Telco Customer Churn Analysis – Executive Report

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Executive Summary

This report presents the results of customer churn analysis performed on the Kaggle Telco Customer Churn dataset. The dataset was cleaned and processed in Python before creating dashboards in Tableau. The report provides a comprehensive explanation of each dashboard and highlights the major findings that business leaders can act upon.

Data & Methodology

Dataset: Telco Customer Churn (Kaggle). The provided cleaned CSV was analyzed in Python (pandas). We standardized column names, coerced numeric fields (MonthlyCharges, TotalCharges, Tenure), and created a binary churn flag (Yes/No → 1/0).

Key KPIs:

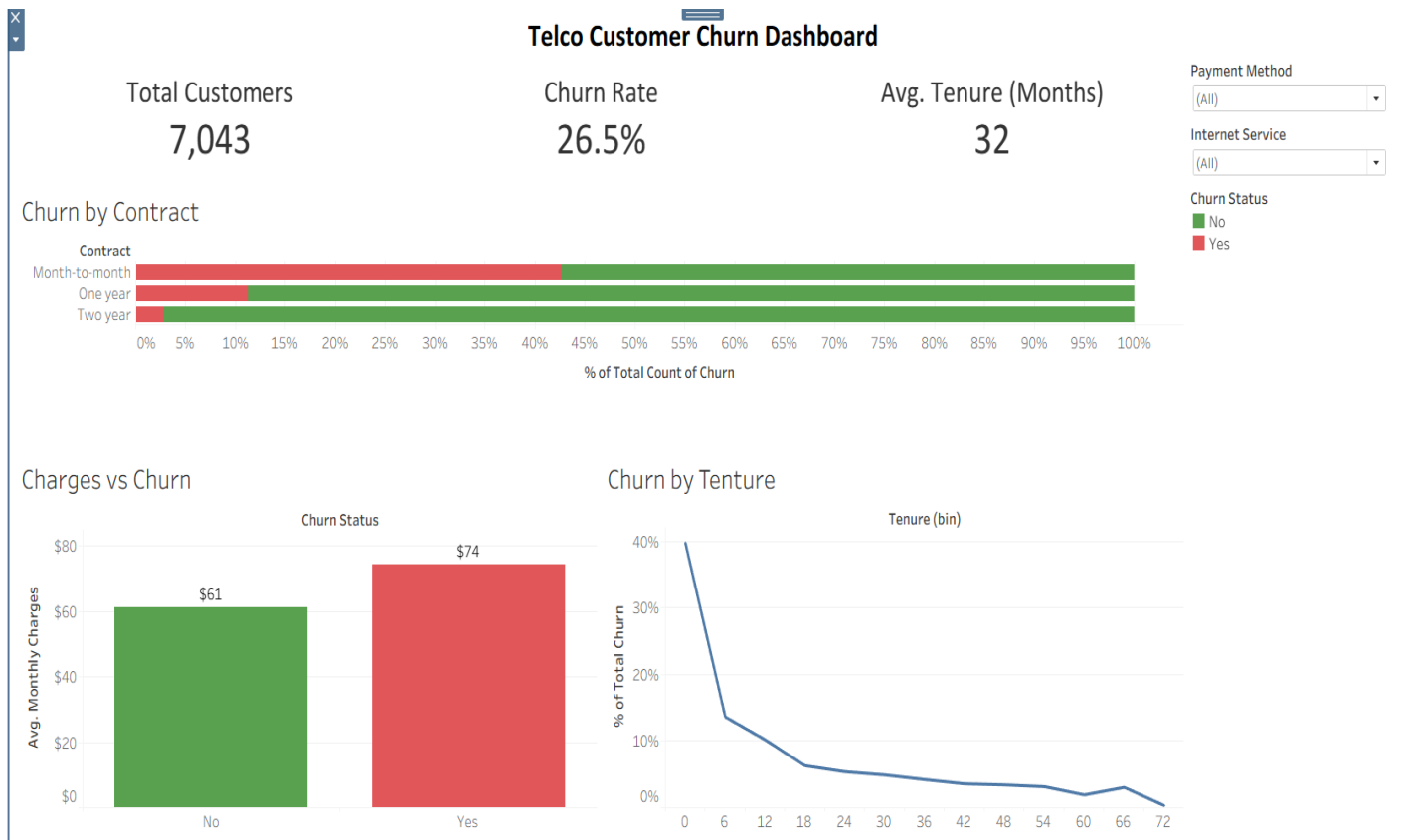| Metric	Value
Total Customers	7,043
Churn Rate	26.5%
Average Tenure (months)	32
Average Monthly Charges – Churned	$74
Average Monthly Charges – Retained	$61
Monthly Revenue Lost (churned)	$139,131
% Revenue Lost	30.5%

Dashboard

1. Customer Churn Overview Dashboard

This dashboard provides an executive-level summary of customer churn. It presents three key KPIs at the top: total customers, churn rate, and average tenure. These metrics set the overall context of the churn problem.

The 'Churn by Contract' chart reveals that churn is heavily concentrated among customers with month-to-month contracts, while churn rates are much lower among those on one- and two-year contracts.

The 'Charges vs Churn' chart compares the average monthly charges of churned vs non-churned customers. Churned customers pay significantly more on average ($74) compared to those who stayed ($61), indicating price sensitivity.

The 'Churn by Tenure' line chart highlights that most churn occurs in the first 6–12 months of customer tenure. Retention improves substantially as tenure increases, reinforcing the importance of early customer engagement.
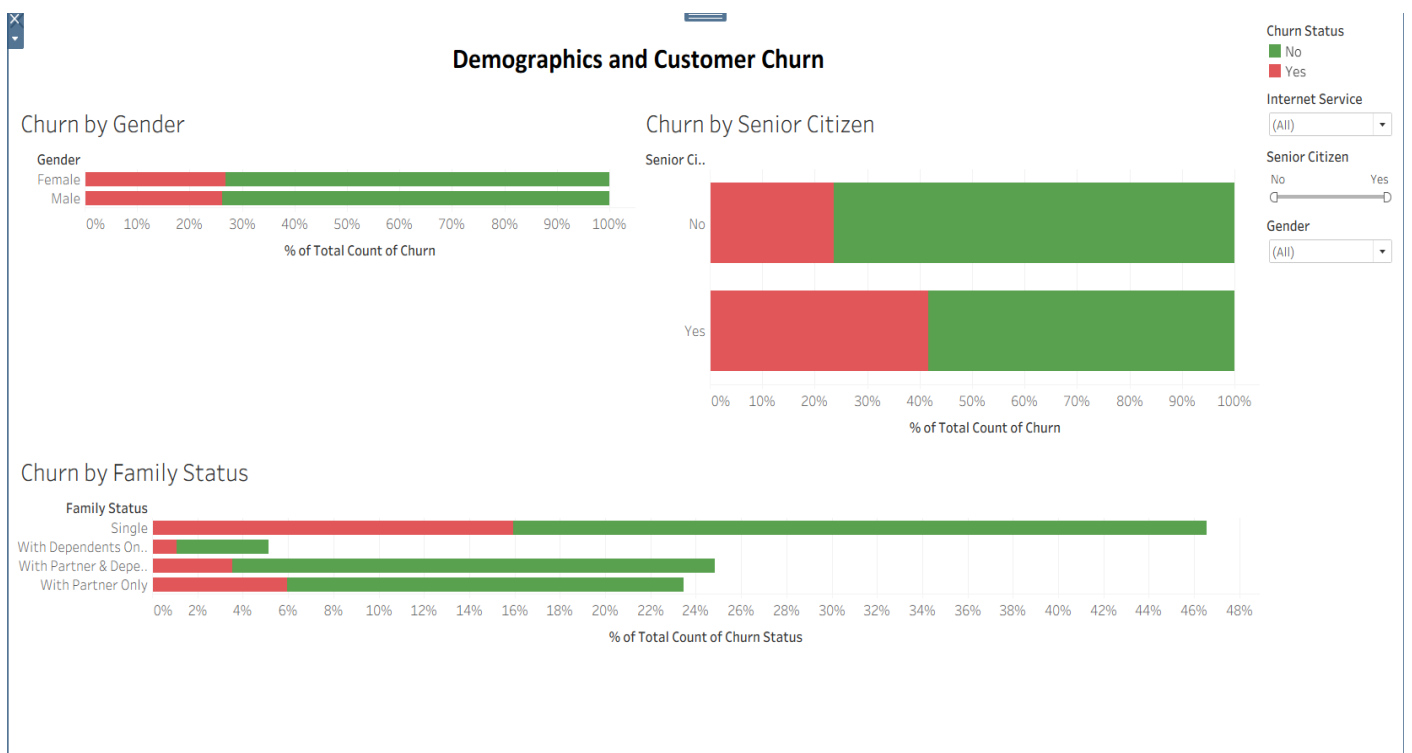
Telco Customer Churn Dashboard

Total Customers	Churn Rate	Avg. Tenure (Months)
7,043	26.5%	32

Payment Method
(All) ▾

Internet Service
(All) ▾

Churn Status
■ No
■ Yes

Churn by Contract

Charges vs Churn

Churn by Tenture

2. Demographics and Customer Churn Dashboard

This dashboard explores whether demographic factors are correlated with churn.

The 'Churn by Gender' chart shows no significant difference between male and female customers.

The 'Churn by Senior Citizen' chart indicates that senior citizens are more likely to churn than non-seniors. This may reflect different levels of service adoption or sensitivity to costs.

The 'Churn by Family Status' chart (single, with partner, with dependents) demonstrates that customers with partners and dependents are less likely to churn, possibly due to bundled family service needs. In contrast, single customers show a much higher churn rate.

Demographics and Customer Churn

Churn Status
■ No
■ Yes

Internet Service
(All) ▾

Senior Citizen
No ———— Yes

Gender
(All) ▾

Churn by Gender

Churn by Senior Citizen

Churn by Family Status

3. Services & Products Impact on Customer Churn Dashboard

This dashboard investigates the role of internet services, additional products, and payment methods on churn.

The 'Churn by Internet Service' chart shows that fiber optic customers have the highest churn rates, while DSL customers are relatively more stable. Customers with no internet service have very low churn, but this is because many are legacy low-usage accounts.

The 'Churn by Payment Method' chart reveals that customers paying by electronic check churn disproportionately more than those using credit card, bank transfer, or mailed checks. This may indicate higher risk among digitally-savvy but less loyal customers.

The 'Churn by Online Security', 'Churn by Tech Support', and 'Churn by Streaming TV' charts all show that customers without these value-added services are more likely to churn. Offering bundles with these services may reduce churn rates.
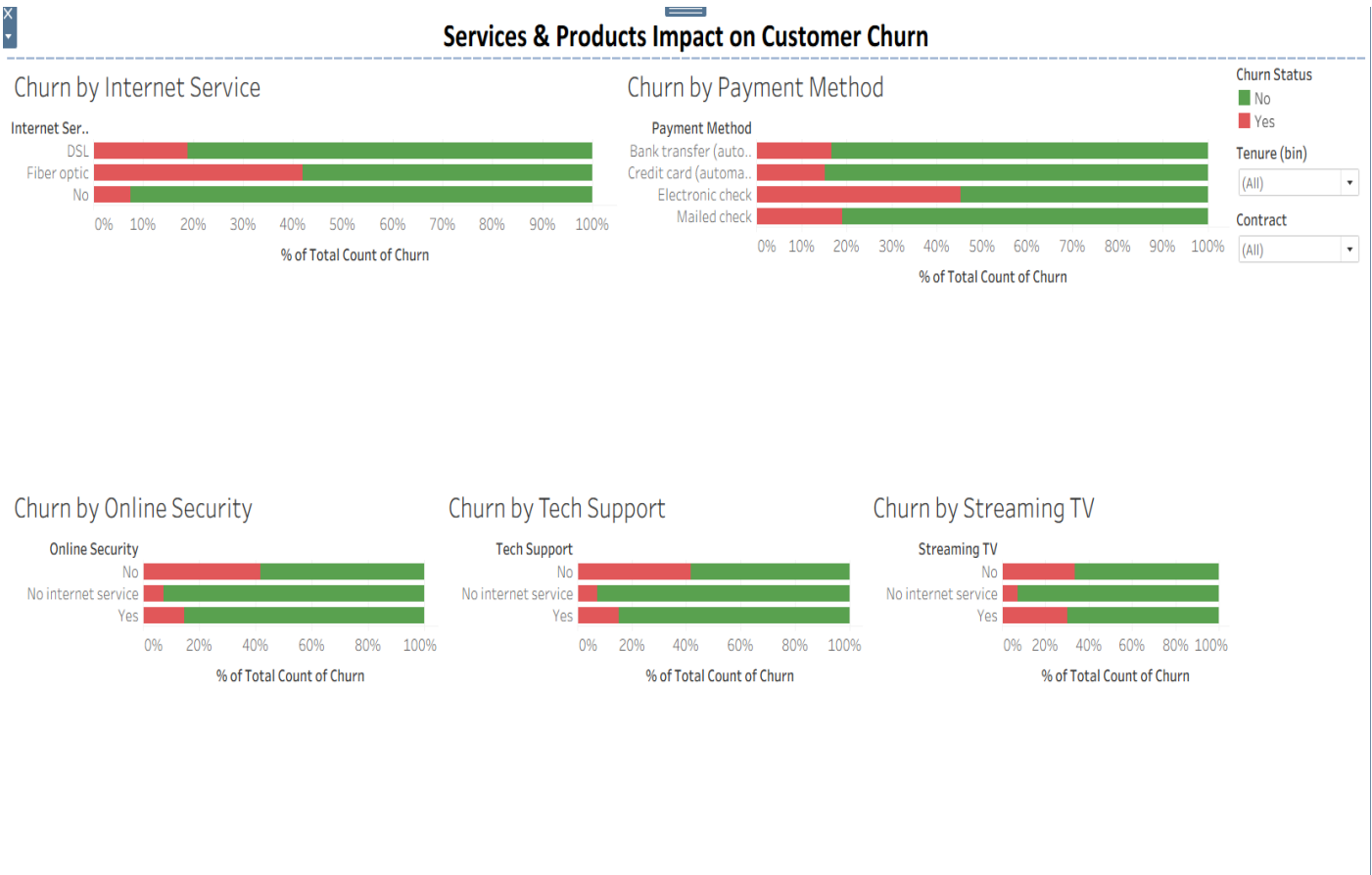
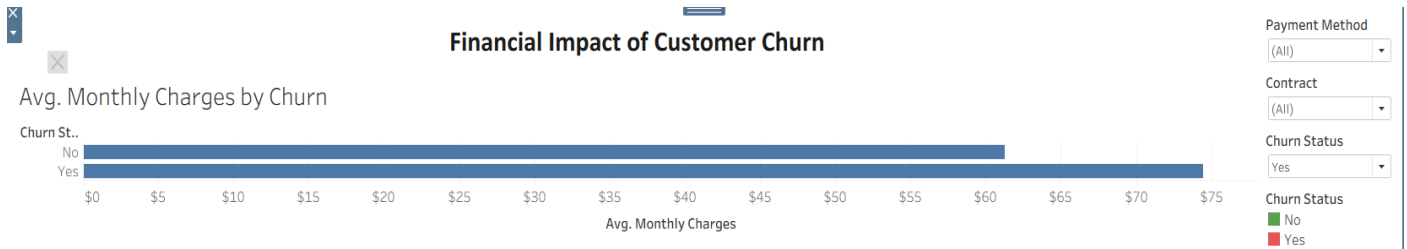# 4. Financial Impact of Customer Churn Dashboard

This dashboard quantifies the financial consequences of churn.

The 'Avg. Monthly Charges by Churn' chart shows that customers who churned typically had higher monthly charges compared to those who stayed. This suggests that high-paying customers are at greater risk.

The 'Revenue Loss Estimate' card calculates the total monthly revenue lost due to churn (~$139K).

The '% Revenue Lost' KPI contextualizes this, showing that 30.5% of total monthly revenue is lost to churn.

The 'Total Charges Distribution' box plot illustrates how churned customers tend to have lower lifetime revenue compared to retained ones. While some churned customers spent heavily, the median revenue contribution is lower. This view highlights that while churn impacts overall revenue, not all churned customers have equal financial weight.
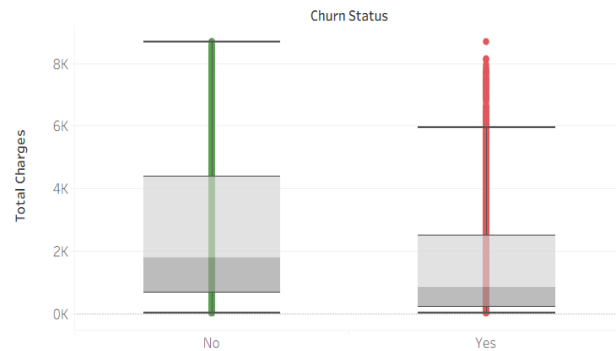
Financial Impact of Customer Churn

Payment Method
(All)

Contract
(All)

Churn Status
Yes

Avg. Monthly Charges by Churn

Churn St..
No
Yes

$0 $5 $10 $15 $20 $25 $30 $35 $40 $45 $50 $55 $60 $65 $70 $75

Avg. Monthly Charges

Churn Status
■ No
■ Yes

Revenue Loss Estimate

Revenue Loss Estimate: $70,249

% Revenue Lost

% Revenue Lost: 30.5%

Total Charges Distribution

Churn Status

Total Charges
8K
6K
4K
2K
0K

No   Yes

Recommendations

- Prioritize converting month-to-month contracts into 1-year or 2-year contracts with retention incentives.
- Focus retention efforts in the first 6–12 months of customer tenure when churn risk is highest.
- Target senior citizens and single customers with tailored offers or discounts.
- Encourage reliable payment methods (e.g., credit card, bank transfer) instead of electronic checks.
- Offer bundled services (e.g., Online Security, Tech Support, Streaming TV) to increase customer stickiness.