



Telecom Customer Churn Analysis

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Project Overview

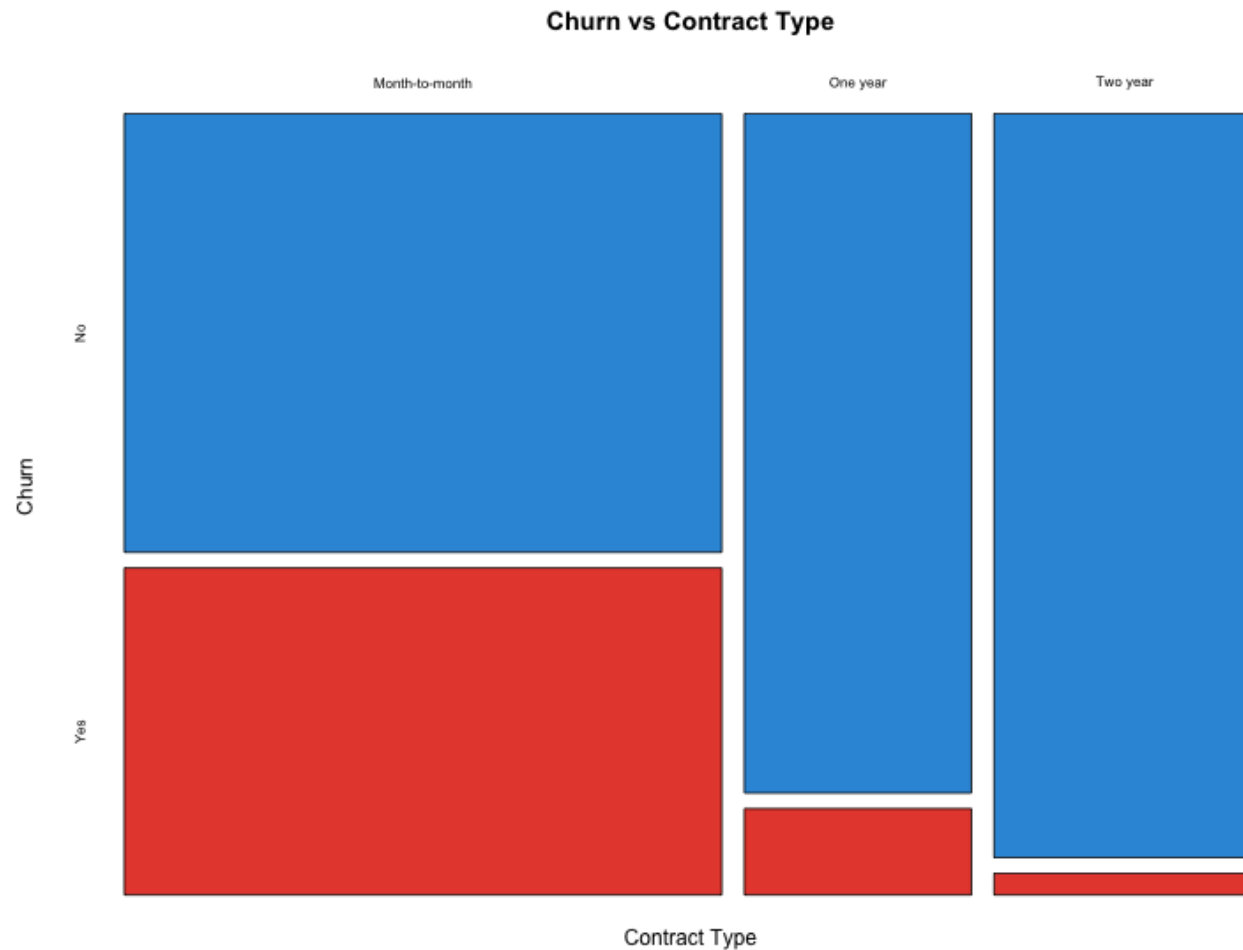
- Dataset: Telco Customer Churn (IBM Sample Data)
- 7,043 customers, 21 variables
- Goal: Understand factors that influence churn and customer value





Data Cleaning

- Converted categorical columns
 - Handled NA in TotalCharges
 - Combined levels like "No internet service" > "No"
 - Removed customerID (non-informative)
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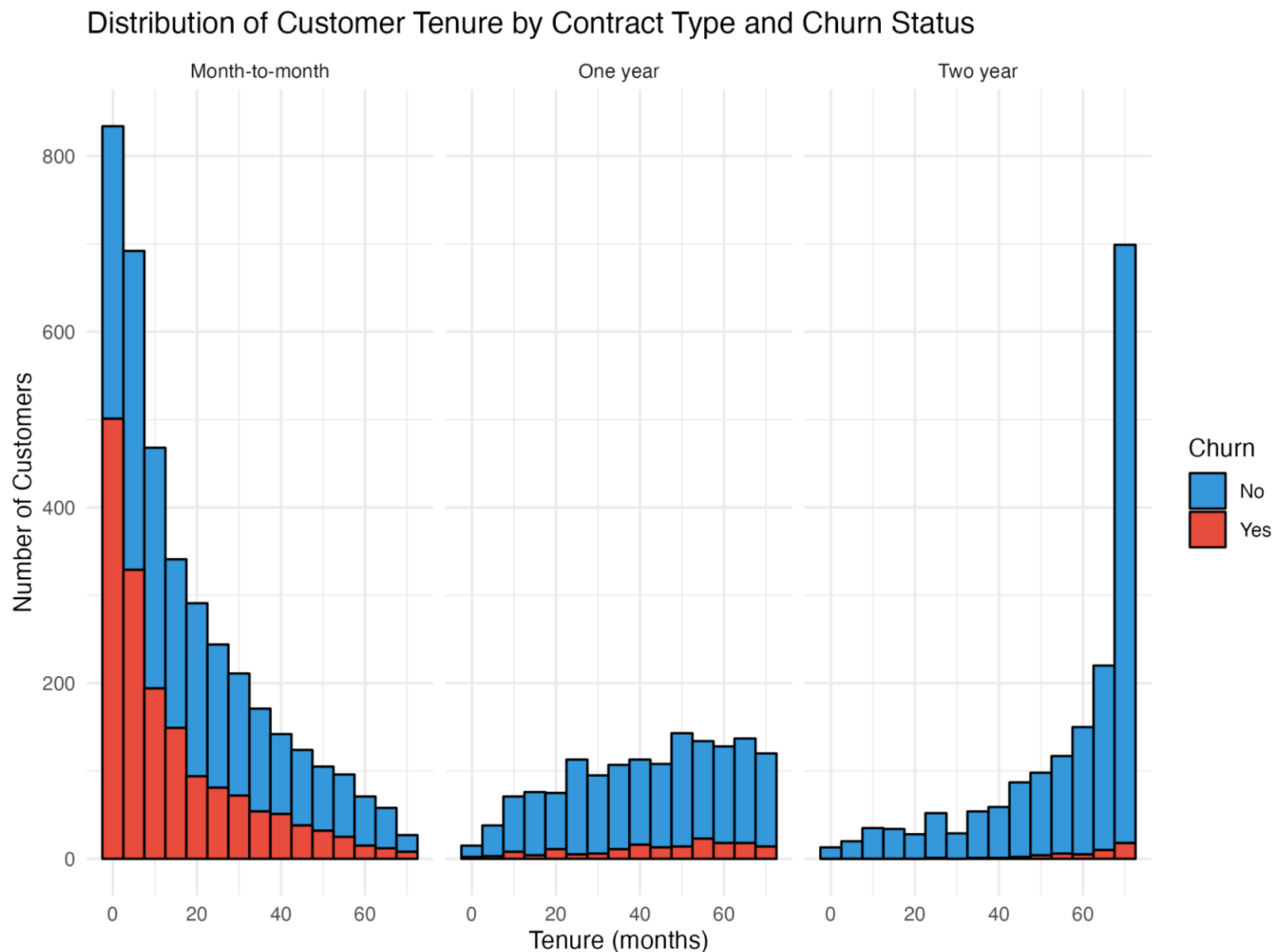


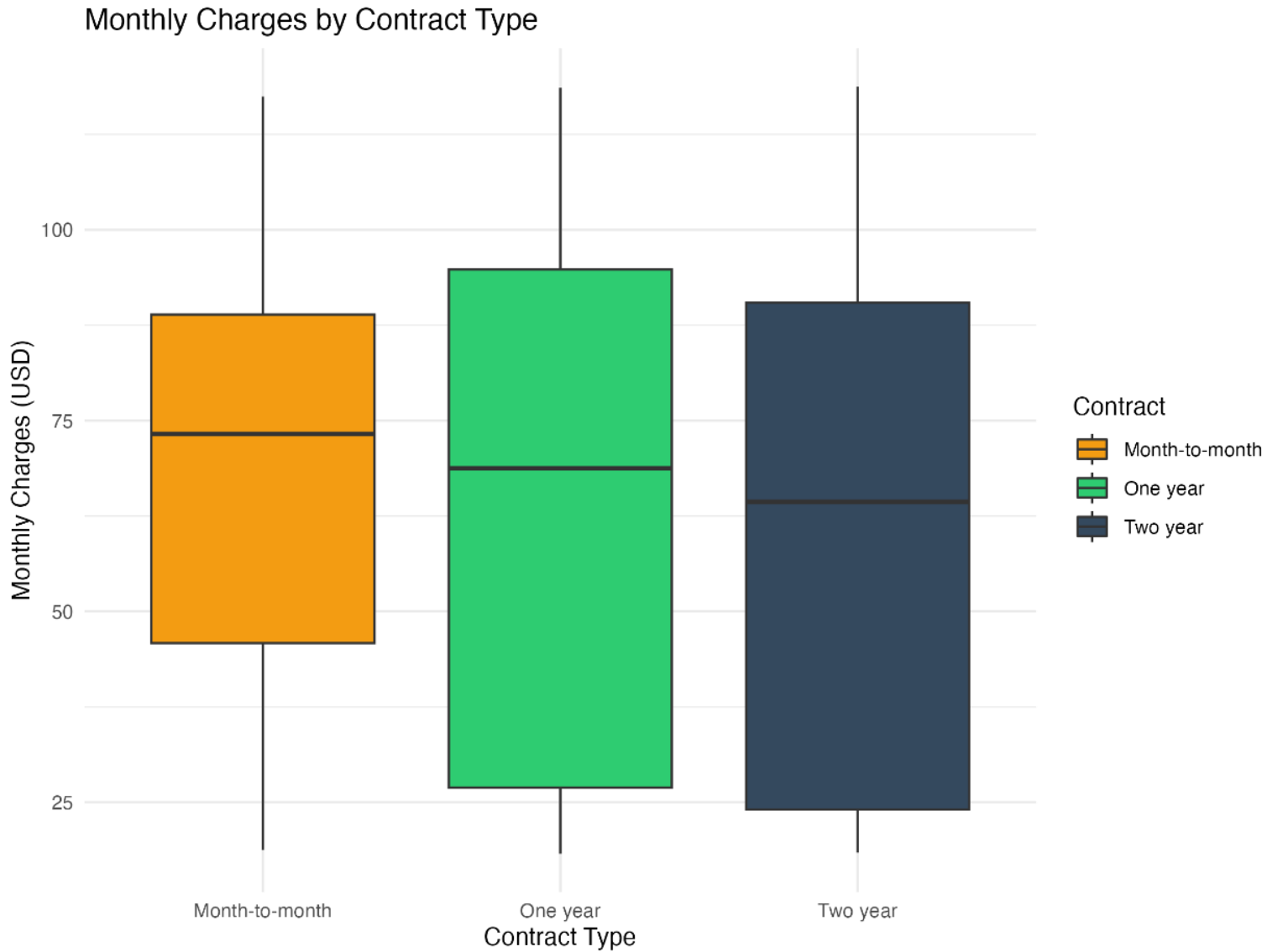
Churn By Contract Type

- Mosaic plot
- *Key Insight:* Month-to-month contracts > much higher churn
- Long-term contracts = customer stability

Tenure Distribution

- Histogram by contract + churn
- New customers (0–5 mo) = spike in churn
- Tenured customers rarely churn
- Opportunity: Focus on new customer onboarding

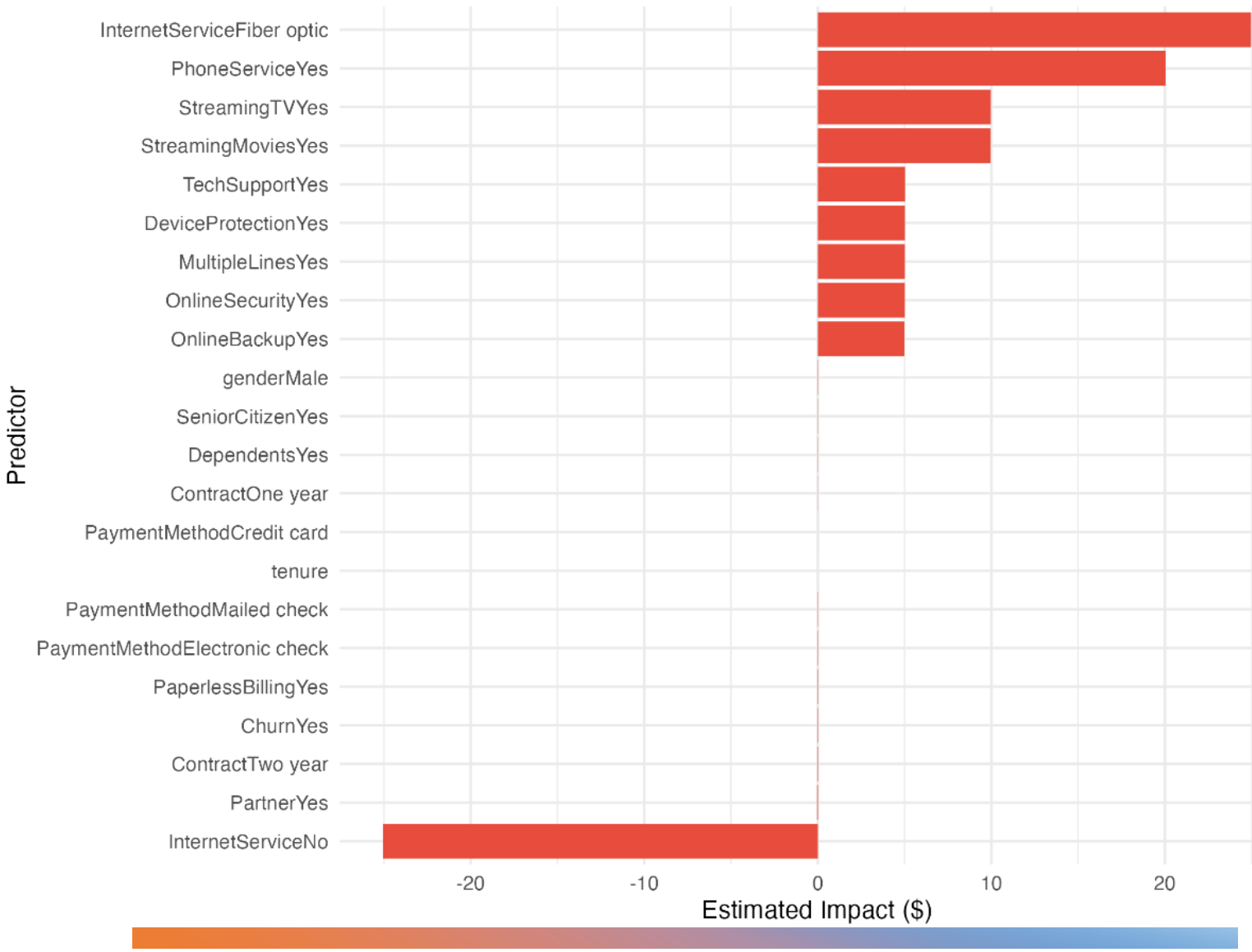




Monthly Charges

- Key Insight: Month-to-month plans have higher and more varied charges.
- Long-term contracts = lower, more stable bills — likely due to bundling or discounts.

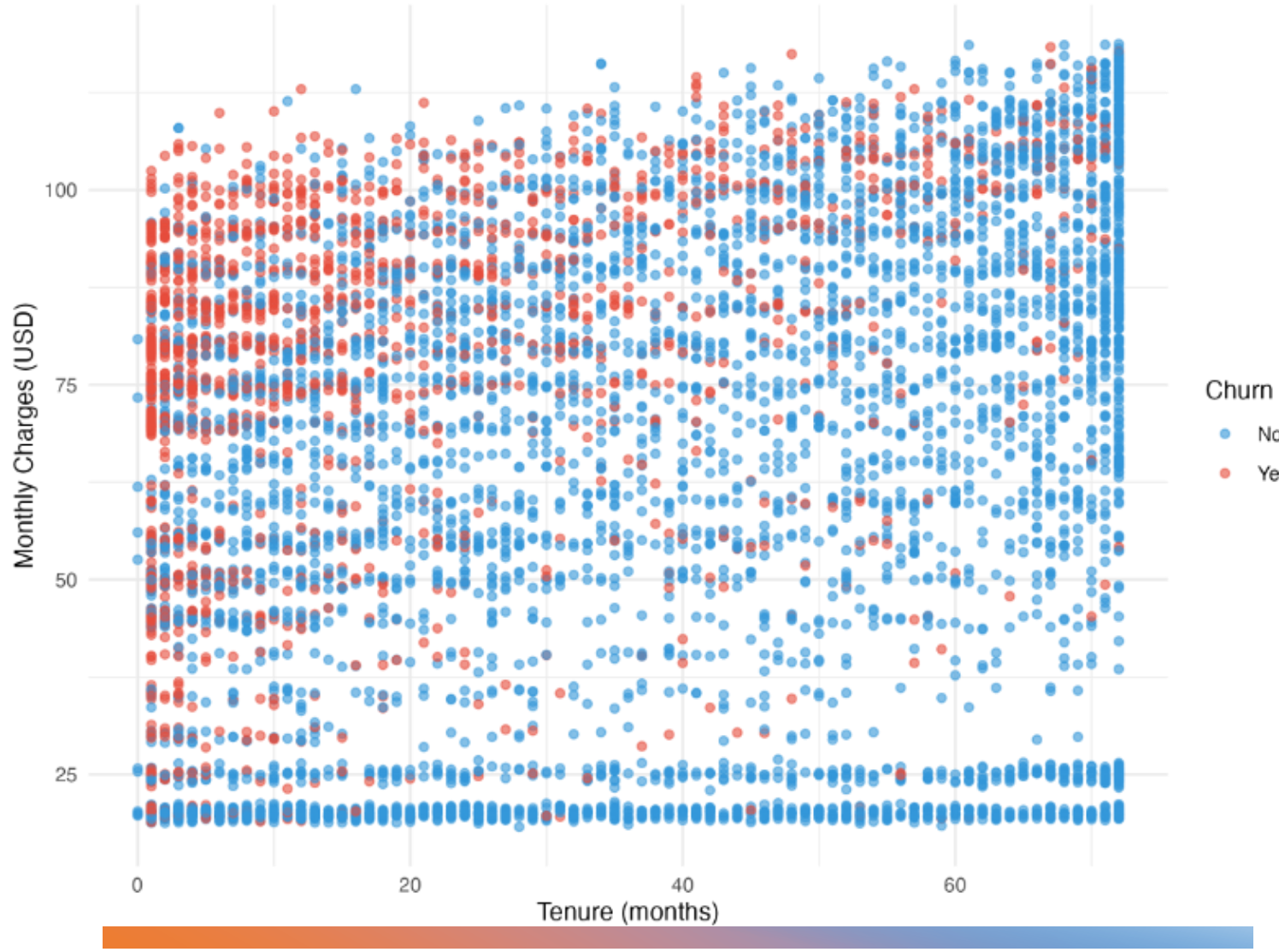
Regression Coefficients: Impact on Monthly Charges



Drivers of Monthly Charges

- Biggest cost drivers:
- Fiber optic internet
- Add-on services (StreamingTV, Tech Support)
- Month-to-month contracts
- Lower charges:
- No internet service
- Long-term contracts

Monthly Charges vs Tenure, by Churn Status



Churn By Tenure and Monthly Charges

- **Key Insight:** New, high-paying customers churn the most.
- Loyal customers = low churn, moderate charges.
- **Opportunity:** Support early high-spenders before they churn.