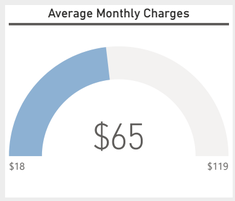
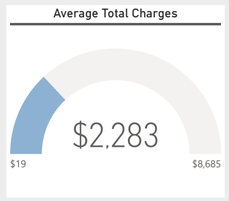
Customer Services Analysis

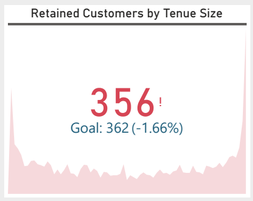
gender: Female, Male
Dependents: No, Yes
Contract: Month-to-month, One year, Two year
tenure (Months): 0 – 72
Tech Support: No, No internet service, Yes
Internet Service: DSL, Fiber optic, No

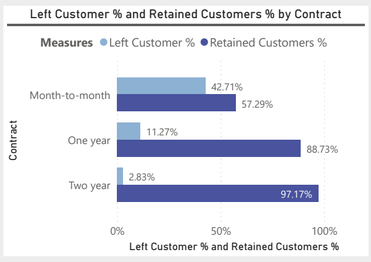
Avg Monthly Charges	Total Monthly Charges	Avg Tenure in Months	Total Customers
$64.76	$456K	32.37	7.043K

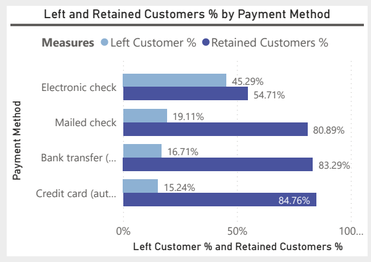
Avg Total Charges	Grand Total Charges	Left Customers	Retained Customers
$2.28K	$16M	2K	7.043K

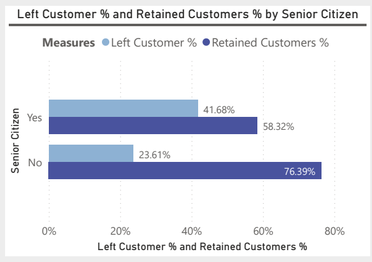


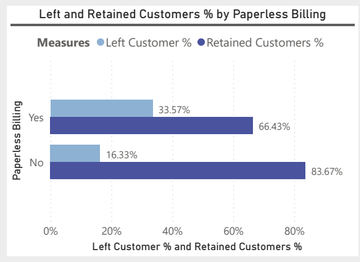


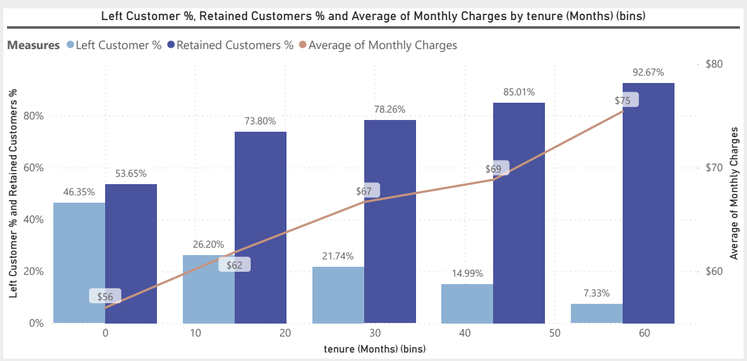


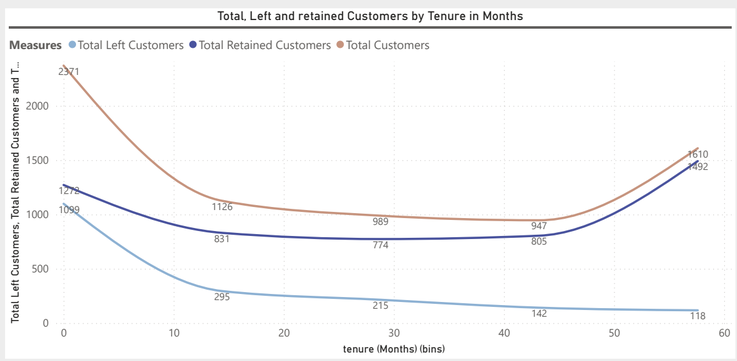


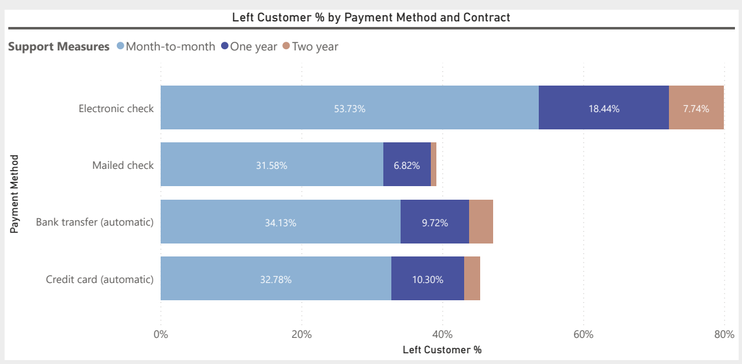


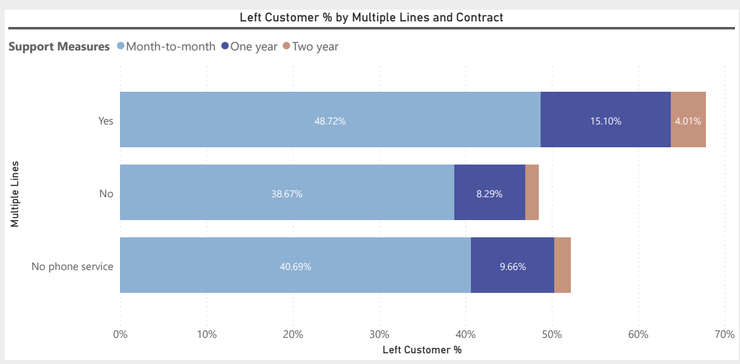


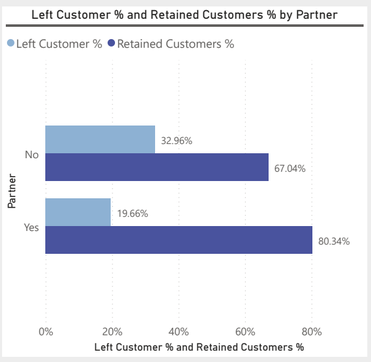


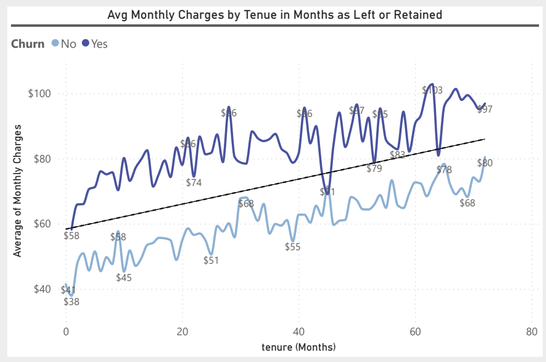


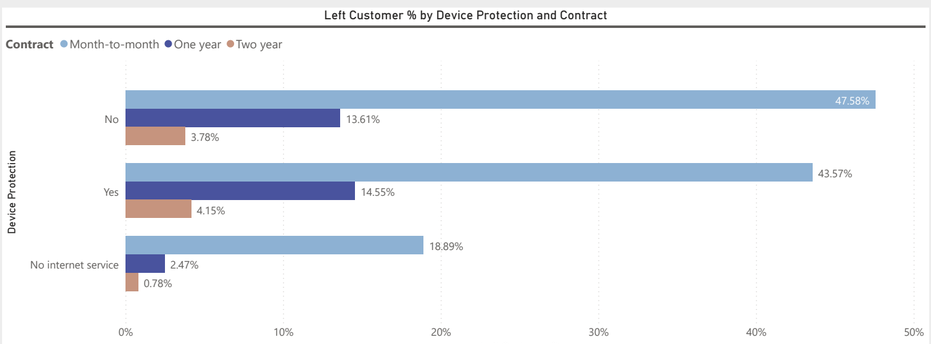


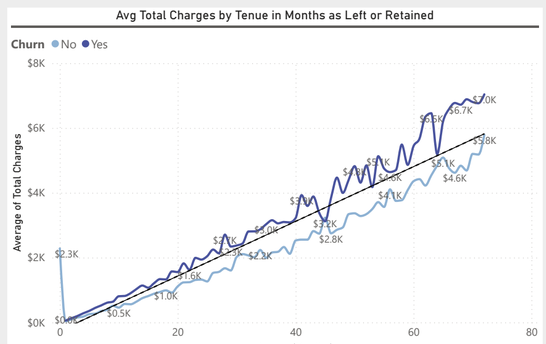


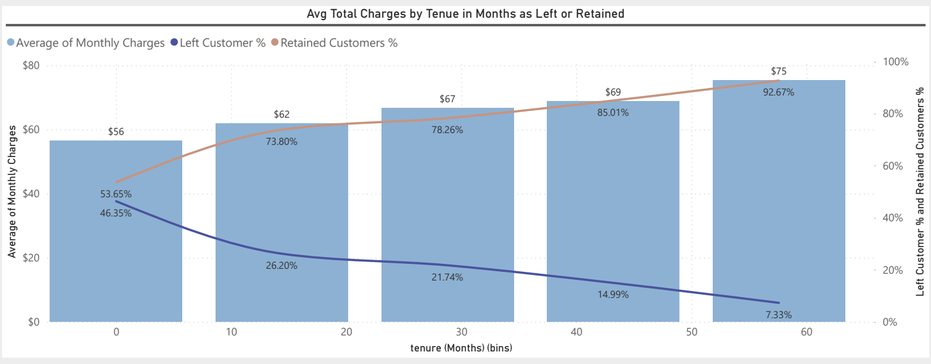


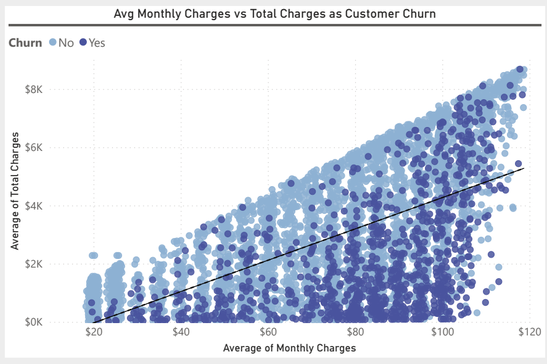












Customer Services Analysis

Phone Service: No | Yes

Online Backup: No | No internet service

Contract: Month-to-month | One year | Two year

tenure (Months): 0 — 72

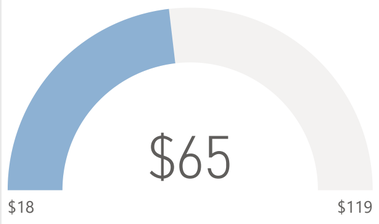
Tech Support: No | No internet service | Yes

Internet Service: DSL | Fiber optic | No

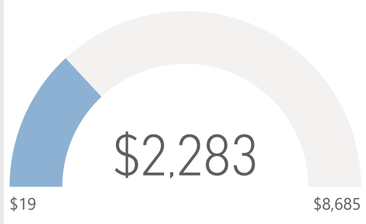
Avg Monthly Charges	Total Monthly Charges	Avg Tenure in Months	Total Customers
$64.76	$456K	32.37	7.043K

Avg Total Charges	Grand Total Charges	Left Customers	Retained Customers
$2.28K	$16M	2K	7.043K

Average Monthly Charges



Average Total Charges



Retained Customers by Tenue Size

Order of Services Analysis: Phone -> Online Security -> Internet -> Online Backup -> Streaming TV -> Phone Lines -> Tech Support

Customer Churn and Charges Analysis by Multiple Services

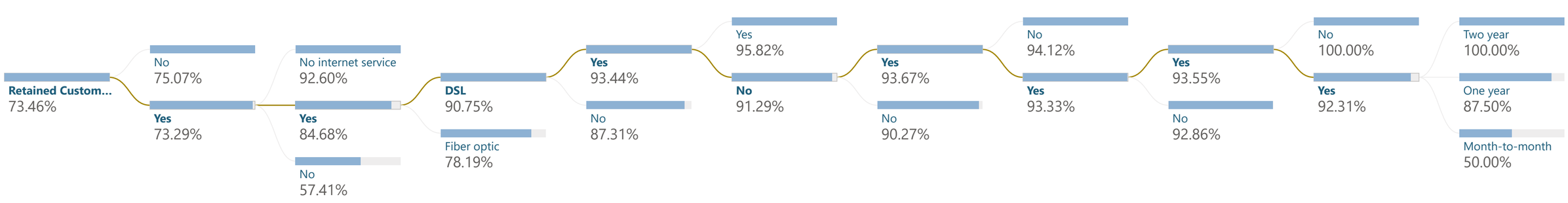
According to Above Services Order, Expand or Drill Up/Down for Further Analysis

Online Backup	Total Customers	Avg Tenure Months	Total Left Customers	Left Customer %	Total Retained Customers	Retained Customers %	Avg Monthly Charges	Avg Total Charges	Retained Customers by tenure Size	Left Customers by tenure Size
No	3088	24	1233	39.93%	1855	60.07%	$72	$1,828		
No internet service	1526	31	113	7.40%	1413	92.60%	$21	$672		
Yes	2429	45	523	21.53%	1906	78.47%	$83	$3,874		
Total	**7043**	**32**	**1869**	**26.54%**	**5174**	**73.46%**	**$65**	**$2,283**		

Measure Selection: Total Customers | Total Left Customers | Left Customer % | Total Retained Customers | **Retained Customers %** | Avg Monthly Charges | Avg Total Charges | Avg Tenure in Months

Decomposition Tree for Root Cause Analysis: Customer Churn and Charges Analysis by Multiple Services

Phone Service: Yes | Online Security: Yes | Internet Servi...: DSL | Online Backup: Yes | Streaming TV: No | Streaming Mo...: Yes | Multiple Lines: Yes | Tech Support: Yes | Device Protect...: Yes | Contract



Customer Demographic Analysis

gender: Female, Male

Dependents: No, Yes

Contract: Month-to-month, One year, Two year

tenure (Months): 0 – 72

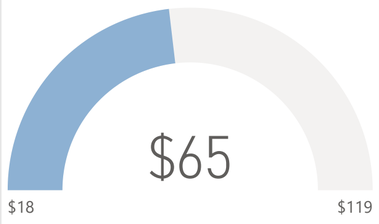
Tech Support: No, No internet service, Yes

Internet Service: DSL, Fiber optic, No

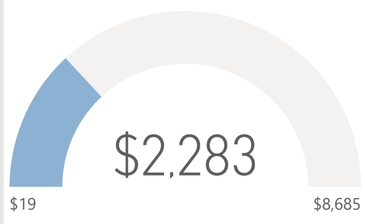
Avg Monthly Charges	Total Monthly Charges	Avg Tenure in Months	Total Customers
$64.76	$456K	32.37	7.043K

Avg Total Charges	Grand Total Charges	Left Customers	Retained Customers
$2.28K	$16M	2K	7.043K

Average Monthly Charges



Average Total Charges



Retained Customers by Tenue Size

Order of Customer Analysis: Gender -> Has Partner? -> Has Dependents -> Senior Citizen? -> Customer ID

Customer Churn and Charges Analysis by Customer Demographics

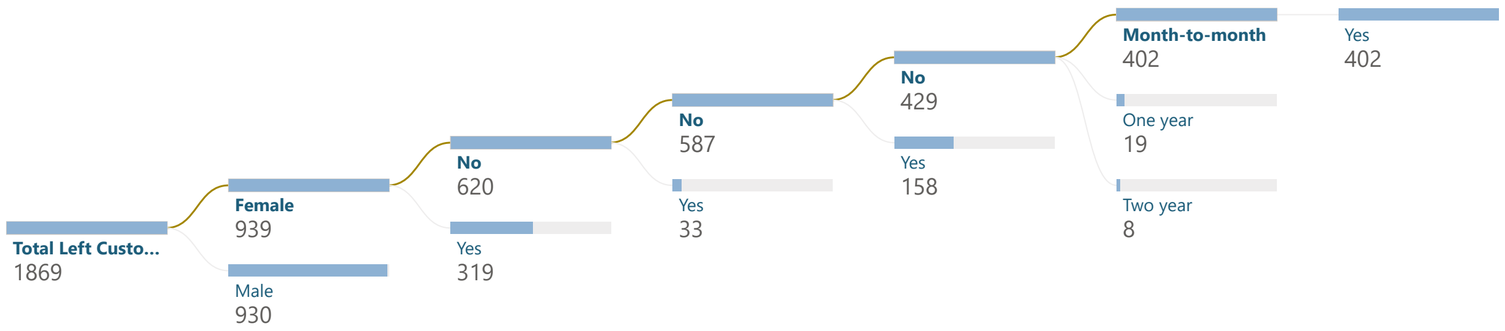
According to Above Customer Demographics Order, Expand or Drill Up/Down for Further Analysis

gender	Total Customers	Avg Tenure Months	Total Left Customers	Left Customer %	Total Retained Customers	Retained Customers %	Avg Monthly Charges	Avg Total Charges	Retained Customers by tenure Size	Left Customers by tenure Size
⊞ Female	3488	32	939	26.92%	2549	73.08%	$65	$2,283		
⊞ Male	3555	32	930	26.16%	2625	73.84%	$64	$2,283		
Total	**7043**	**32**	**1869**	**26.54%**	**5174**	**73.46%**	**$65**	**$2,283**		

Measure Selection: Total Customers | **Total Left Customers** | Left Customer % | Total Retained Customers | Retained Customers % | Avg Monthly Charges | Avg Total Charges | Avg Tenure in Months

Decomposition Tree for Root Cause Analysis: Customer Churn and Charges Analysis by Customer Demographics

gender: Female | Partner: No | Dependents: No | Senior Citizen: No | Contract: Month-to-month | Churn



Payment & Billing Analysis

Payment Type: Automatic, Manual

Paperless Billing: No, Yes

Contract: Month-to-month, One year, Two year

tenure (Months): 0 – 72

Tech Support: No, No internet service, Yes

Internet Service: DSL, Fiber optic, No

Avg Monthly Charges	Total Monthly Charges	Avg Tenure in Months	Total Customers
$64.76	$456K	32.37	7.043K

Avg Total Charges	Grand Total Charges	Left Customers	Retained Customers
$2.28K	$16M	2K	7.043K

Average Monthly Charges

Average Total Charges

Retained Customers by Tenue Size

Order of Payment Analysis: Payment Method -> Payment Type -> Paperless Billing?

Customer Churn and Charges Analysis by Payment & Billing Services

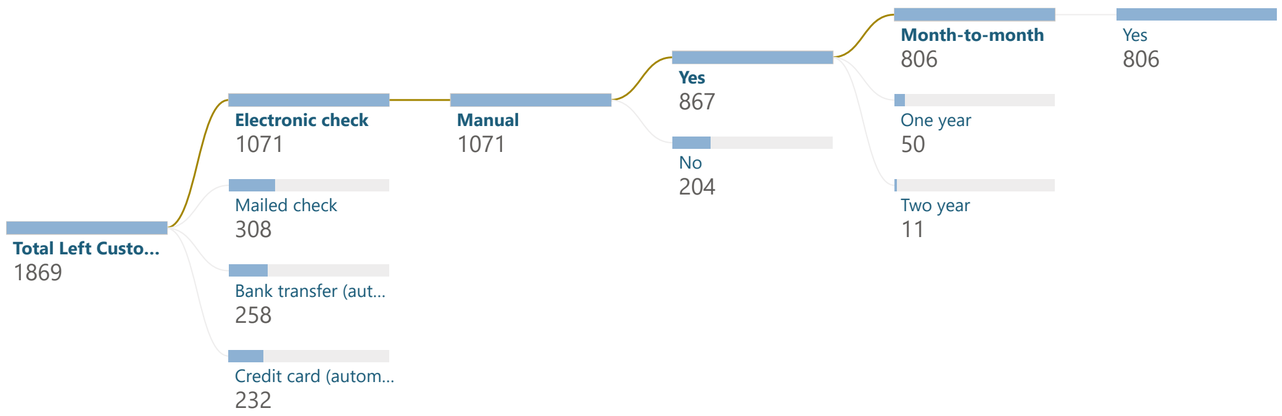
According to Above Customer Demographics Order, Expand or Drill Up/Down for Further Analysis

Payment Method	Total Customers	Avg Tenure Months	Total Left Customers	Left Customer %	Total Retained Customers	Retained Customers %	Avg Monthly Charges	Avg Total Charges	Retained Customers by tenure Size	Left Customers by tenure Size
Bank transfer (automatic)	**1544**	**44**	**258**	**16.71%**	**1286**	**83.29%**	**$67**	**$3,078**		
Credit card (automatic)	**1522**	**43**	**232**	**15.24%**	**1290**	**84.76%**	**$67**	**$3,071**		
Electronic check	**2365**	**25**	**1071**	**45.29%**	**1294**	**54.71%**	**$76**	**$2,091**		
Mailed check	**1612**	**22**	**308**	**19.11%**	**1304**	**80.89%**	**$44**	**$1,061**		
Manual	**1612**	**22**	**308**	**19.11%**	**1304**	**80.89%**	**$44**	**$1,061**		
No	**956**	**22**	**129**	**13.49%**	**827**	**86.51%**	**$37**	**$935**		
Yes	**656**	**22**	**179**	**27.29%**	**477**	**72.71%**	**$53**	**$1,243**		
Month-to-month	424	11	164	38.68%	260	61.32%	$54	$679		
One year	123	33	13	10.57%	110	89.43%	$56	$2,052		
Two year	109	50	2	1.83%	107	98.17%	$47	$2,527		
Total	**7043**	**32**	**1869**	**26.54%**	**5174**	**73.46%**	**$65**	**$2,283**		

Measure Selection: Total Customers | **Total Left Customers** | Left Customer % | Total Retained Customers | Retained Customers % | Avg Monthly Charges | Avg Total Charges | Avg Tenure in Months

Decomposition Tree for Root Cause Analysis: Customer Churn and Charges Analysis by Payment Services

Payment Meth... × Electronic check | Payment Type × Manual | Paperless Billi... × Yes | Contract × Month-to-month | Churn ×



Telecom Customer Services: Actionable Insights:

General Outcomes:

1. There is a correlation between monthly charges and customer churn rate.
2. Generally in Month-Month Contract customers left as double as compared to other contracts.

. Customer Patterns:

1. Female Customers have less tenure months and retain percentage as compared to male customers overall.
2. Customers who have dependents left more, and have more monthly charges.

. Services Analysis:

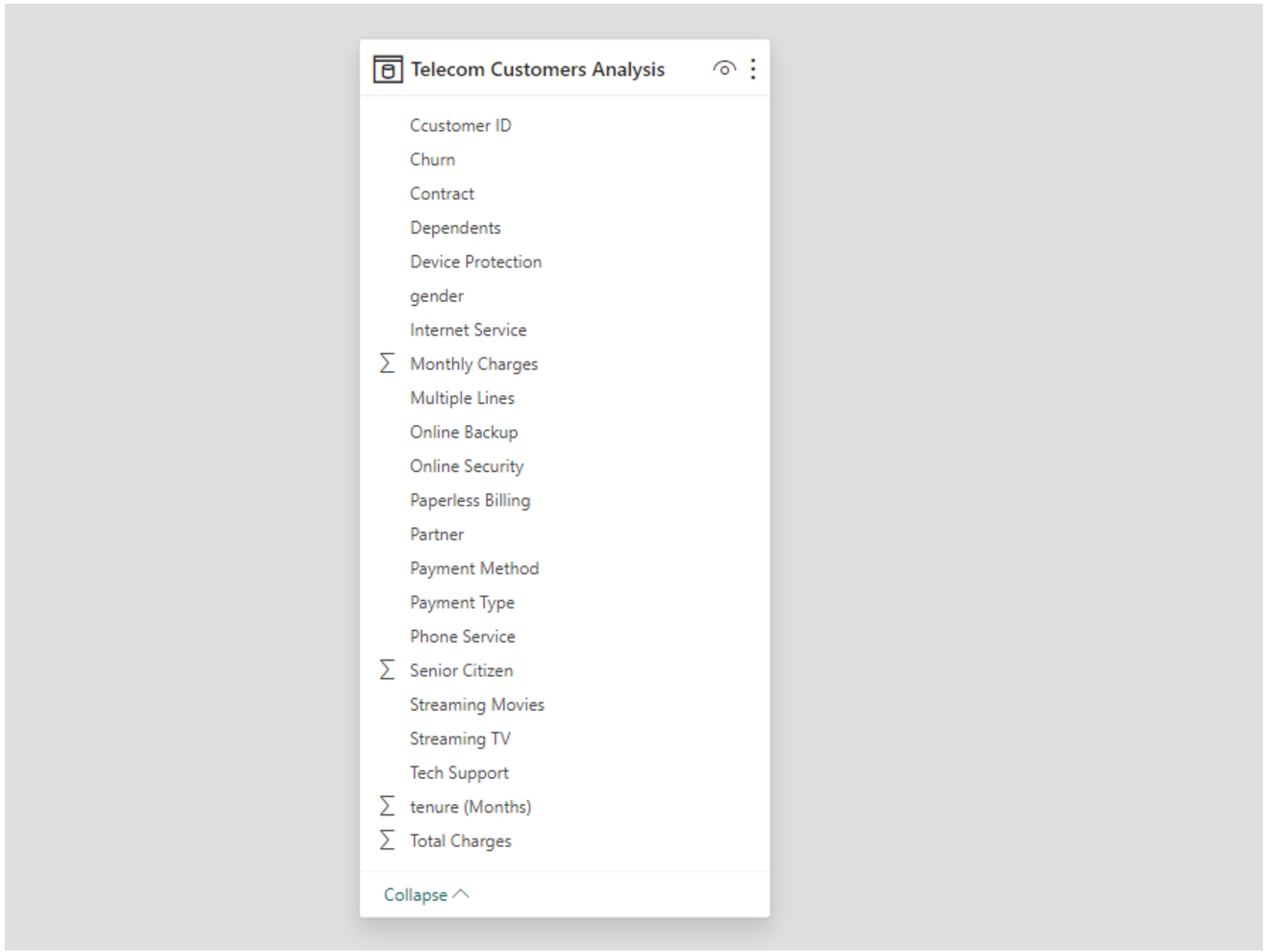
1. Customers who availed phone and internet services left more and monthly contract left more.
2. Customers who have not availed online backup and tech services left more in monthly contracts.

. Payment Analysis:

1. Customers who have used paperless billing in manual way left more.
2. Customer who paid manually as electronic check and monthly contract left more.

Business Semantics Data Model:

There are 3 Business areas (customers, payment and services to measure the customer services for effective Customer consuming analysis.



Telecom Customer Services Analysis Dataset Description

Each row represents a customer, each column contains customer's attributes described on the column Metadata.
The raw data contains 7043 rows (customers) and 21 columns (features).

Features Description:
Customer IDL Custemer Unique ID Number
gender: Customer Gender (M, F)
SeniorCitizen:Whether the customer is a senior citizen or not (1, 0)
Partner:Whether the customer has a partner or not (Yes, No)
Dependents: Whether the customer has dependents or not (Yes, No)
tenure:Number of months the customer has stayed with the company
PhoneService:Whether the customer has a phone service or not (Yes, No)
MultipleLines: Whether the customer has multiple lines or not (Yes, No, No phone service)
InternetService: Customer's internet service provider (DSL, Fiber optic, No)
OnlineSecurity:Whether the customer has online security or not (Yes, No, No internet service)

Use Cases:
Objective is to find solutions and suggestions for any possible churning

- What is the percentage of Customers who are with the active services and Customers who Churn ?
- Does gender play a role in Customers Churn ?
- Does the type of service provided leads to more/less Customers Churn?
- What's the most profitable service types?
- Profitable features and services by the company?

Dataset Source: https://www.kaggle.com/code/rakkesharv/telecom-customer-churn-analysis-eda-ml-modelling/input