Telco Customer Churn

Analyzed using python and Power BI

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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.
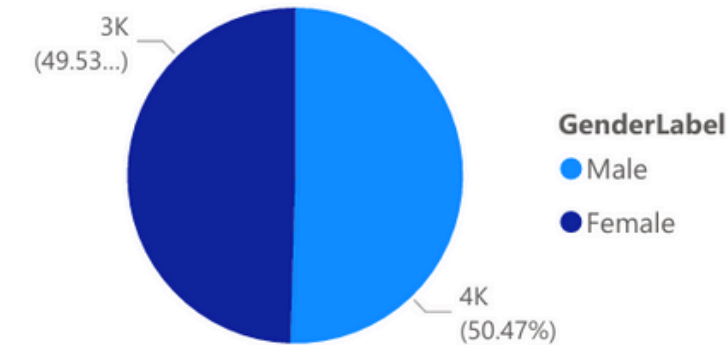- Churn percentage is nearly identical across genders.

Conclusion:
- Gender does not significantly influence churn.
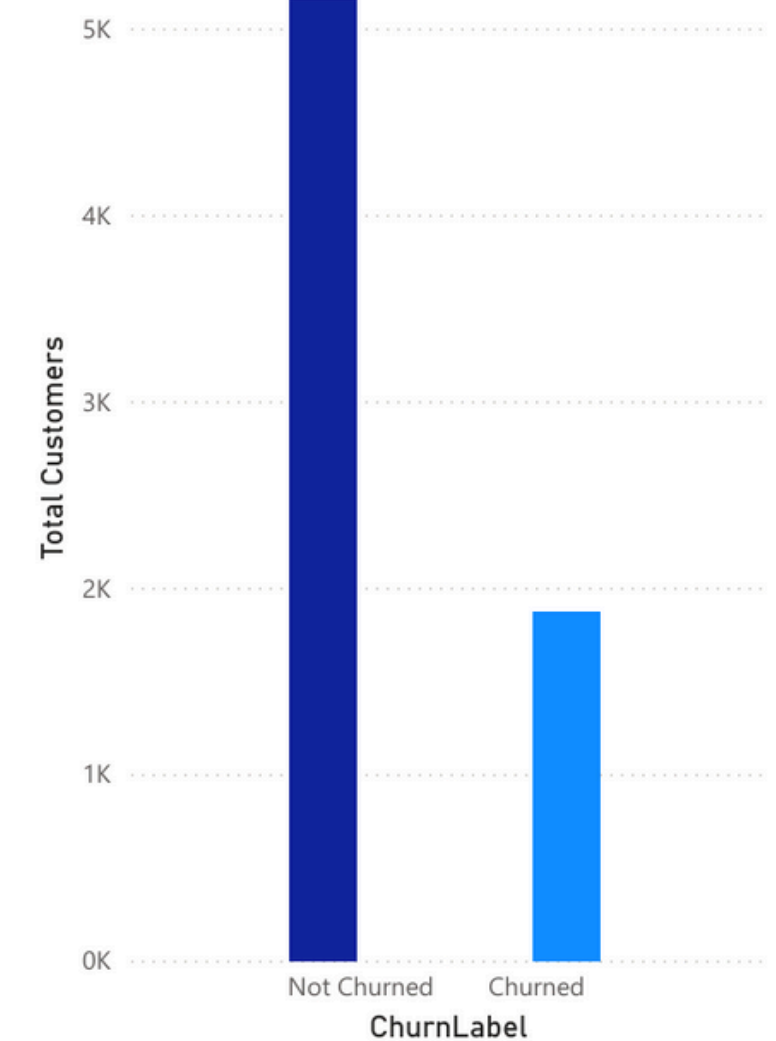
Business takeaway:
- Retention strategies should not be gender-specific.

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

Churn by Senior Citizen Status

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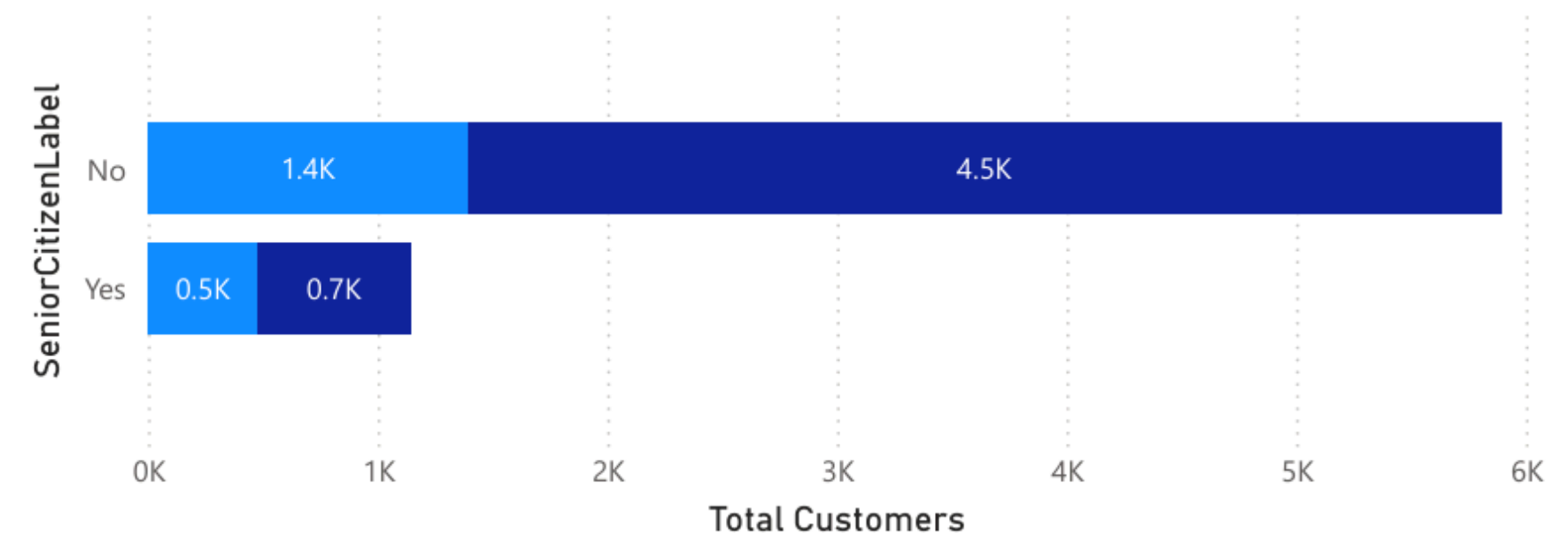- Non-senior customers form the majority, but seniors churn more frequently.

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
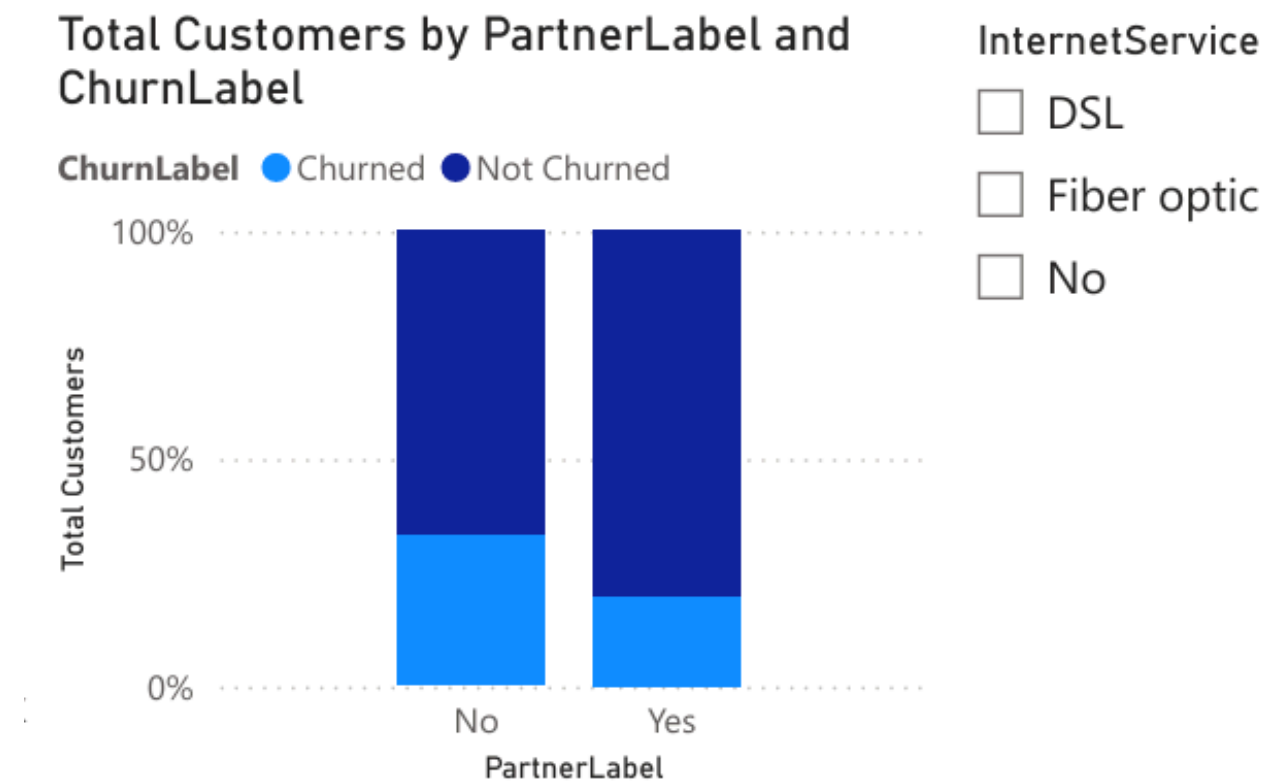
Customer Tenure Distribution

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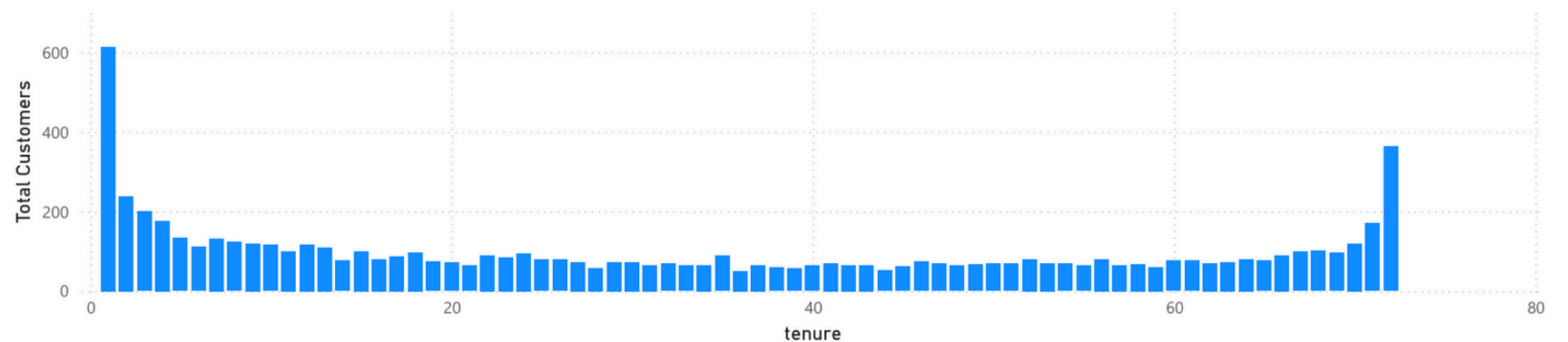- Long-tenure customers (above 60 months) show very low churn.

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.
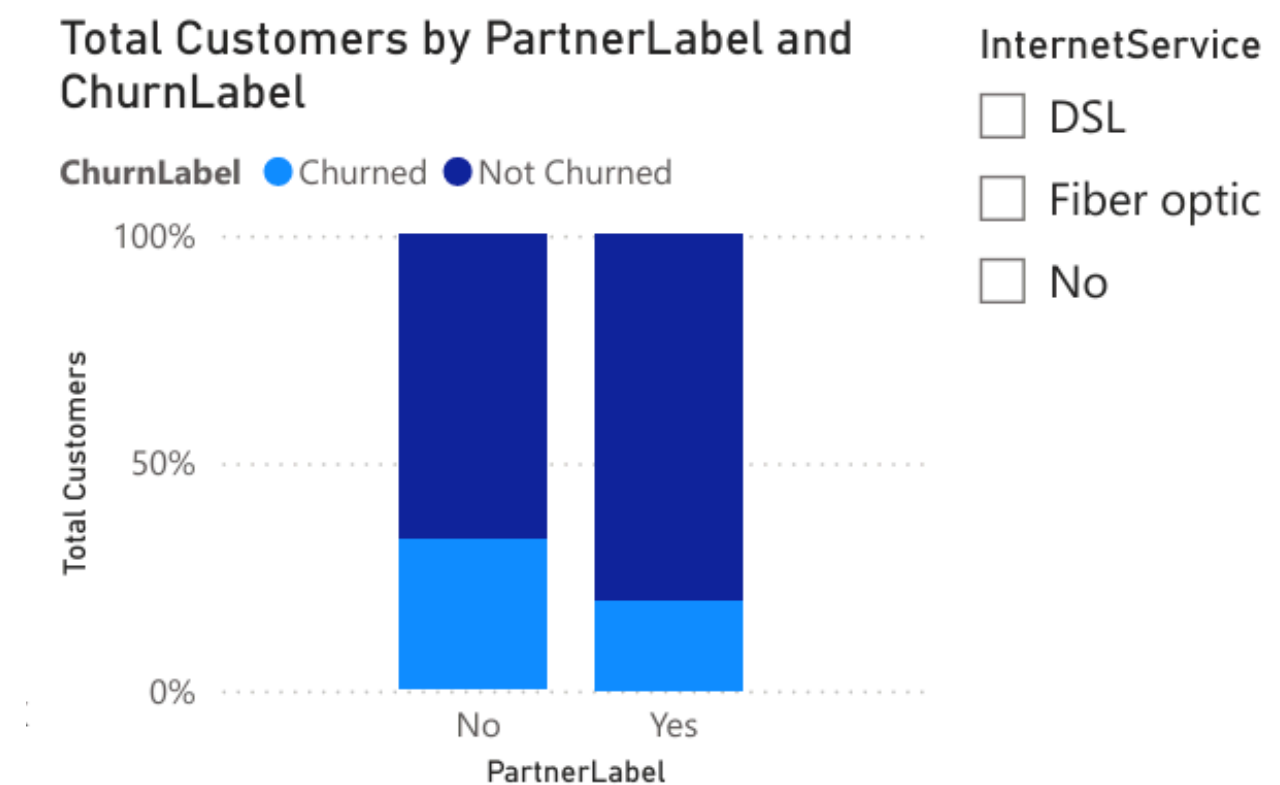- Customers with no internet service show the lowest churn.

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

ChurnLabel ●Churned ●Not Churned

InternetService
☐ DSL
☐ Fiber optic
☐ No

Churn by Contract Type

Observation:

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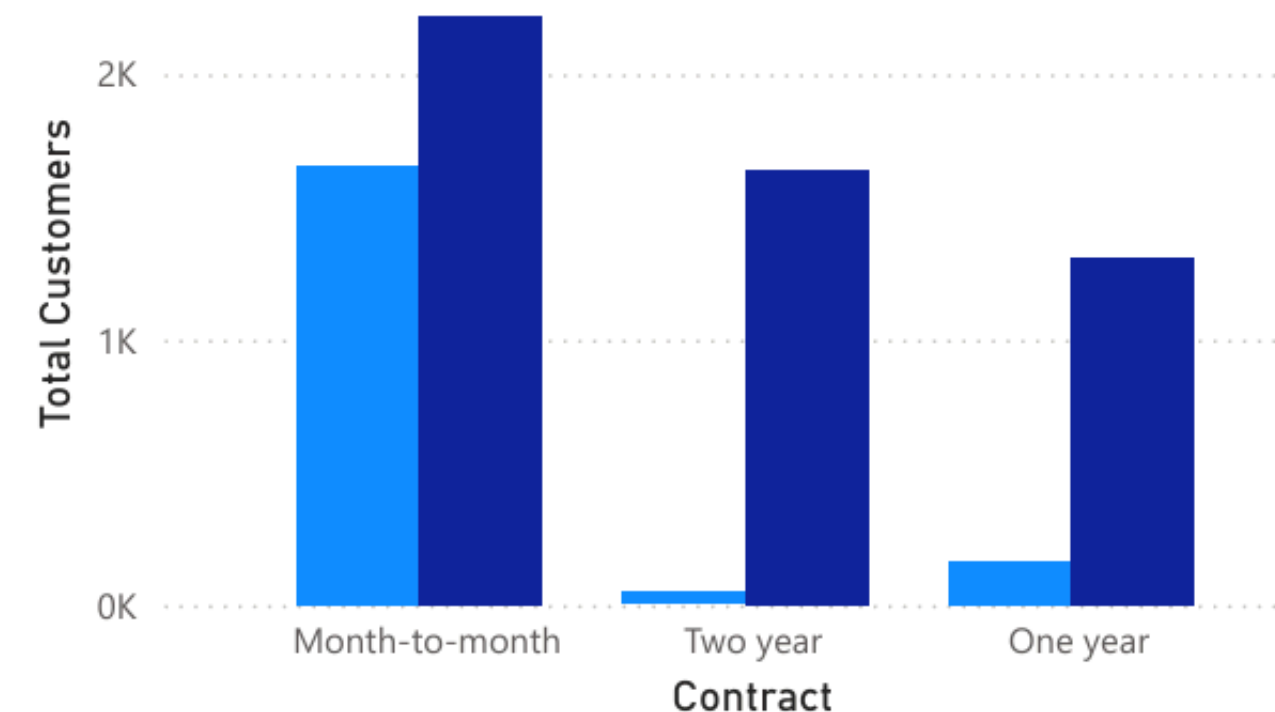- Two-year contracts show the lowest churn.

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.
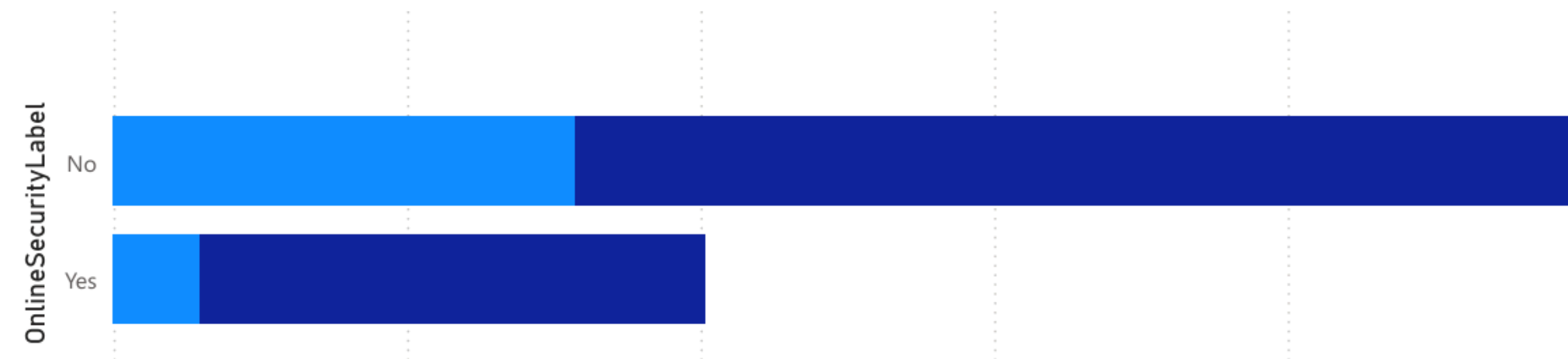- Customers with partners are more stable and likely to stay longer.

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

Revenue Impact of Churn

Observation:
- Non-churned customers contribute significantly more total revenue.
- Churned customers represent a large revenue loss opportunity.
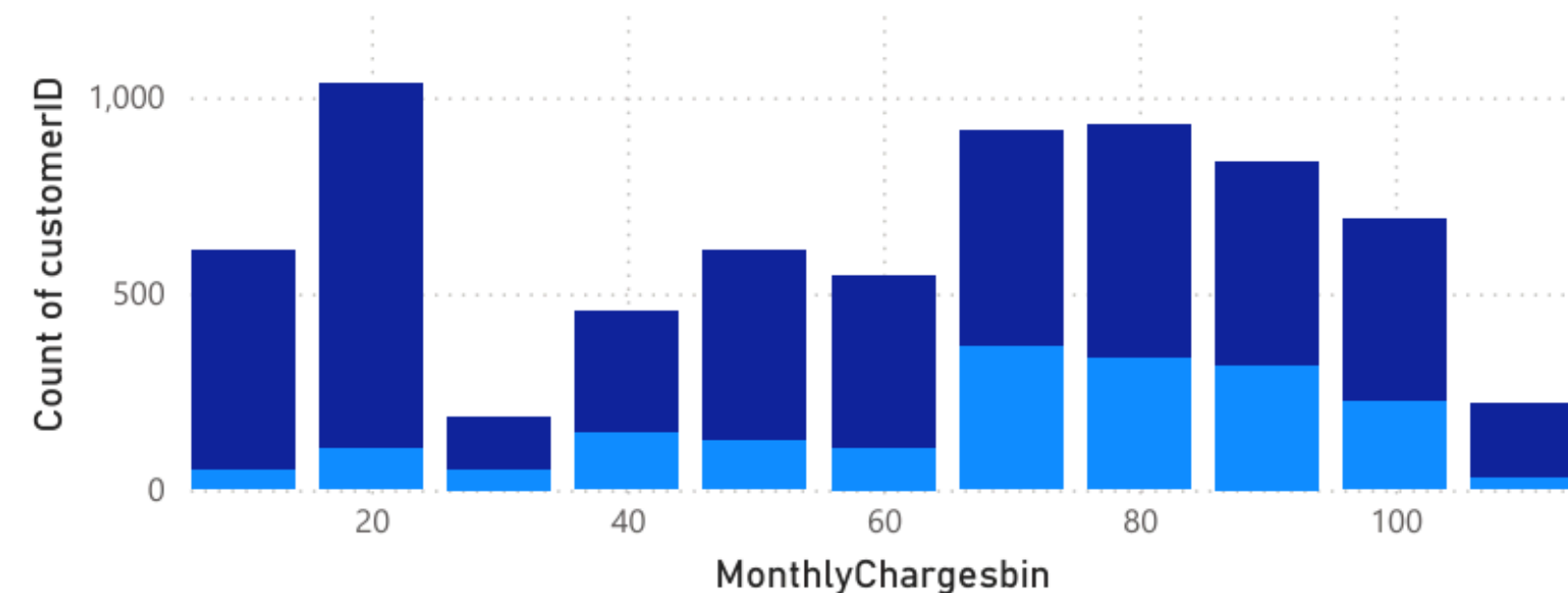
Business implication:
- High-paying customers need premium support and personalized offers.

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

Count of customerID by MonthlyChargesbin and ChurnLabel

ChurnLabel ●Churned ●Not Churned

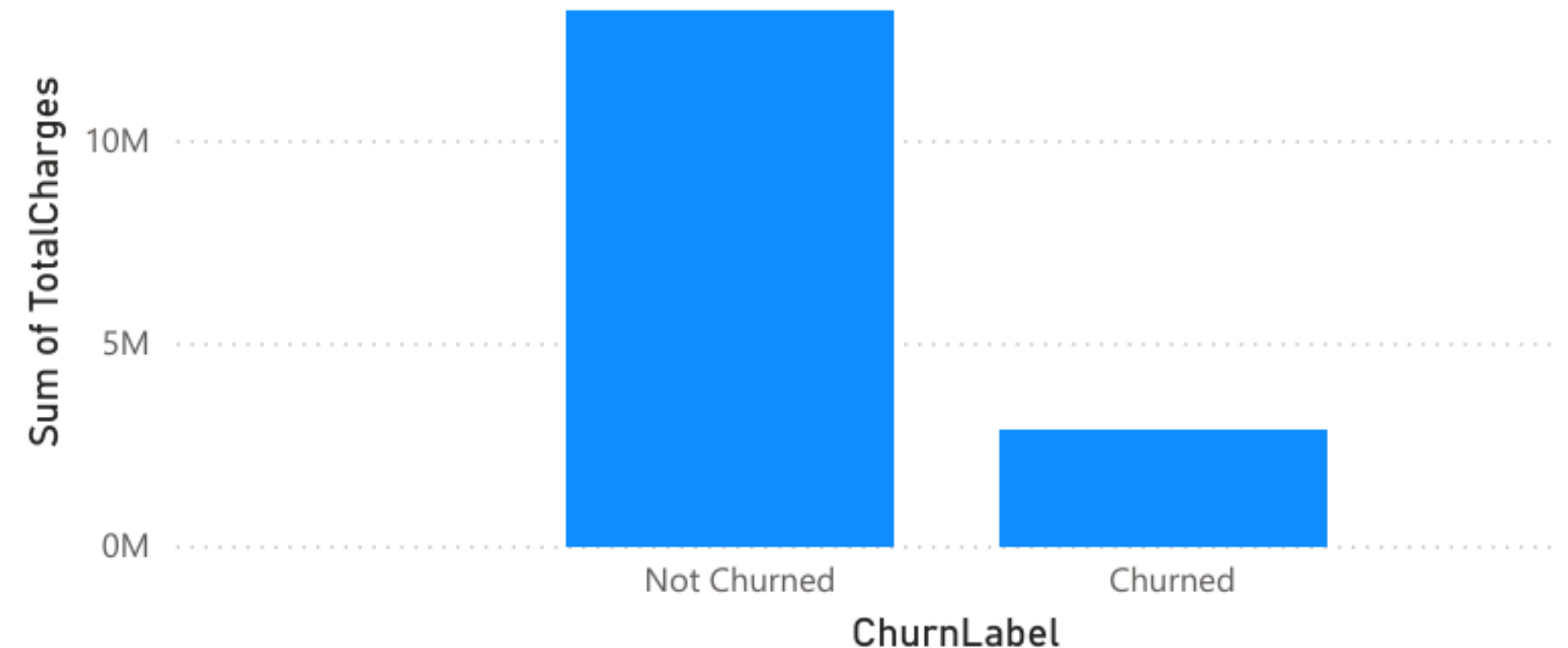Monthly Charges ↑ → Churn ↑

Churn by Online Security

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

Key Stat:

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

Conclusion:

- This is the primary churn driver segment.

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