

Analytics - Customer Churn

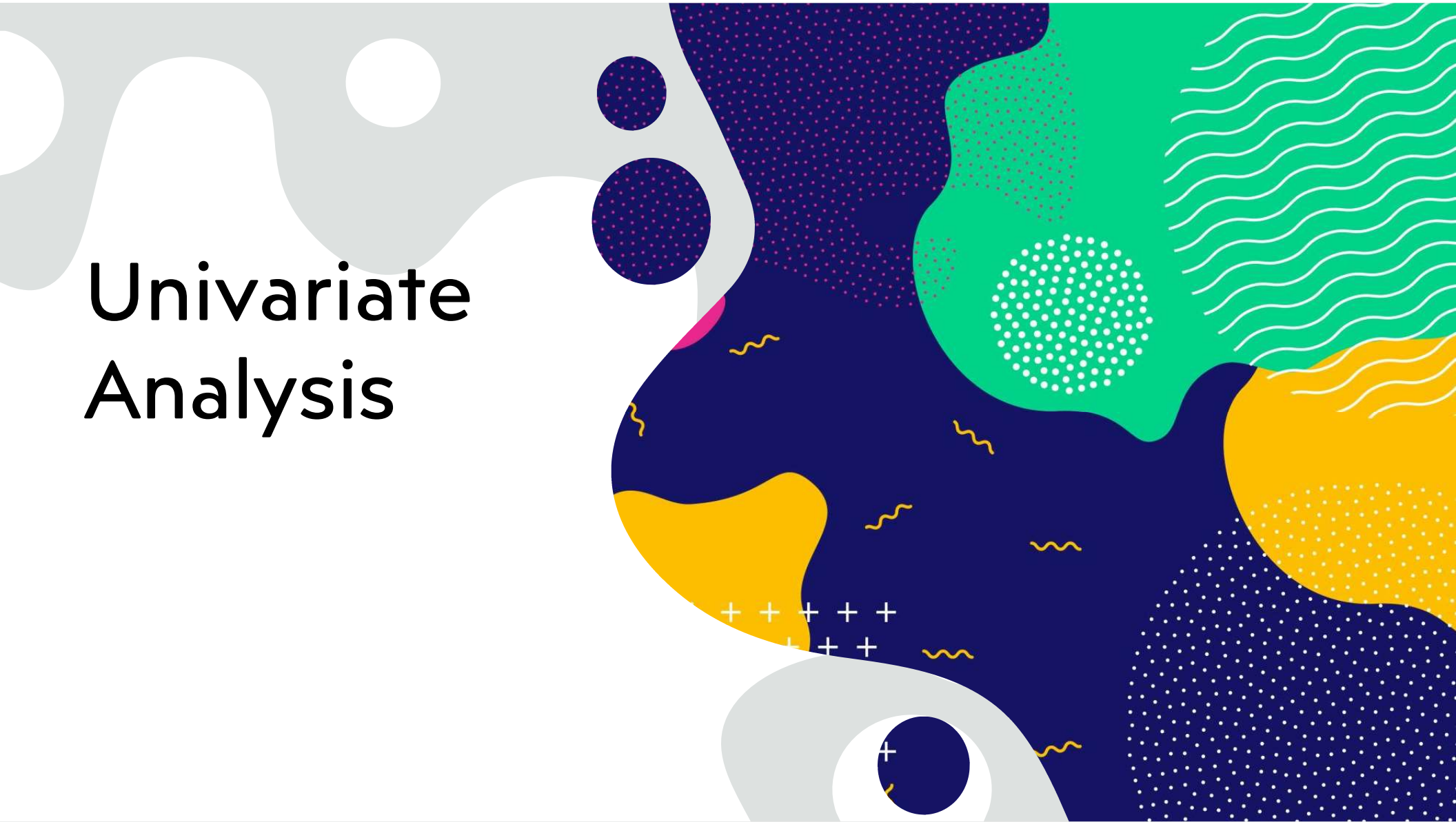


Introduction

- Dataset of features of telecommunication firm customers is analyzed. The features of the dataset are shown on the right side.
- The objective is to analyze the features of customers and find patterns and observations of customers who are churned vs who are retained.
- Churn column (20) identifies if the Customer churned or retained.

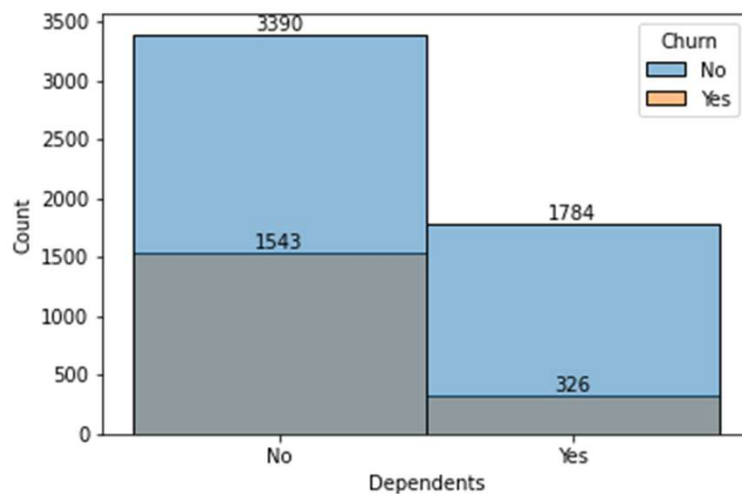
#	Column
0	customerID
1	gender
2	SeniorCitizen
3	Partner
4	Dependents
5	tenure
6	PhoneService
7	MultipleLines
8	InternetService
9	OnlineSecurity
10	OnlineBackup
11	DeviceProtection
12	TechSupport
13	StreamingTV
14	StreamingMovies
15	Contract
16	PaperlessBilling
17	PaymentMethod
18	MonthlyCharges
19	TotalCharges
20	Churn

Univariate Analysis



Dependents

Customers without dependents have a 31% churn rate compared to 15% Churn rate of customer dependents, hence they are twice more likely to churn.

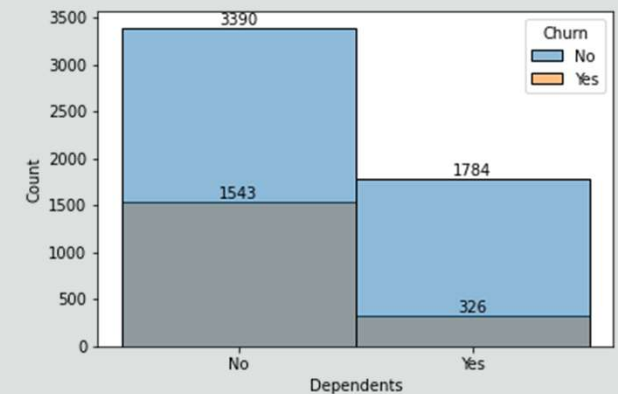


Churn	No	Yes	All
Dependents			
No	0.687209	0.312791	1.0
Yes	0.845498	0.154502	1.0
All	0.734630	0.265370	1.0

Dependents

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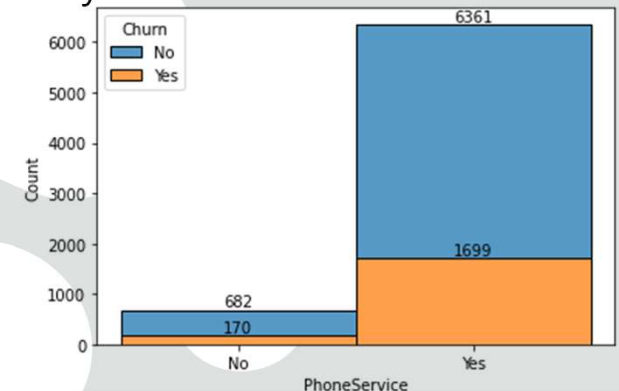
Churn	No	Yes	All
Dependents			
No	0.687209	0.312791	1.0
Yes	0.845498	0.154502	1.0
All	0.734630	0.265370	1.0



Phone Service

Phone service doesn't influence customer's choice to churn or stay

Churn	No	Yes	All
PhoneService			
No	0.750733	0.249267	1.0
Yes	0.732904	0.267096	1.0
All	0.734630	0.265370	1.0



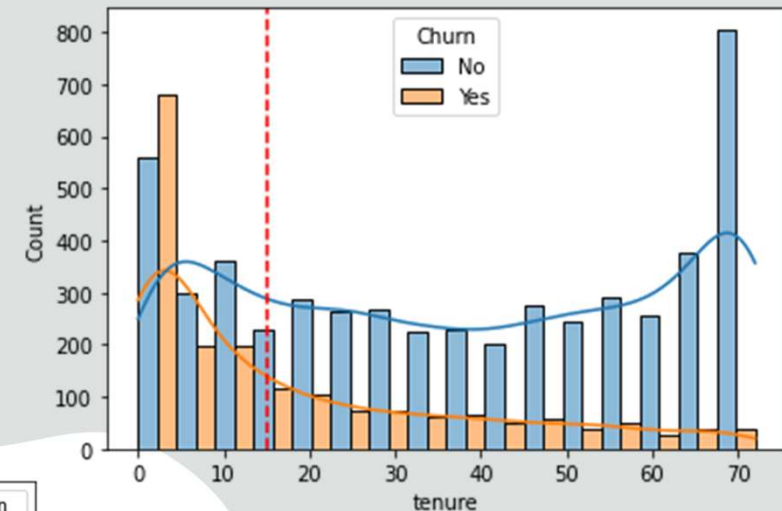
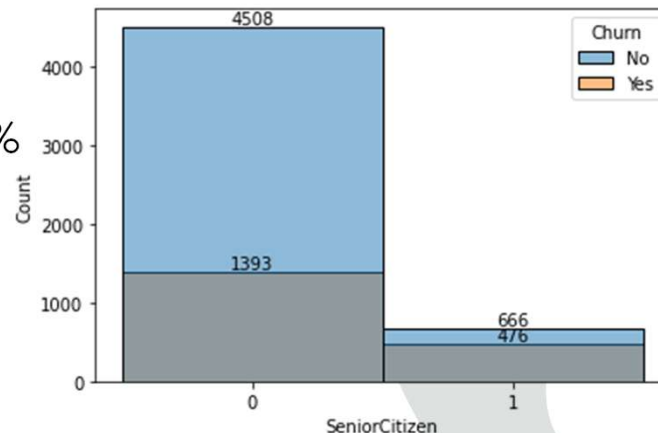
Tenure - Length

- Customer staying for longer tenure are less likely to Churn, specially after staying for 15 years or more.
- First 5 years, nearly 50% chance of churning

Senior Citizen

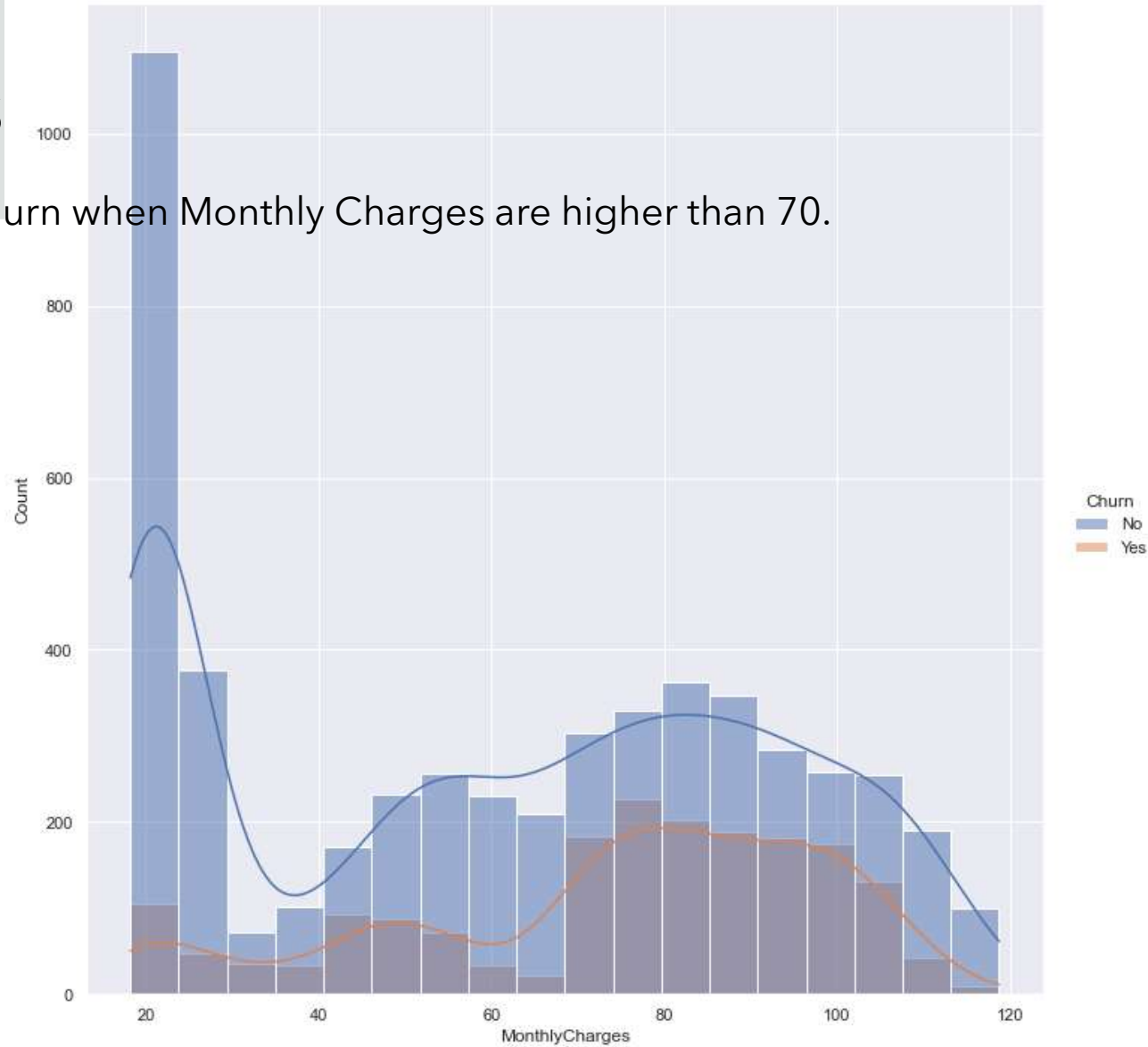
Probability of Churning:

- Senior Citizen - 41%
- Non-Senior Citizen - 23%



Monthly Charges

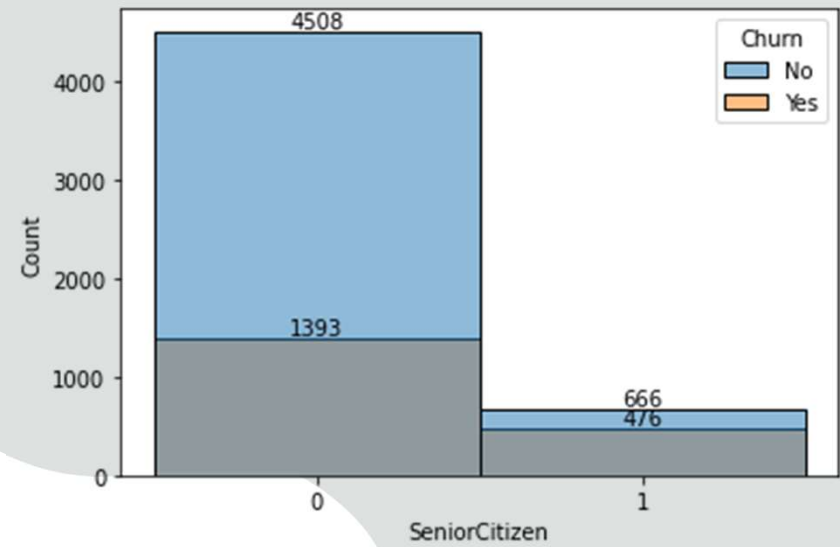
- Customers are more likely to churn when Monthly Charges are higher than 70.



Senior Citizen

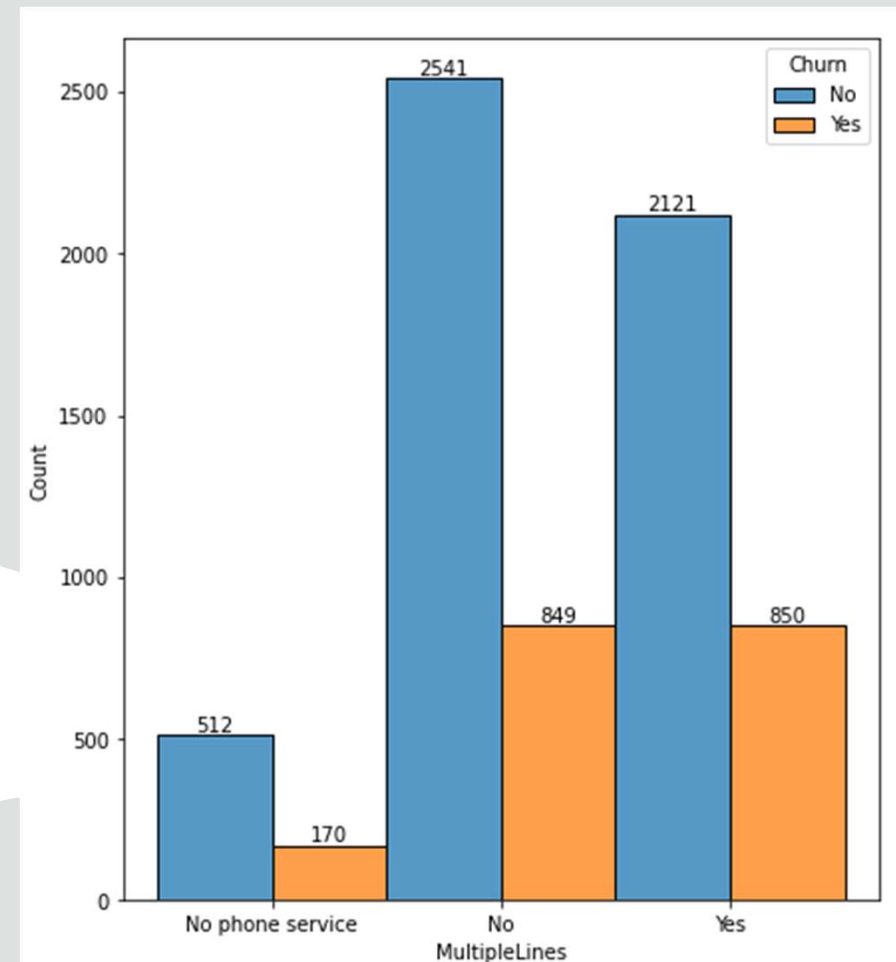
Probability of Churning:

- Senior Citizen - 41%
- Non-Senior Citizen - 23%



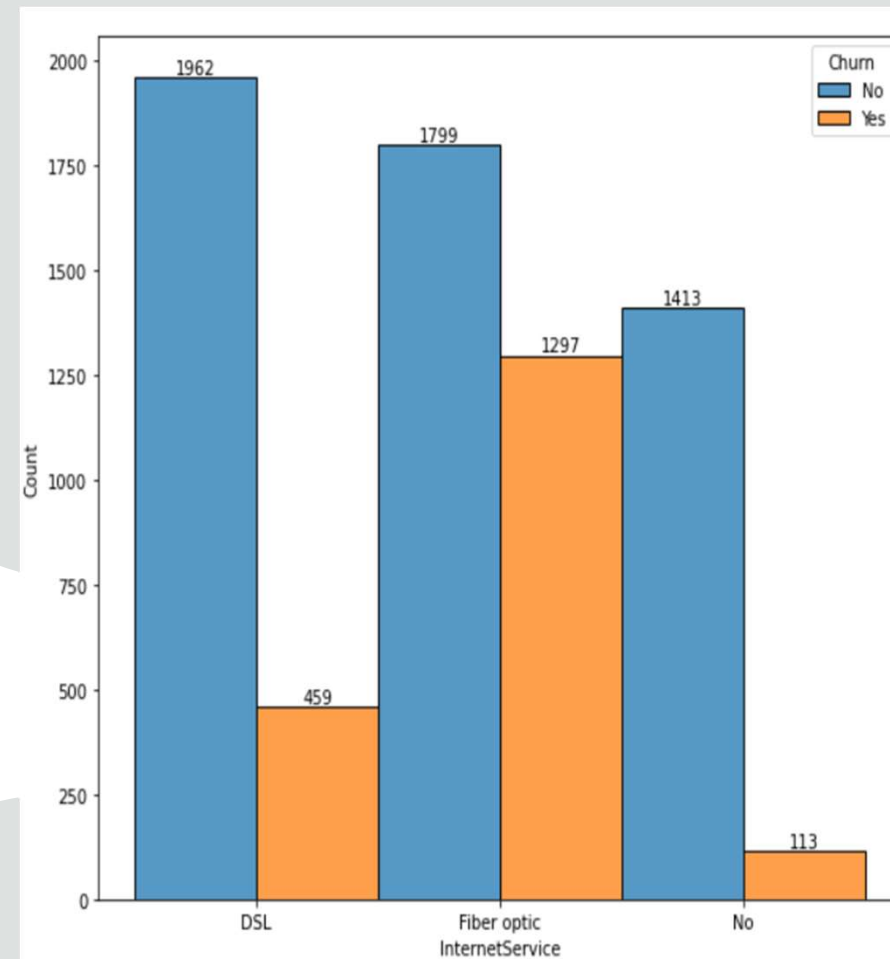
Multiple Lines

- For all types of multiple lines there is a lower probability of customer churning.
- Customers without multiple lines have a higher retention count.



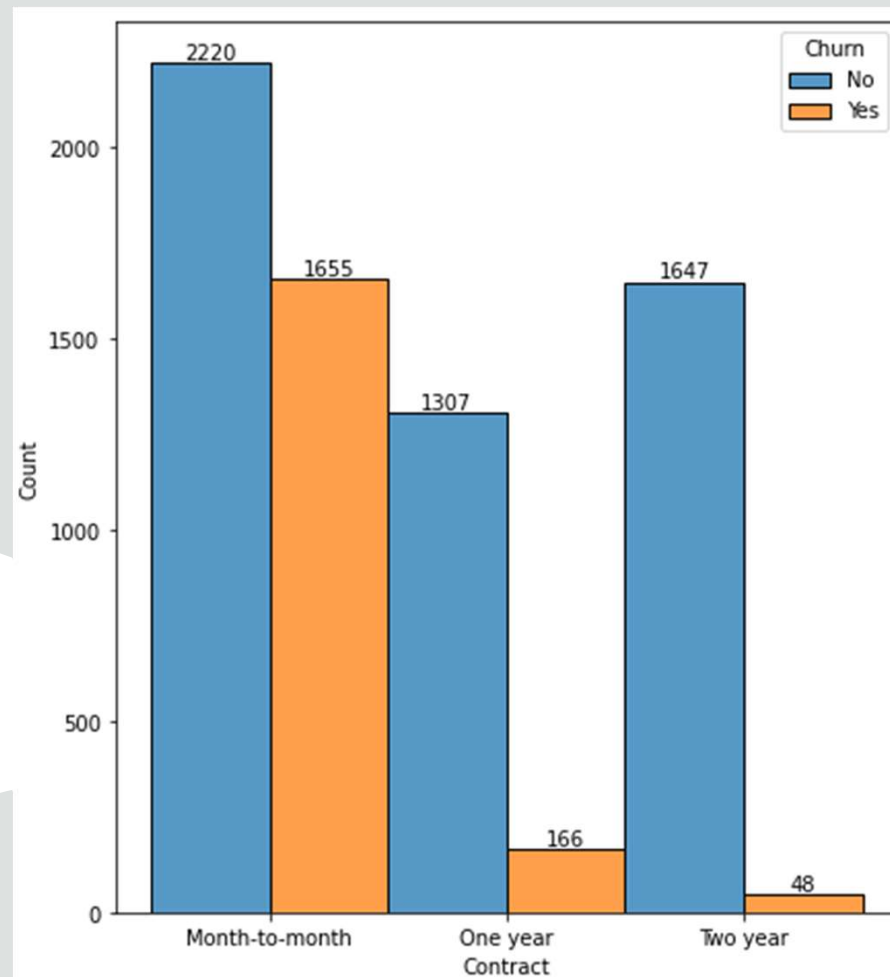
Internet Service

- Customers with Fiber Service as Internet Service have a higher churn count.



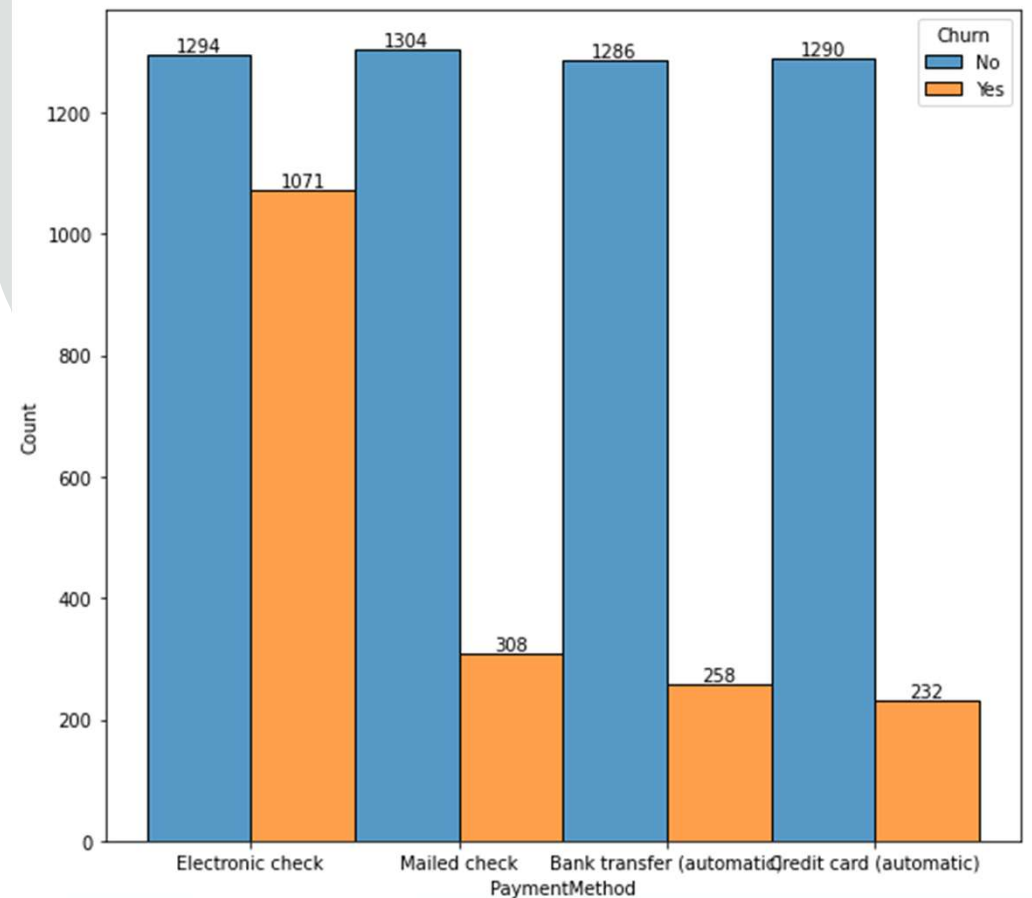
Contract

- Customers with Month-Month Contract have a **higher** Churn Rate.
- Customers with 1-Year & 2-Year contract have a **lower** Churn Rate.



Payment Method

- Customers with Electronic Check have higher Churn rate.

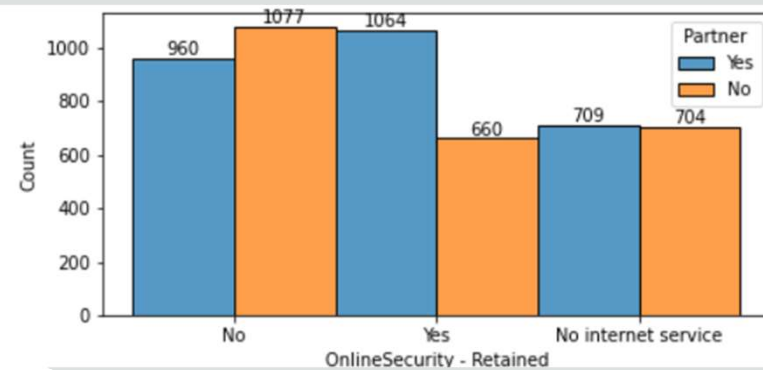
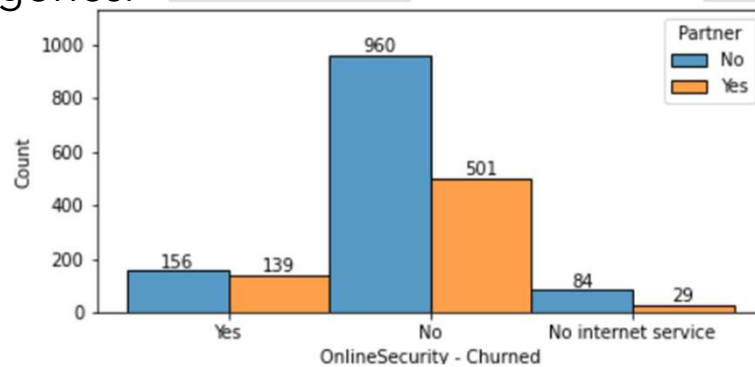


Bivariate Analysis

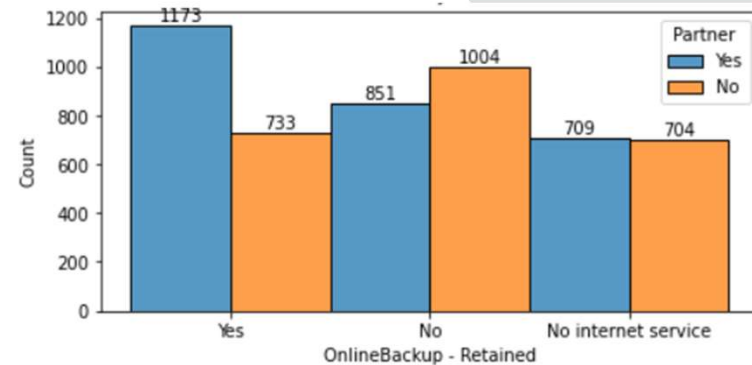
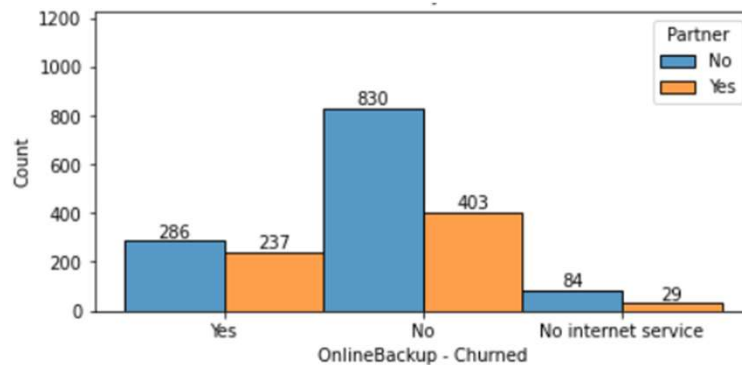


Partner

- 1) Customers without online security and no partners had higher churn count compared to other categories.

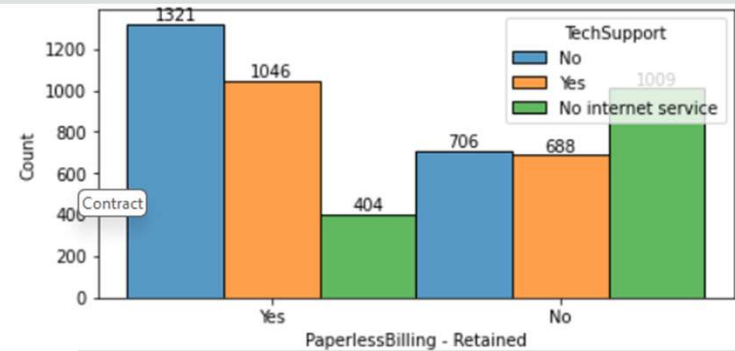
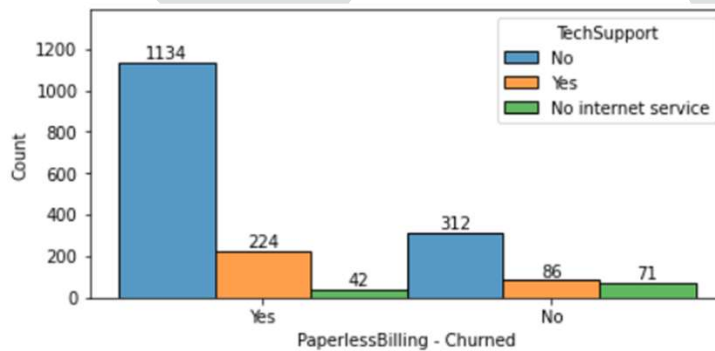


- 2) Similarly, customers without online backup and no partners had higher churn count compared to other categories.

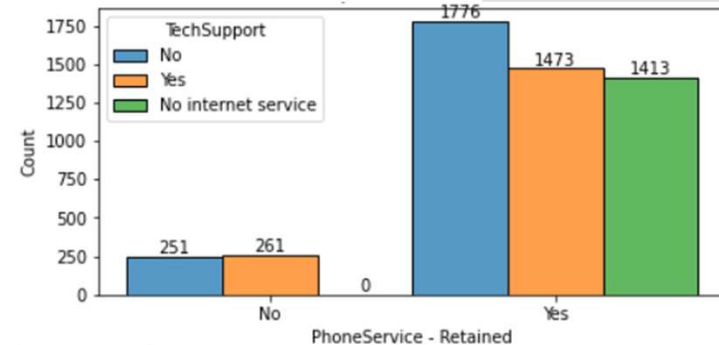
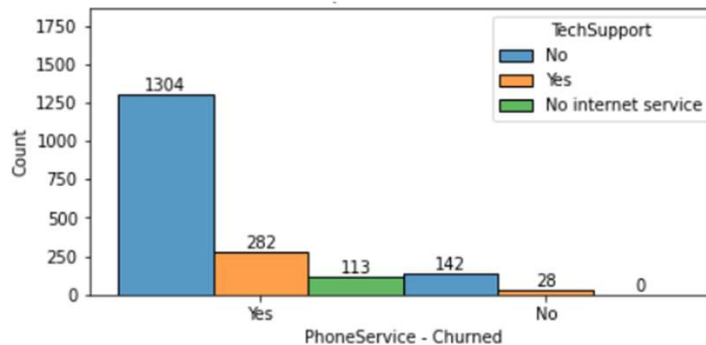


Tech Support

- 1) Customers without Tech Support and paperless billing had nearly 50% chance of churn compared to other categories.



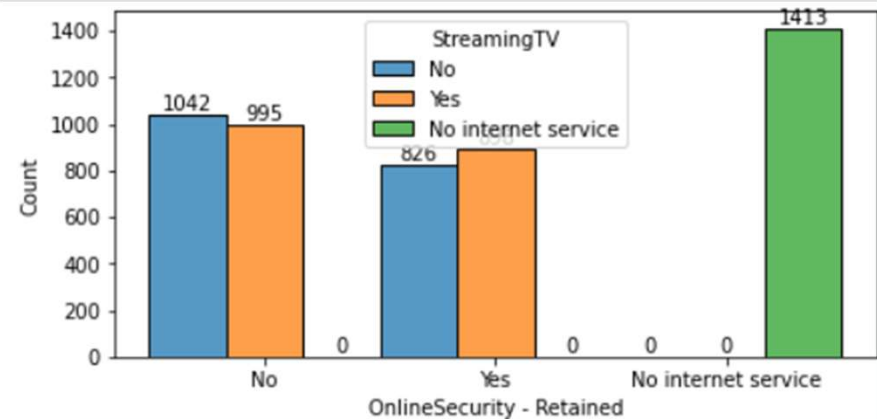
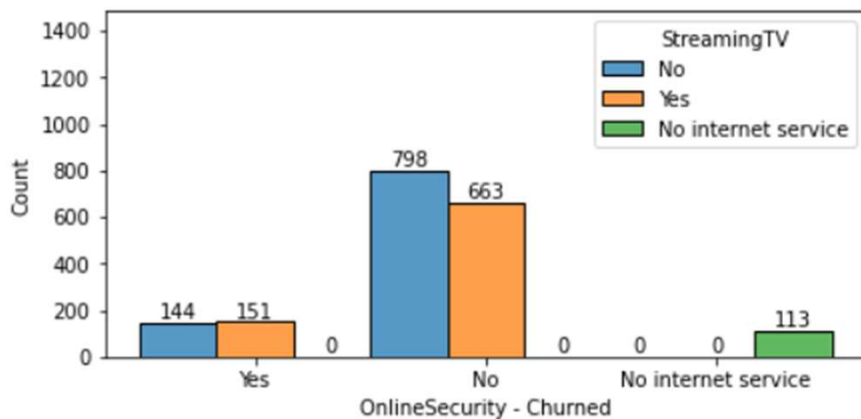
- 2) Similarly, customers with phone service and without tech support had high chance of churning.



Streaming TV

Customers had higher retention numbers in following categories:

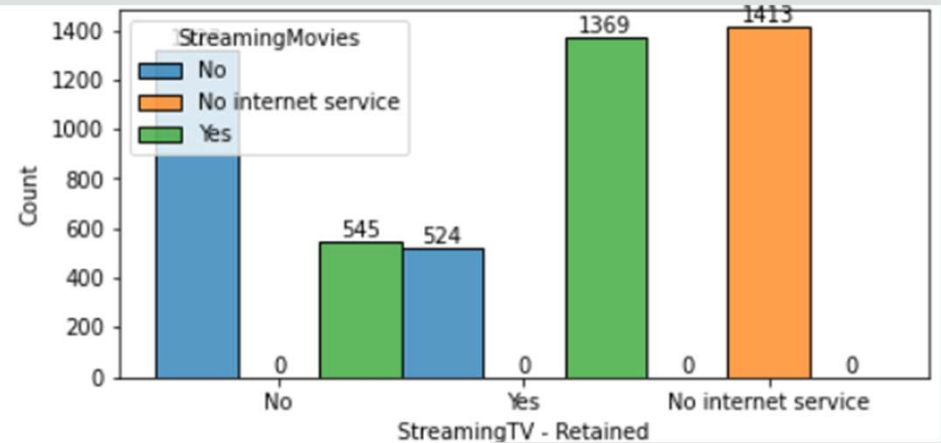
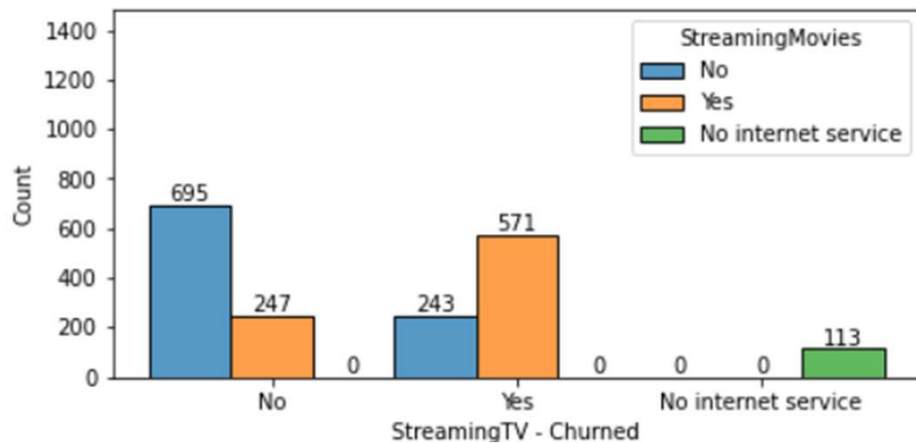
- 1) Without Online Security compared to customers with online security.
- 2)



Streaming Movies

Customers had much higher retention numbers in following categories:

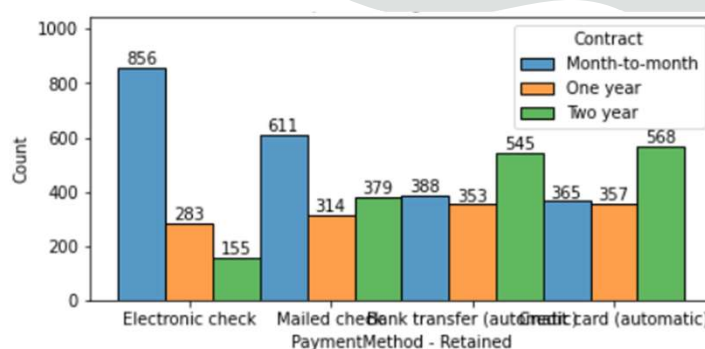
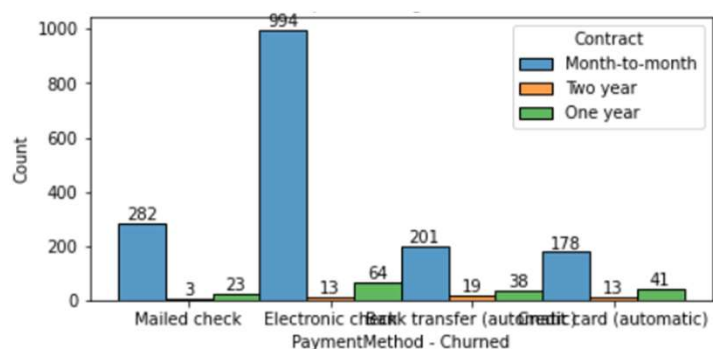
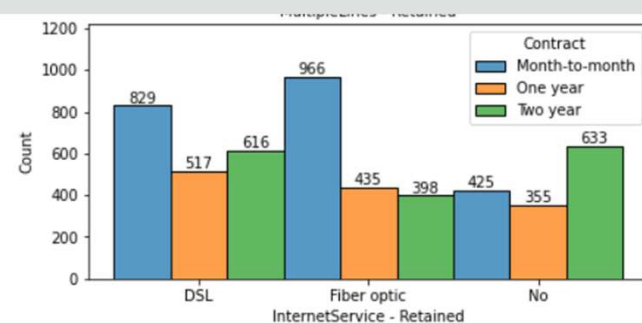
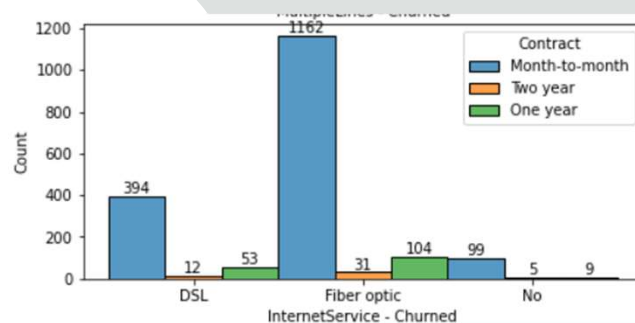
- 1) Streaming Movie (NoInternet) & Streaming TV (NoInternet)
- 2) Streaming Movie (Yes) & Streaming TV (Yes)



Contract

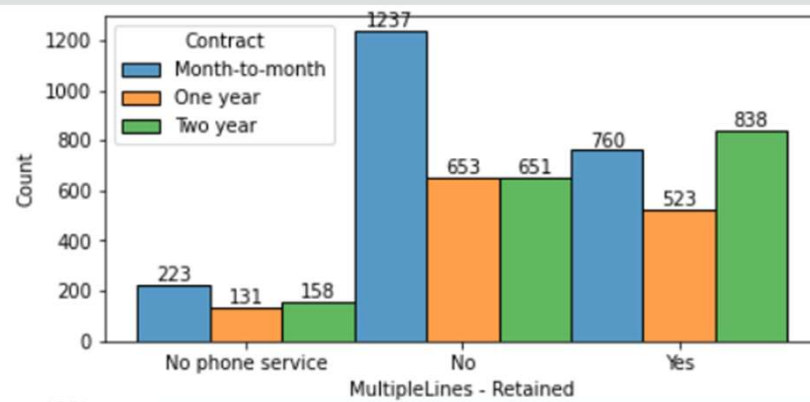
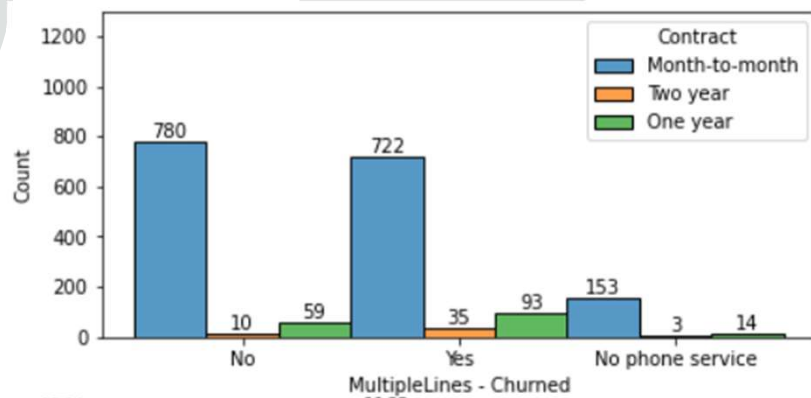
Customers having a Month-Month Contract have higher Churn Rate specially in following categories:

- 1) Payment - Electronic Check
- 2) Internet Service - Fiber Optic



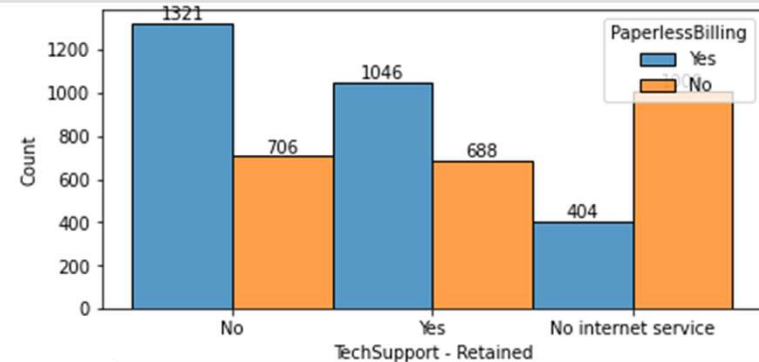
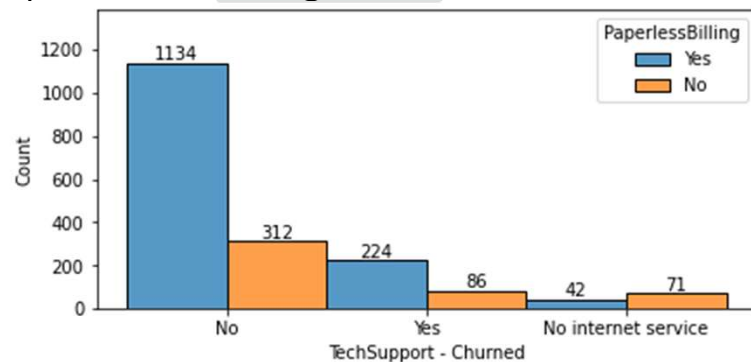
Contract

- Customer without multiple lines had a better retention.

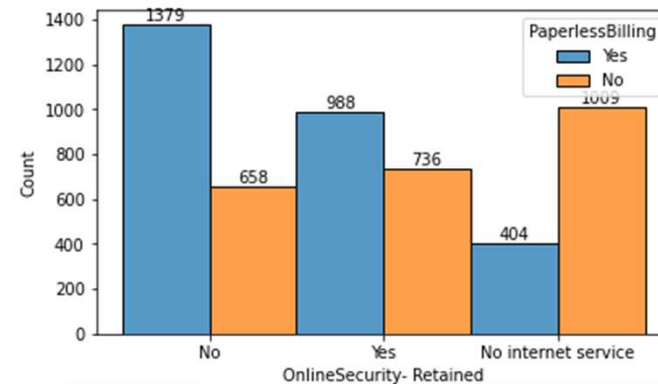
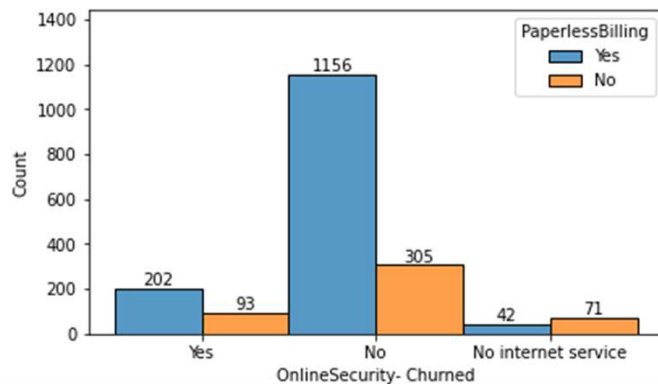


Paperless Billing

- Customers without TechSupport and with paperless billing have a significantly higher proportion among Churned Customers.



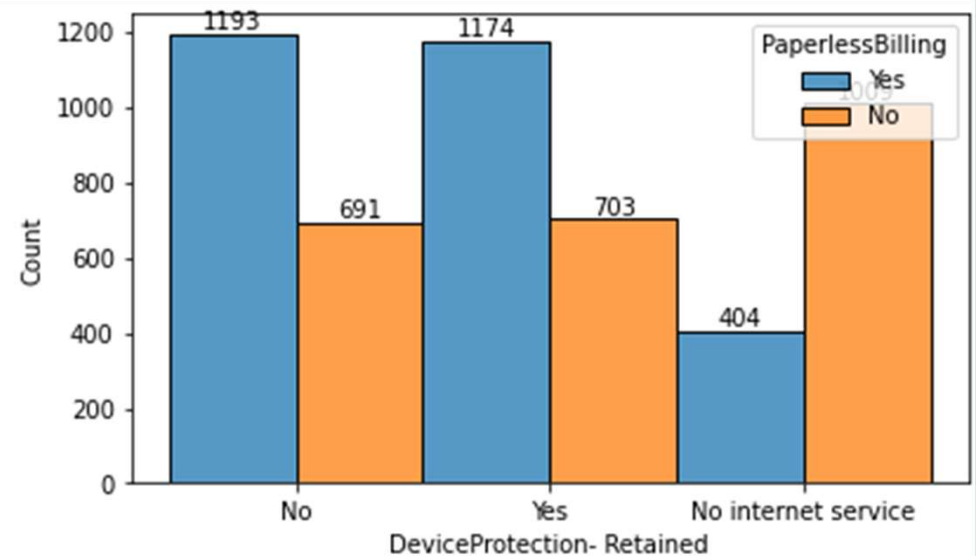
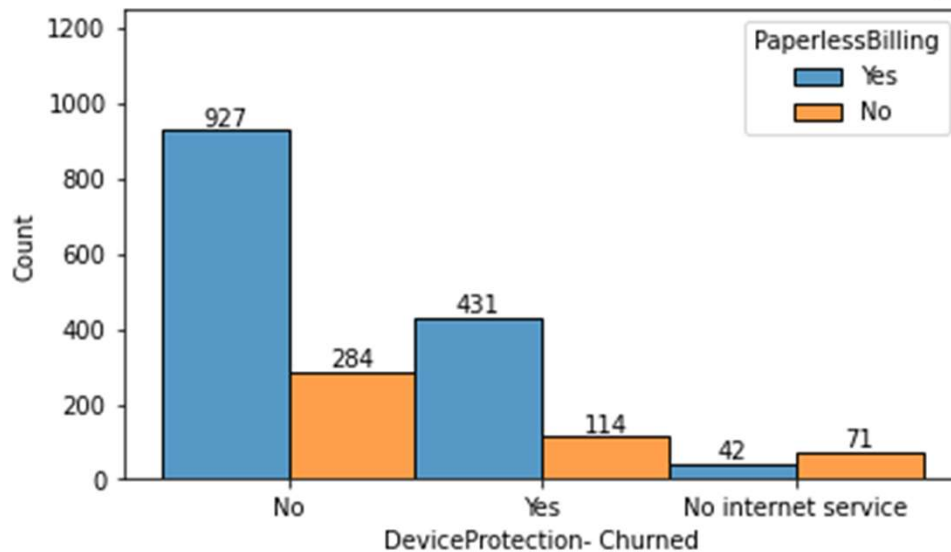
- Customers without Online Security and with paperless billing have a significantly higher proportion among Churned Customers.



Paperless Billing

For with & without Device Protection

- Churned customers - Percentage of Customers with Paperless Billing is approx. 76% -79%
- Retained customers - Percentage of Customers with Paperless Billing is approx. 62% - 63%



Payment Method

Customers paying by electronic check have a higher Churn Rate specially with following features:

- 1) Without Online Security
- 2) Month-Month Contract
- 3) Without Device Protection

