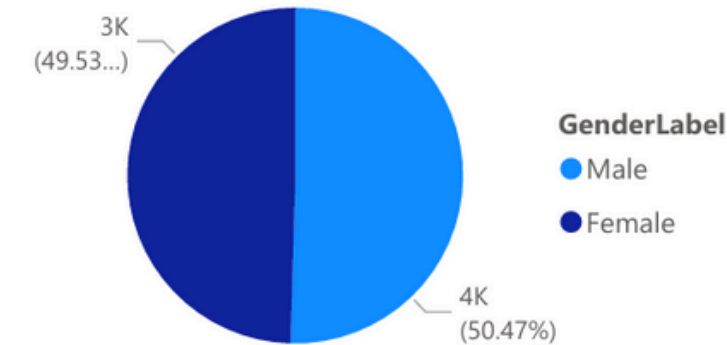- Churn percentage is nearly identical across genders.

Conclusion:
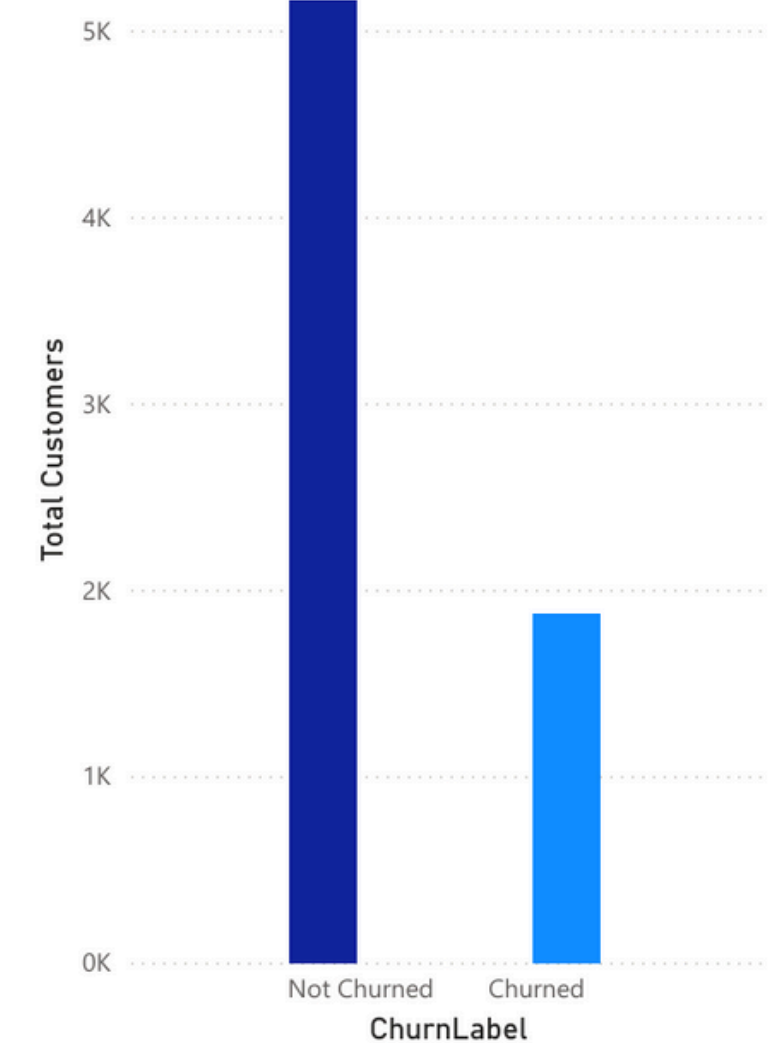- Gender does not significantly influence churn.

Business takeaway:
- Retention strategies should not be gender-specific.

Total Customers by GenderLabel

3K
(49.53...)

GenderLabel
● Male
● Female

4K
(50.47%)

-month

Total Customers and Avg Tenure by ChurnLabel and ChurnLabel

ChurnLabel ● Not Churned ● Churned

Total Customers

5K

4K

3K

2K

1K

0K

Not Churned   Churned
ChurnLabel

Churn by Senior Citizen Status

Observation:

- Senior citizens have a higher churn proportion compared to non-senior customers.
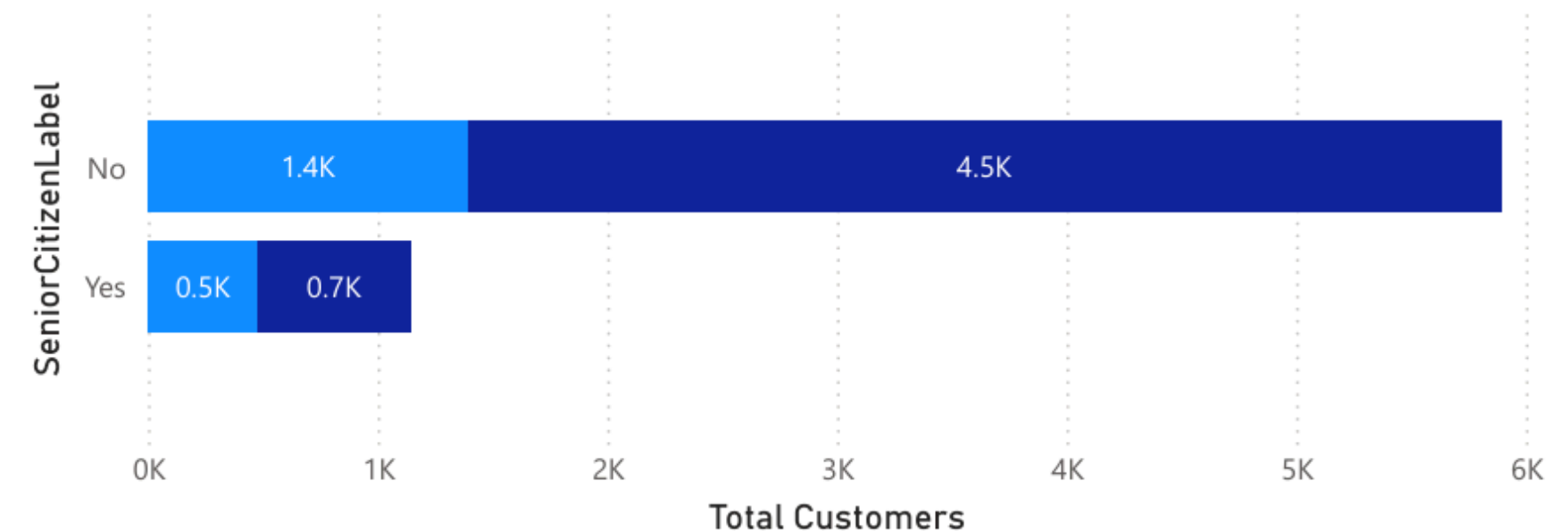- Non-senior customers form the majority, but seniors churn more frequently.

Insight:

- Senior citizens may face usability, pricing, or support challenges.

Actionable suggestion:

- Offer simplified plans, better customer support, or loyalty benefits for senior users.

Total Customers by SeniorCitizenLabel and ChurnLabel

ChurnLabel ● Churned ● Not Churned

Churn by Partner Status

Objective:
- Customers without partners show a noticeably higher churn rate.
- Customers with partners are more stable and likely to stay longer.

Insight:
- Single customers are less sticky and more likely to switch providers.

Business implication:
- Bundled or family plans could reduce churn among single users.

Total Customers by PartnerLabel and ChurnLabel

ChurnLabel ● Churned ● Not Churned

InternetService
☐ DSL
☐ Fiber optic
☐ No
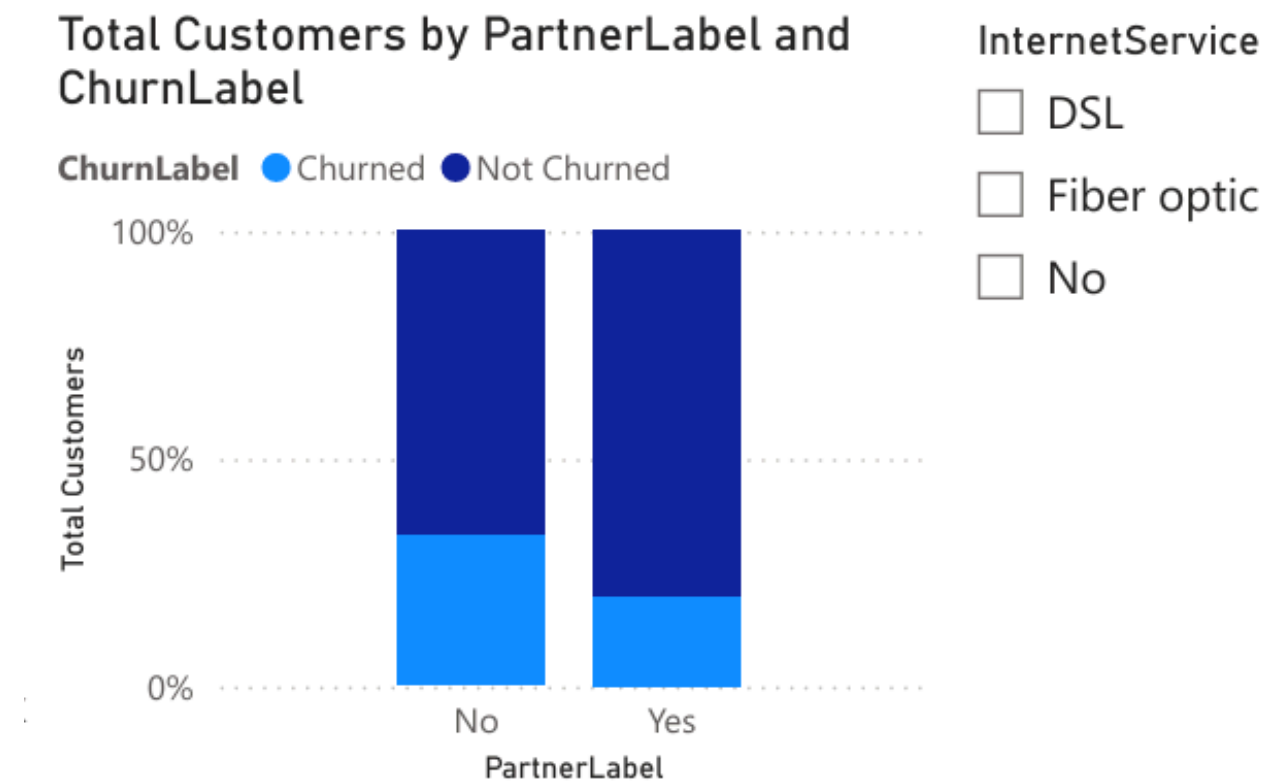
Customer Tenure Distribution

Observation:
- Highest churn occurs during the early tenure period (0–10 months).
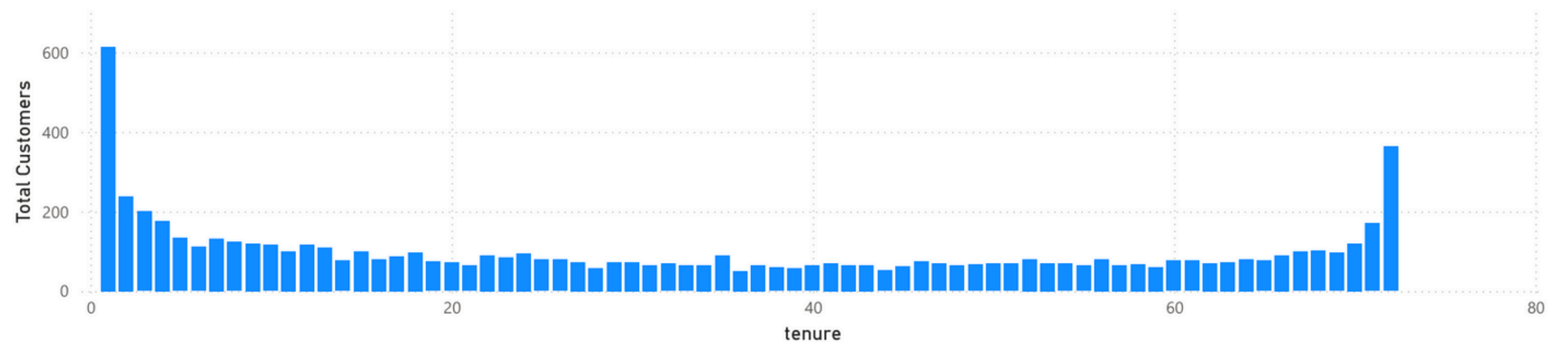- Long-tenure customers (above 60 months) show very low churn.

Key insight:
- If customers survive the initial months, they are more likely to stay long-term.

Recommendation:
- Improve onboarding experience and early engagement strategies.

Total Customers by tenure

Churn by Internet Service Type

Observation:
- Fiber optic customers churn the most, even more than DSL users.
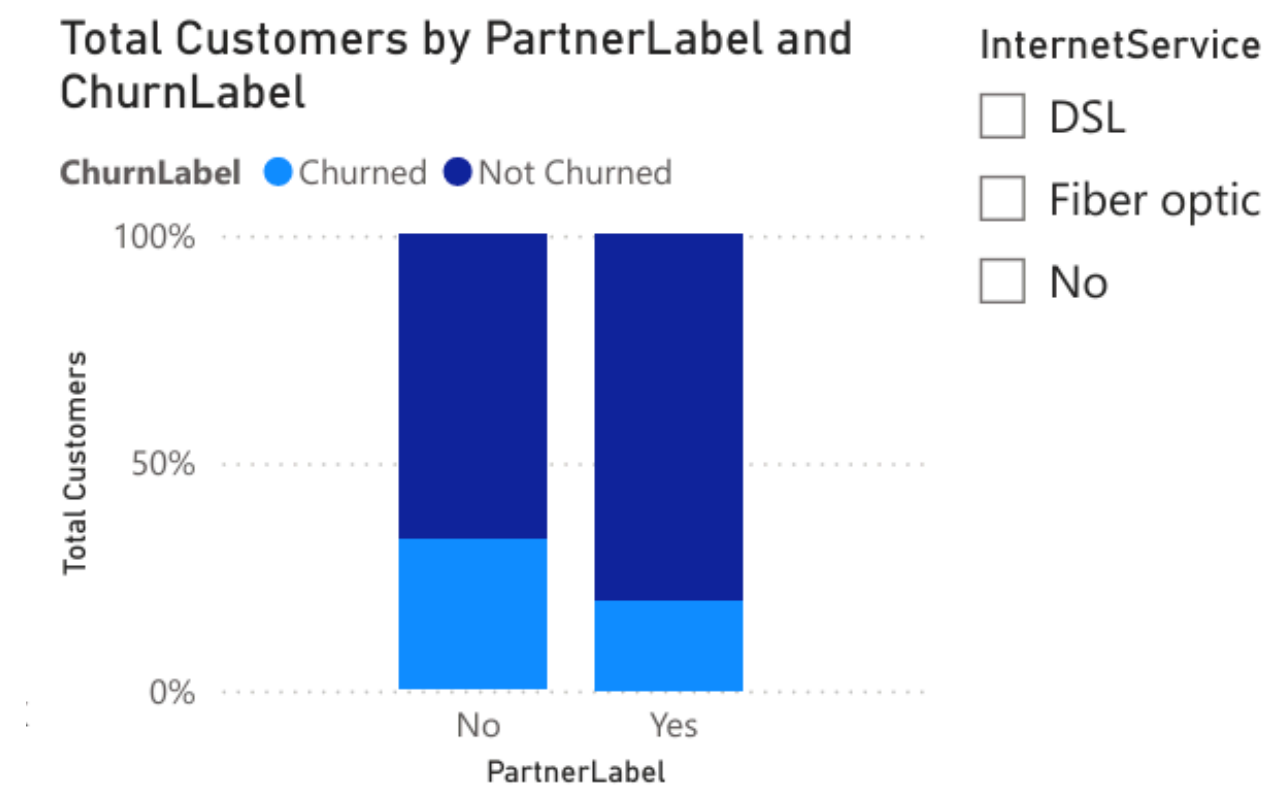- Customers with no internet service show the lowest churn.

Action:
- Investigate service quality and pricing for fiber optic plans.

Interpretation:

Fiber optic customers may experience:
1. Higher costs
2. Performance or service quality issues
3. Higher expectations not being met

Total Customers by PartnerLabel and ChurnLabel

InternetService
☐ DSL
☐ Fiber optic
☐ No

ChurnLabel ● Churned ● Not Churned

Churn by Contract Type

Observation:

- Month-to-month contracts have the highest churn.
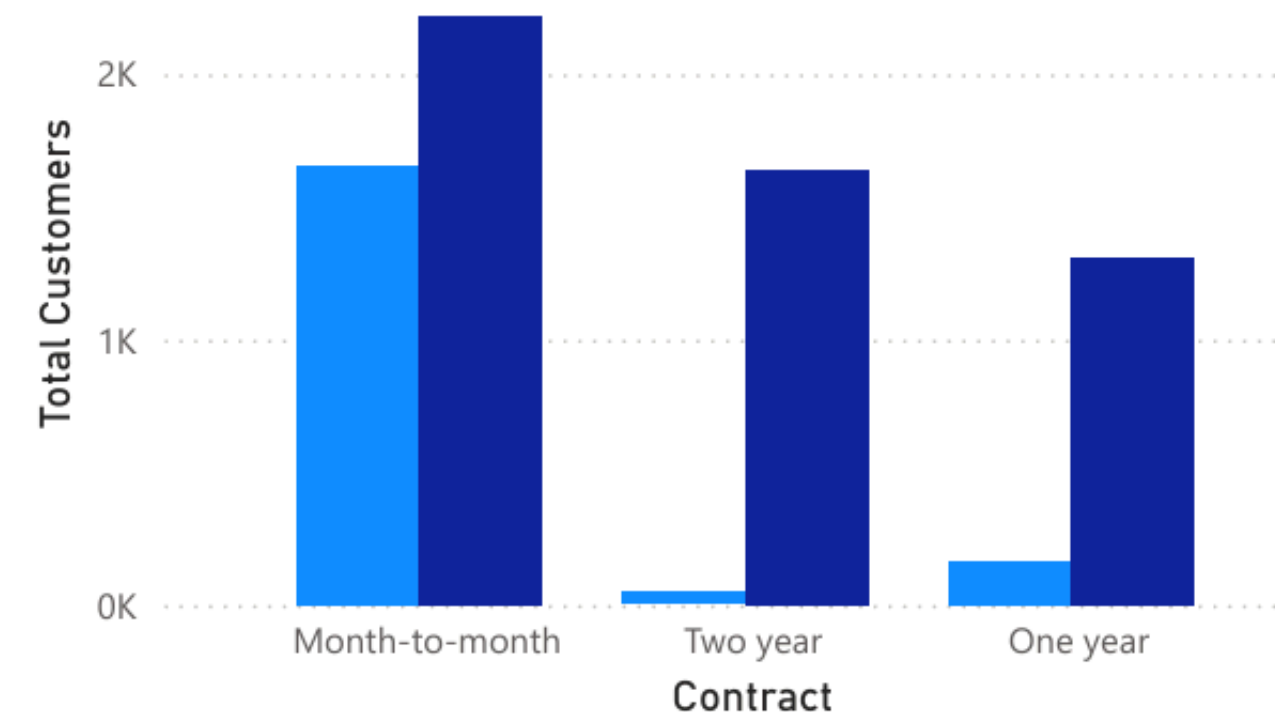- Two-year contracts show the lowest churn.

Business strategy:

- Encourage customers to move from month-to-month to long-term plans using discounts or incentives.

Key takeaway:

- Long-term contracts significantly reduce churn.

Total Customers by Contract and ChurnLabel

ChurnLabel ● Churned ● Not Churned

Churn by Online Security

Objective:
- Customers without partners show a noticeably higher churn rate.
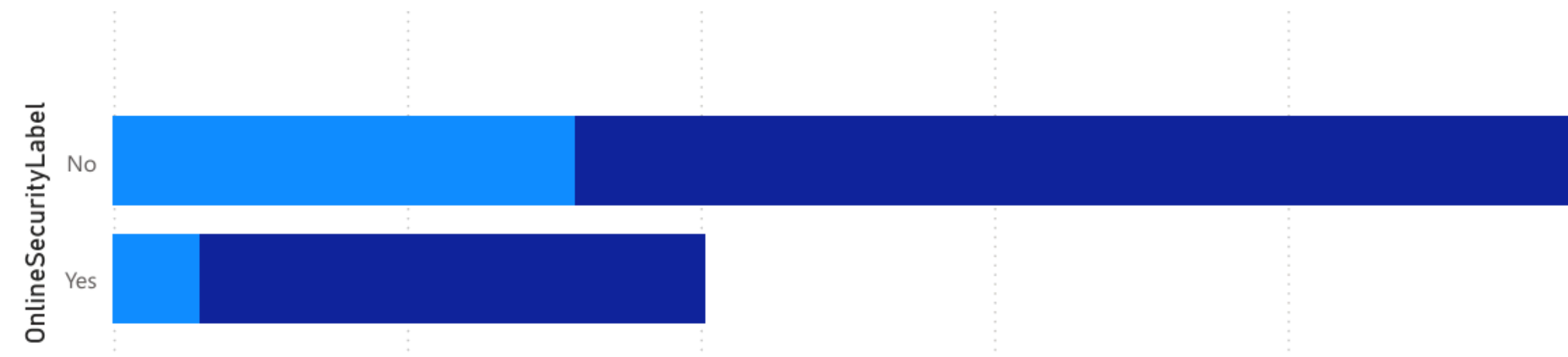- Customers with partners are more stable and likely to stay longer.

Insight:
- Single customers are less sticky and more likely to switch providers.

Business implication:
- Bundled or family plans could reduce churn among single users.

Total Customers by OnlineSecurityLabel and ChurnLabel

ChurnLabel ●Churned ●Not Churned

Monthly Charges vs Churn

Observation:
- Churn increases sharply when monthly charges exceed ₹70.
- Highest churn is seen in the ₹70–₹110 range.
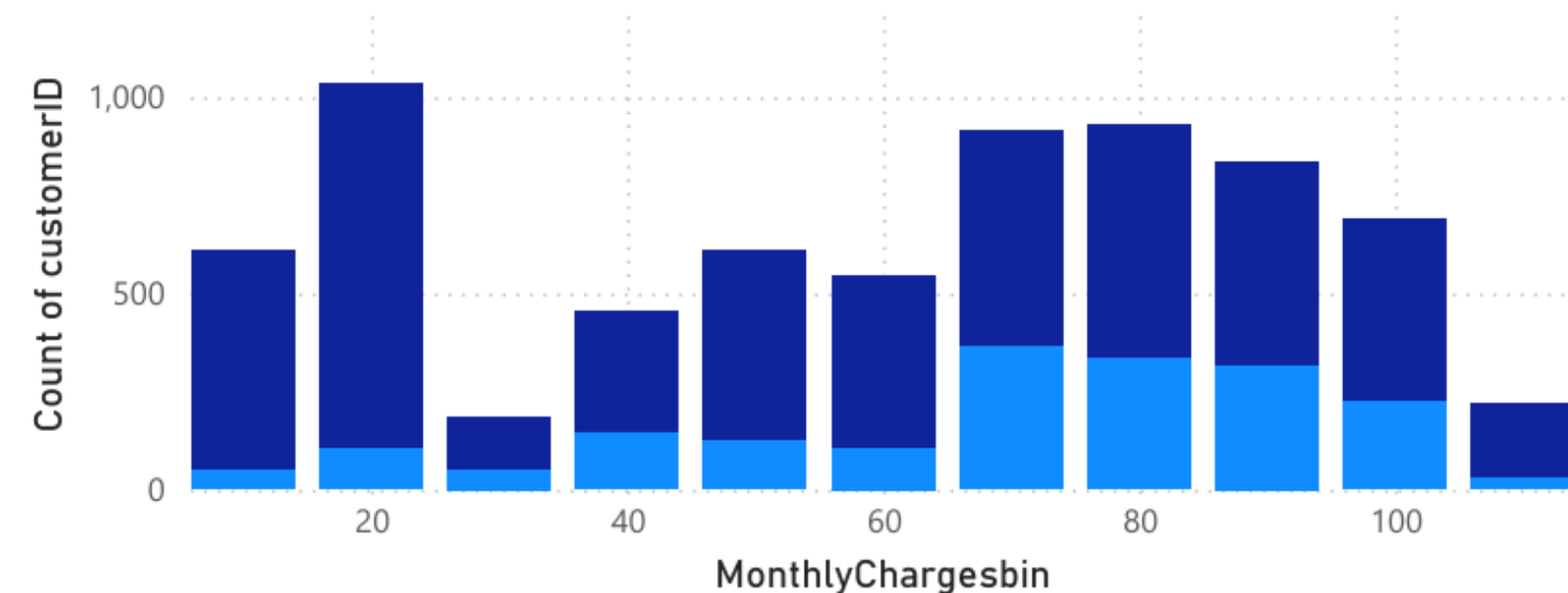
Business implication:
- High-paying customers need premium support and personalized offers.

Interpretation:
- Customers paying higher charges expect better value and service.

Count of customerID by MonthlyChargesbin and ChurnLabel

ChurnLabel ●Churned ●Not Churned

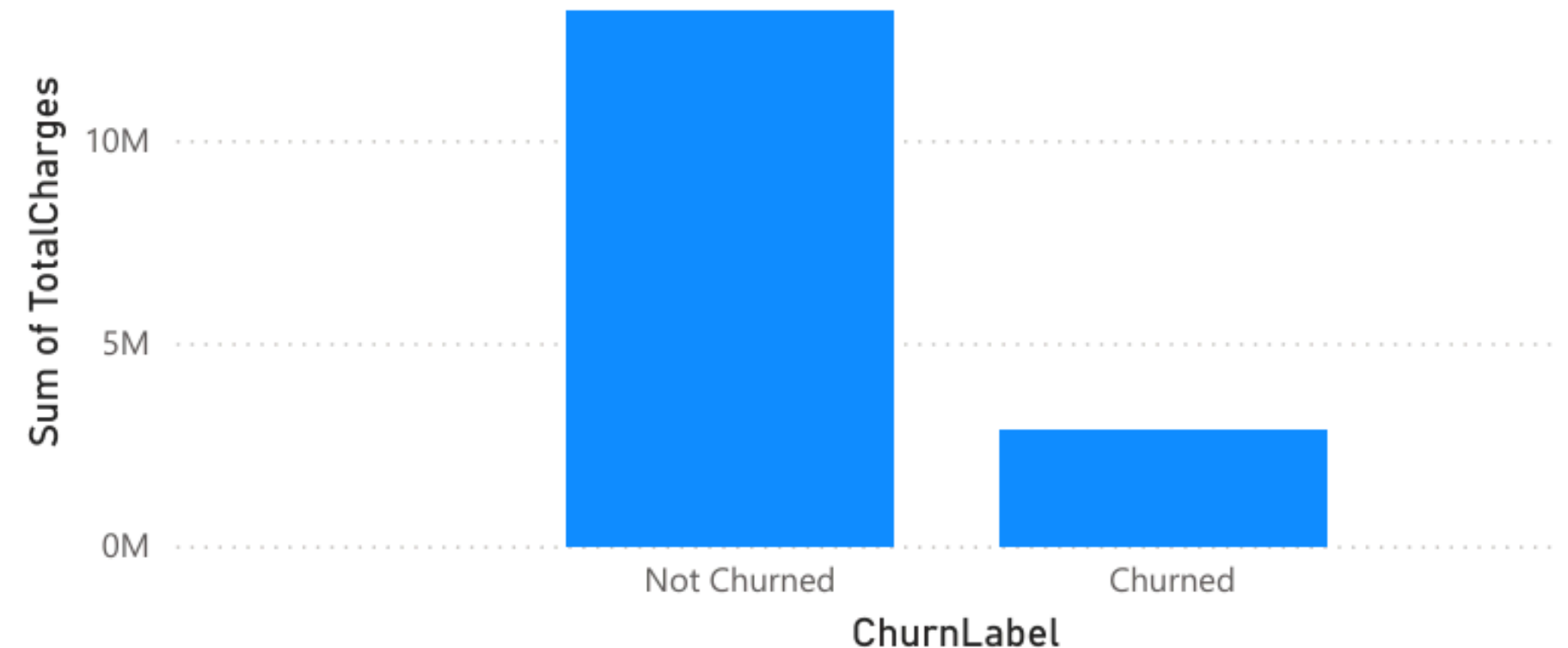
Monthly Charges ↑ → Churn ↑

Revenue Impact of Churn

Observation:

- Non-churned customers contribute significantly more total revenue.
- Churned customers represent a large revenue loss opportunity.

Insight:

- Reducing churn even slightly can result in substantial revenue gains.

Sum of TotalCharges by ChurnLabel

High-Risk Customer Segment Analysis

High-Risk Group Identified:

1. Month-to-month contract
2. Fiber optic internet
3. High monthly charges
4. Short tenure

Conclusion:

- This is the primary churn driver segment.

Key Stat:

- This segment alone accounts for 1,162 churned customers, the highest among all combinations.

High Risk

Contract	InternetService	Sum of MonthlyCharges	Sum of tenure	Sum of Churn
Two year	No	13,782.75	31060	5
One year	No	7,558.60	10773	9
Two year	DSL	43,926.05	37142	12
Two year	Fiber optic	44,861.15	27964	31
One year	DSL	34,996.15	23078	53
Month-to-month	No	10,694.60	4782	99
One year	Fiber optic	53,242.15	28081	104
Month-to-month	DSL	61,418.45	19241	394
Month-to-month	Fiber optic	1,85,181.10	45869	1162
Total		**4,55,661.00**	**227990**	**1869**

Final Insights & Recommendations

Key Insights:

- Churn is highest among:
    a. Month-to-month users
    b. Fiber optic customers
    c. High monthly charge users
    d. New customers
- Gender has minimal impact
- Value-added services reduce churn

Recommendations:

1. Promote long-term contracts
2. Improve early customer experience
3. Re-evaluate fiber optic pricing and quality
4. Offer bundled services (security, support)
5. Target high-risk segments with retention campaigns