

## 1 Introduction

Nowadays, telecommunication companies struggle to determine their customers' motivation. That is why analyzing customer data is crucial to ensure lasting quality service for the company and to enable adaptability. The data set provides information on 7043 clients with several features ranging from charges to the options they have subscribed to on their contract. Here, we will be interested to analyze, through an exploratory data analysis of the different variables, the lifetime value of loyal customers.

## 2 Data set description

In our data set, 21 features describe each client. Over the 7043 clients present, we decided to focus on those who are loyal, i.e. 5163 customers after purging the 11 clients with missing data and the others who churn.

Among these loyal clients, only 13% are senior citizens, 53% have a partner, 34% are dependents, 90% have phone service, 73% have either Fiber Optic or DSL contracts, 33% have Online Security, 37% have Online Backup, 36% have Device Protection, 34% have Tech Support, 36% have streaming TV, 27% Streaming Movies, 54% have Paperless Billing and 43% of contracts are Month-to-month, 32% for one year and 25% for two years. There are no preferences for the payment method.

## 3 Results description

2 year contracts have higher yearly values for Streaming TV, Phone Service and Internet Service as shown on Figure 1.

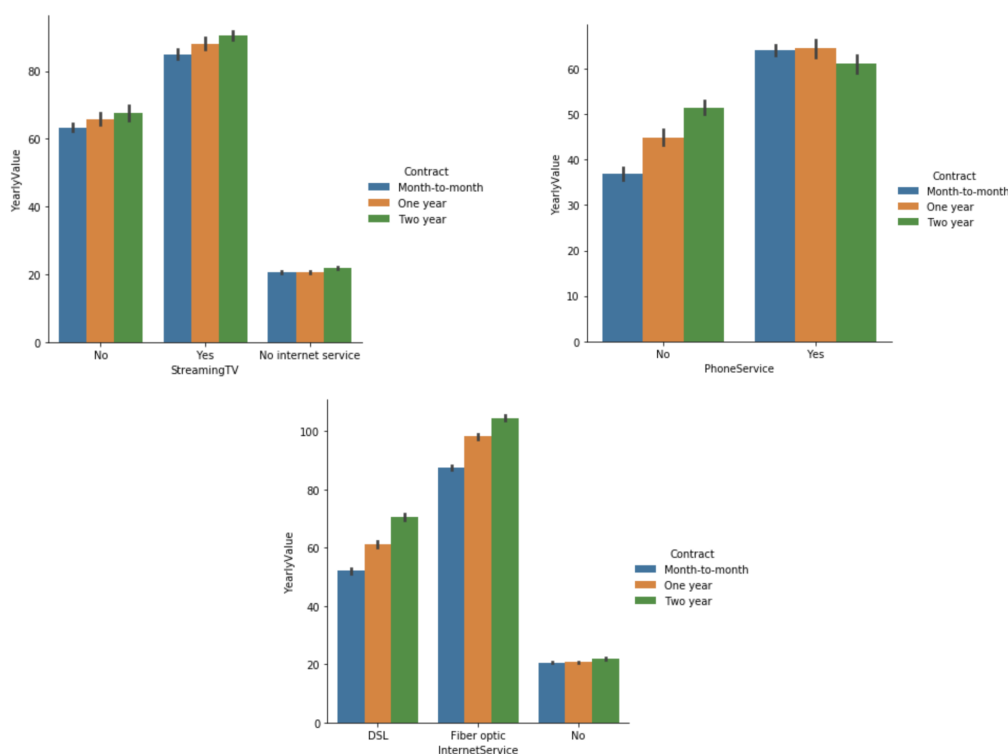


Figure 1: Yearly value in comparison with the contract type and service provided

Customers with a partner tend to have a smaller yearly value and favor month-to-month contracts while customers without a partner have a higher yearly value and follow the same pattern regarding contracts. Dependant customers follow almost the same pattern with a slightly lower yearly value. It is the opposite for

senior citizens : they tend to have a higher yearly value and favor longer-term contracts. These elements are shown on **Figure 2**.

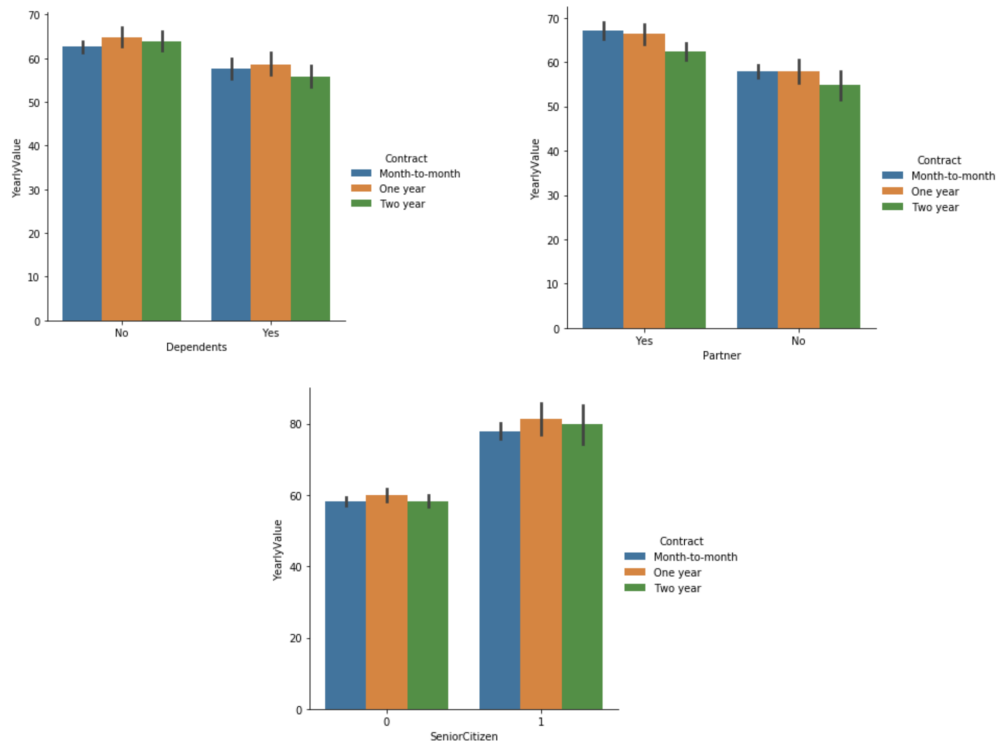


Figure 2: Yearly value as a function of contract and service type

Senior citizens and customers with a partner tend to have a longer tenure and yearly value than dependent customers whilst customers with a short-term contract tend to have a lower tenure, as illustrated by **Figures 2 and 3**. Clients will stay longer for lower monthly charges however.

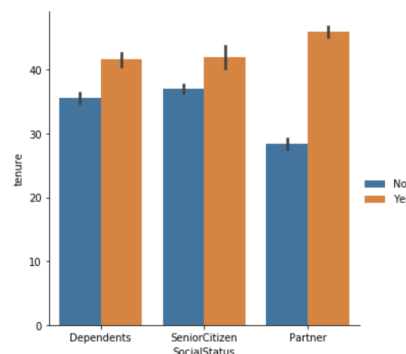


Figure 3: Tenure and social status comparison

## 4 Analysis

The marketing department should focus their efforts on keeping senior citizens and trying to get non-senior citizens to sign on for longer offers. This way, they would retain their most profitable customers and increase the value of their other customers.

The marketing department should focus on the retention of senior citizens and customers with a partner rather than on dependent customers to optimize their efforts.

The marketing department should focus on offering 2-year, low monthly charges contracts as these are the most profitable on the long-term.

## 5 Conclusion

This work allowed us to segment the customers of telecommunication market relatively to a single company according to several characteristics. Our analysis brought us to focus on retention of senior citizens and customer with a partner. This strategy would be more advantageous for the company as retaining these customers seems to be the optimal choice.