1000ml Insurance:
A Data Analysis

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Contents and Outline

Objective

We will examine the 1000ml Insurance customer data from the perspective of the segmentation techniques that were found to be most varied and informative.

Data Overview

- 9134 unique customers

- Segmentation is done best with personal information (i.e. employment, income, marital status etc)

- This segmentation revealed revealed many similarities (eg. vehicle, policy, location)
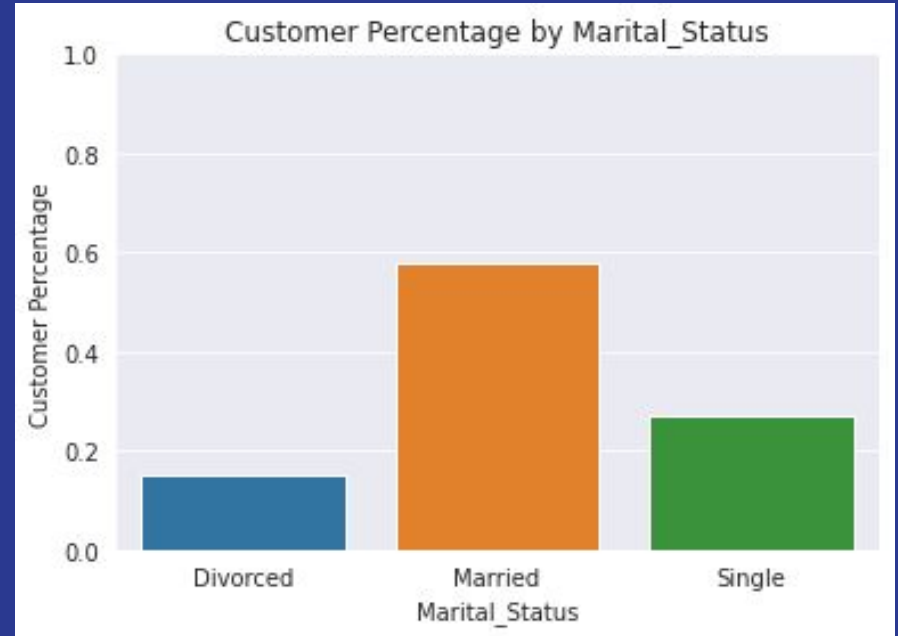
Employment gives best segmentation

- Segmentation based on Employment shows largest variance in average...
  - Claim amounts ($360 - $600)
  - Response to Renewal Offers (9%-72%)
  - Location Code
  - Sales Channel effectiveness
- Clearly outlines lack of variance in many other variables

Customer Percentage by EmploymentStatus
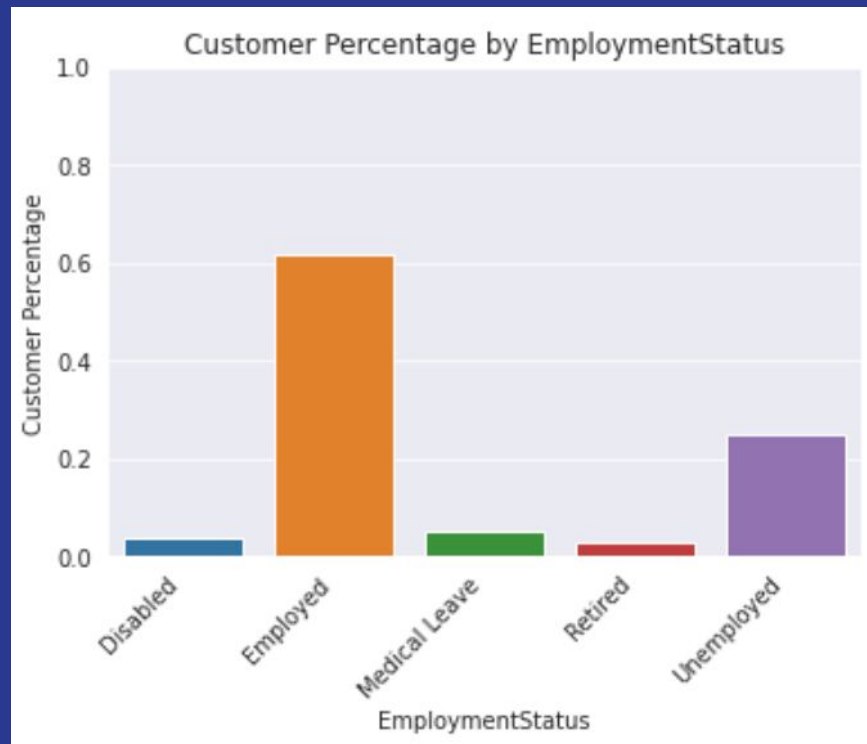
Marital Status: next best segmentation

- Segmentation based on Marital Status also interesting…
  - Specifically Marital status while employed
  - Married Men complain more
  - Marital status alters some of the previous trends
- We will look specifically at Employed people with differing Marital Status

Customer Percentage by Marital_Status

Overall Best Segmentation Rules

Based on 74% Segmentation score

(Ordered by Average CLV)

1. Working Divorcees
2. Working Women (Married)
3. Working Men (Married)
4. Working and Available
5. Disabled
6. Medically Unemployed
7. Available for Hire
8. Old but Reliable

6

Caveat

Don't forget for the following slides

The facts on the following slides are averages and not to be assumed as fact for all individuals in each segment

100ml
Mastering Practical AI

Working Divorcees

- Highest CLV

- Make the 2nd lowest claims

- Have the smallest vehicles

- Complain the most

- The most educated

Working Women

(Married)

- Have the highest income

- Largest number of policies

- Most opposed to renewal offers of the employed

- Lowest claim amounts

Working Men

(Married)

- Complain almost as much as divorcees
- Low claim amounts
- Least often found in Nevada

Working

(Available 😉)

- Second highest income

- Highest Monthly Premiums

- Been with the company for the least amount of time

  - Have the 2nd least number of policies

- Have the best coverage

Disabled

(The best of the unemployed)

- Have the highest quality cars
  - Second highest monthly premium
- Most likely to accept calls from Call Centers
- Second most educated
- Complain the least

Medically, Unemployed

(Temporarily)

- Least glamourous vehicles

- Most likely to purchase from the web

- Complain the second least

- Pay the lowest monthly premium

Available for Hire

(Completely Broke)

- Second most number of policies

- Make the largest claims

- Least receptive to renewal offers

- Least educated

Old

(But Reliable)

- Have the least amount of policies

- The largest vehicles (by far)

- Second highest class of vehicles

- Quite often accept renewal offers (far more than any other group)

- Lowest coverage

A New Ranking

Based on Loyalty, Satisfaction and claims

1. Old, but reliable

2. Working/Married Women

3. Disabled

4. Working Divorcees

5. Working and Single

6. Working/Married Men

7. Medically Unemployed

8. Available for Hire

15

Recommendations

- Offer better plans to retired, they are most likely to accept

- Consider more enticing (targeted) renewal offers for Married Women/Men

- Consider targeted advertising with different media to different groups
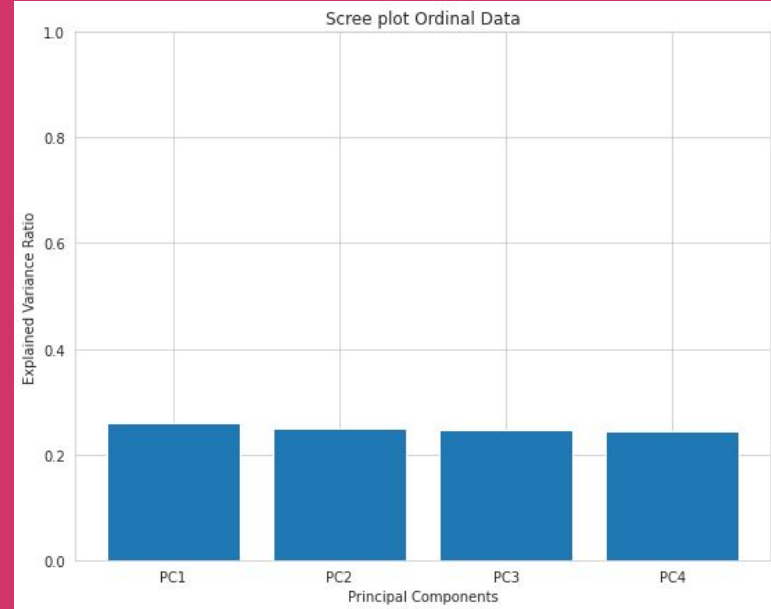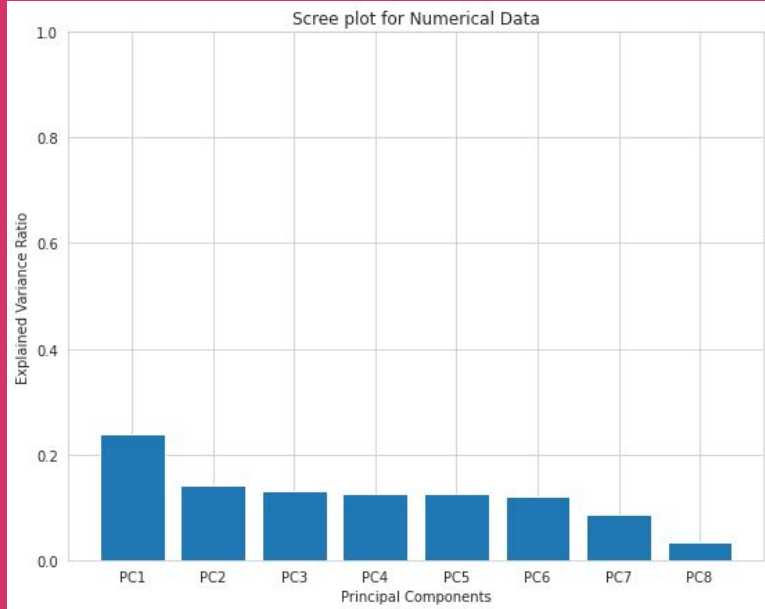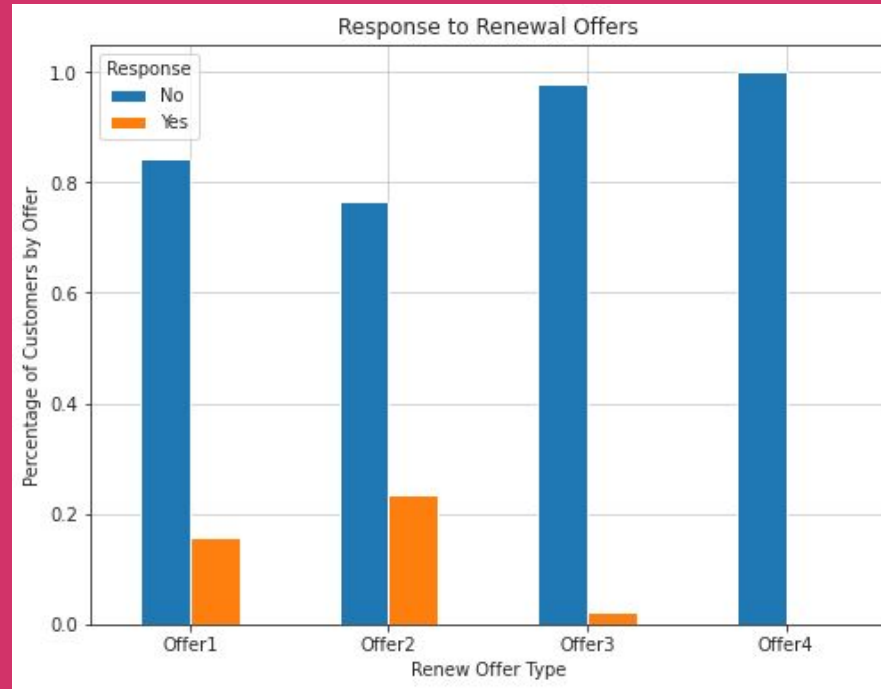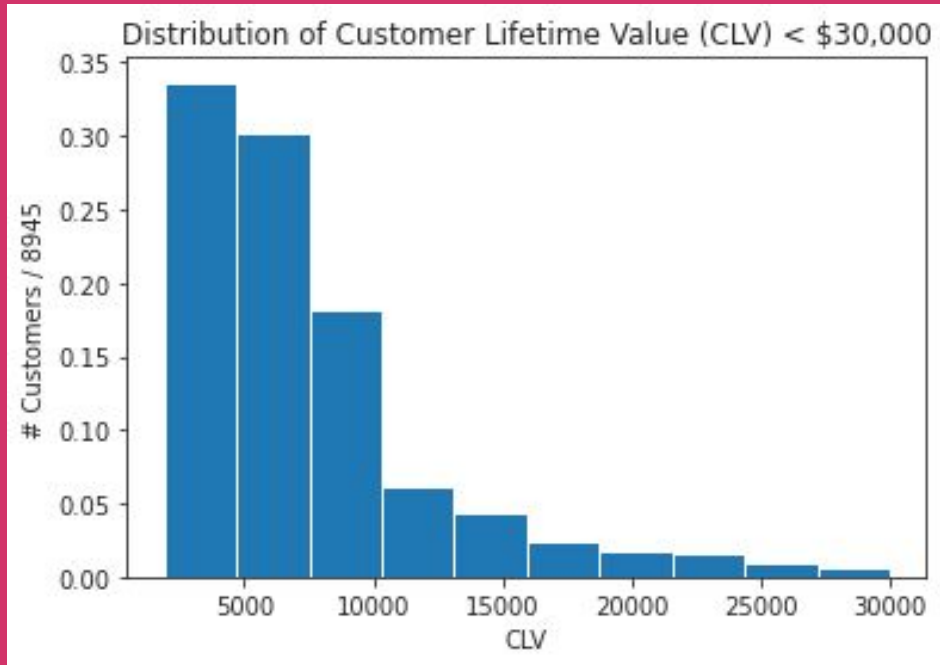
Thank you

Appendices

Appendix A: Extras

Numerical and Ordinal Data does not vary enough to segment on

Scree plot for Numerical Data

Scree plot Ordinal Data

A1

Response to Renewal Offer Acceptance Rates

A2
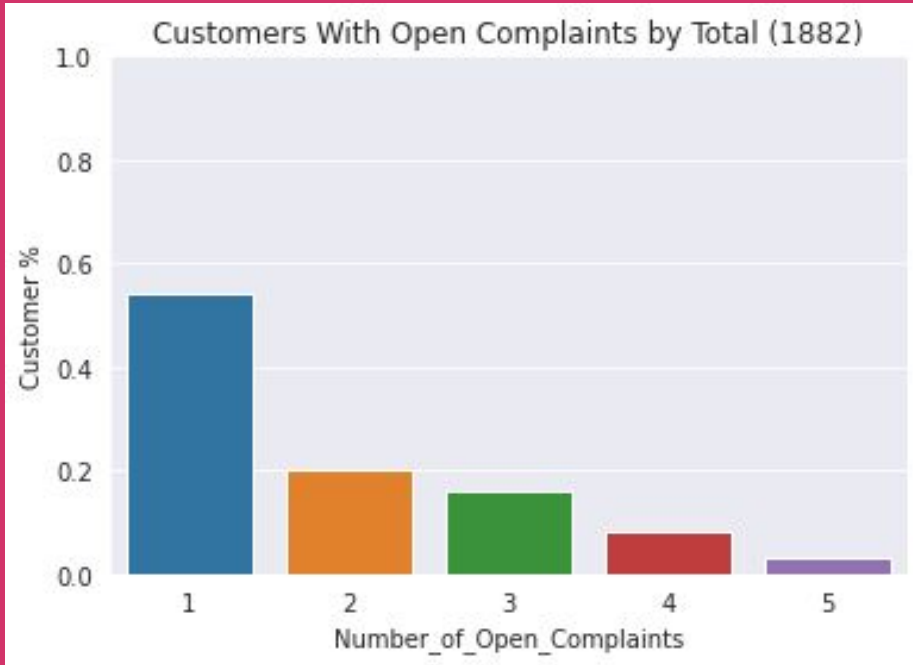
Customer Lifetime Value

Distribution of Customer Lifetime Value (CLV) < $30,000

- 75% of Customers have less than $10,000 CLV

- 2% of customers not shown here - have greater than $30,000 CLV

A3

Number of Open Complaints

Customers With Open Complaints by Total (1882)

- 21% of customers have open complaints
  - This is the distribution of number
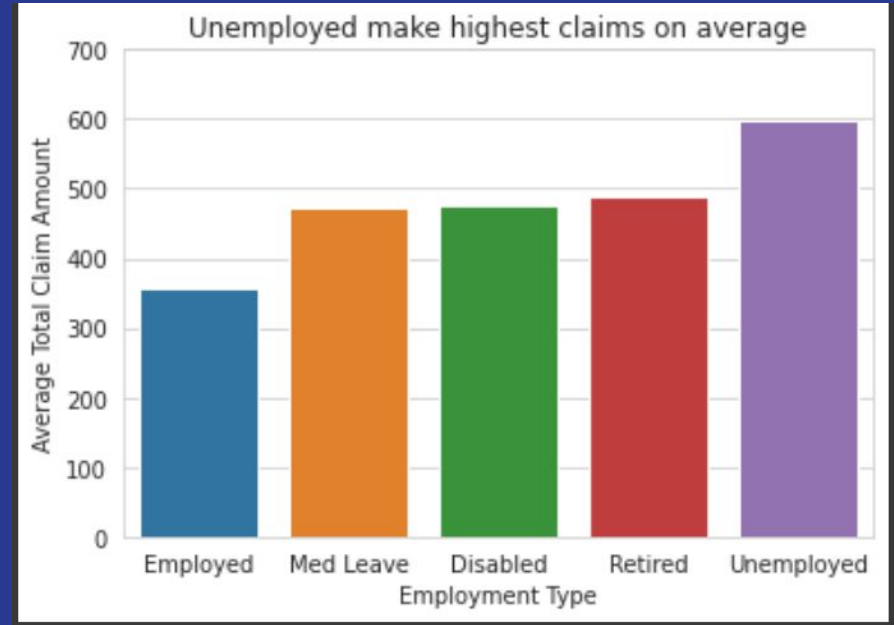
A4

Appendix B

Further Information
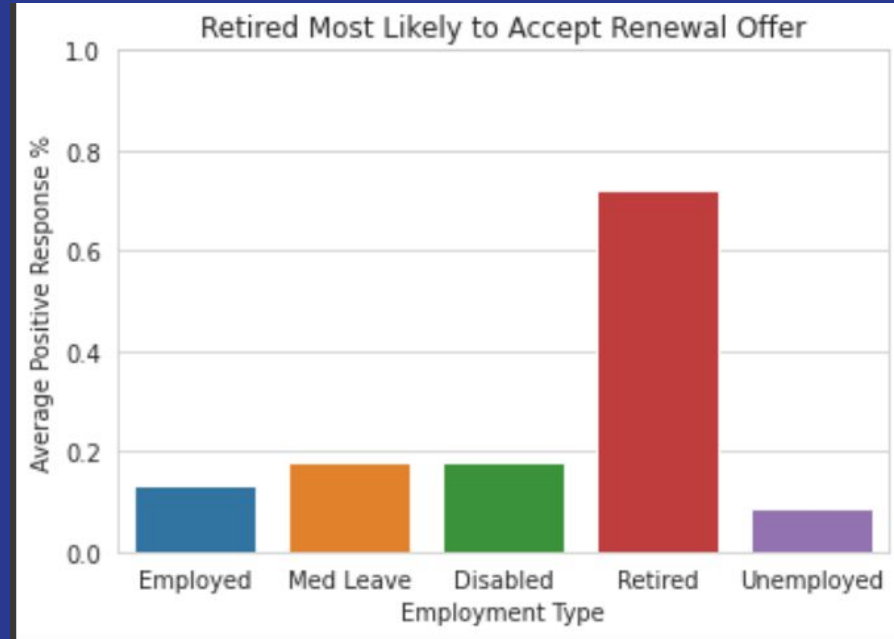
Employment Segmentation

Insights

- Unemployed make much higher claims than the employed on average
  - However, there is very little difference in the average type of vehicle owned by either

Unemployed make highest claims on average

B1

Employment Segmentation

Insights

- Retired people are 3-6x more likely to accept a renewal offer than other segments
  - They are most often offered Renewal Offer 1 (60%), least offered Renewal Offer 4 (4%)

Retired Most Likely to Accept Renewal Offer

B2

Employment Segmentation

Insights

- We can see roughly the same distribution in effectiveness of Sales Channel, except for retired people
  - Agent still works best, and by a larger margin, while center is least effective by far

Agent works best, most so for Retired people
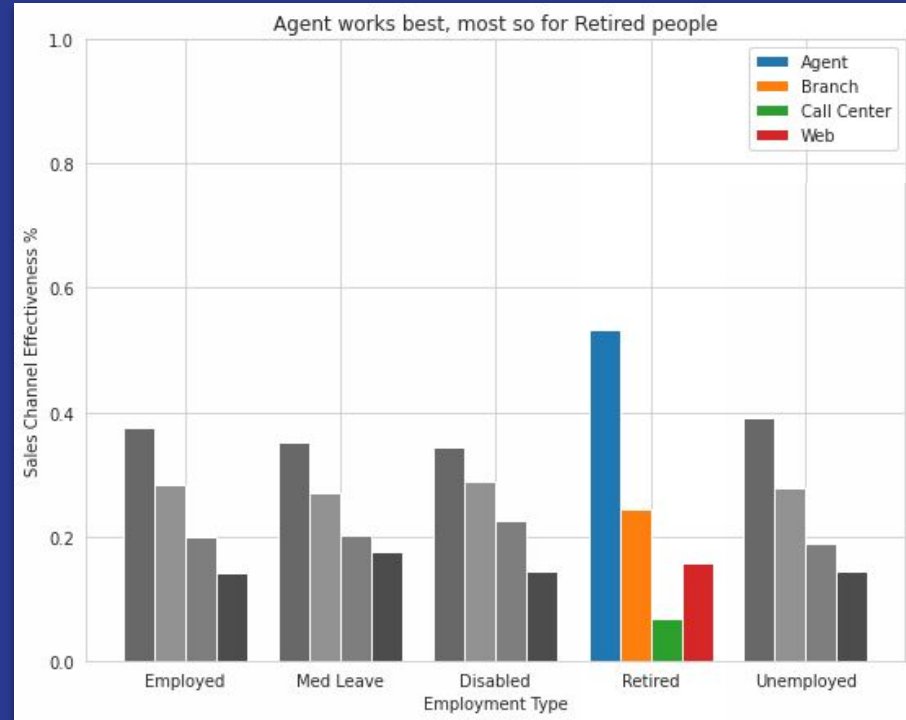
Employment Segmentation

Insights

- We can see that while suburban living is always the most popular, mostly employed people live in the city and the country
    - Retired customers are never found in Rural areas

Suburban most popular,
Employed people most often live in Rural and Urban areas
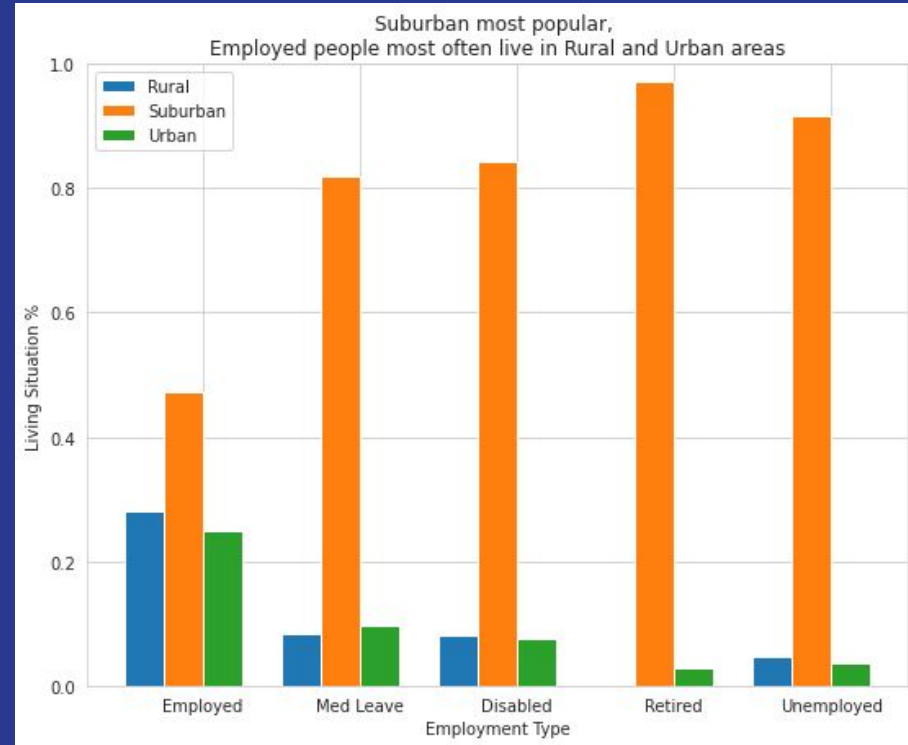
Employment Segmentation
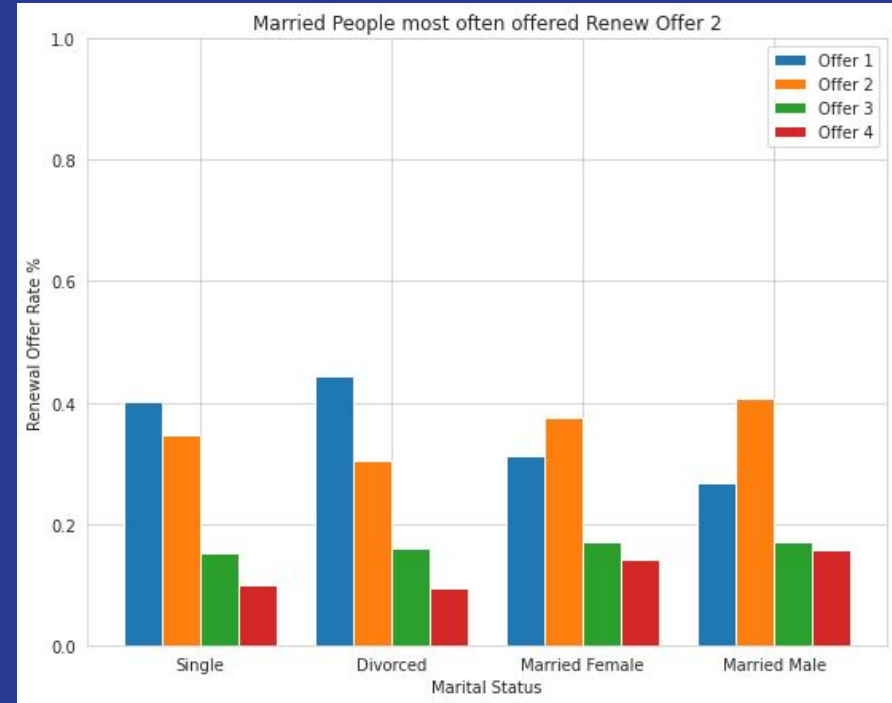
Insights:

Honorable Mentions

- The highest CLV average was within the Employed Segment

- The highest average in open complaints was a tie between the Employed and Unemployed

- Lower income people tend to be offered Renew Offer 1

- Higher income individuals tend to be offered Renew Offer 2 & 4
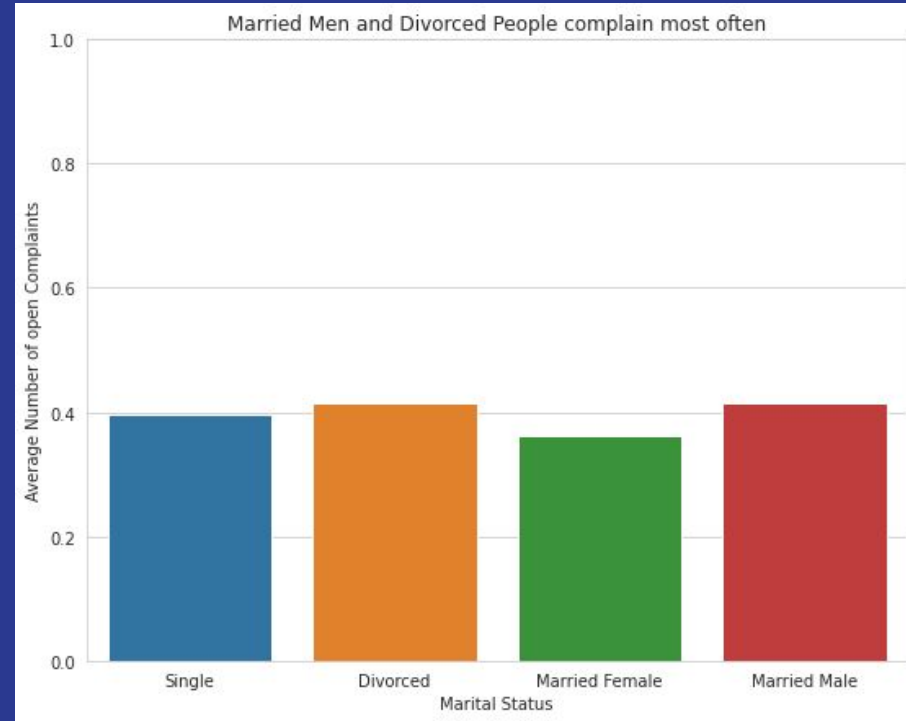
Marital Status Segmentation

Insights

- This trend in Renewal Offers is the same for employment segmentation, only altered for married customers

B6

Marital Status Segmentation

Insights

- Married men complain about 5% more than married women

Married Men and Divorced People complain most often

B7

Marital Status Segmentation

Insights:

Honorable Mentions

- Divorced and single people more often respond yes to a Renewal Offer

- Single people have the worst cars on average

- Single people often more educated

Segmentation Score

A definition

- Defined in code as the "silhouette score"
- Defined in English as the uniqueness of a grouping
  - i.e. How separated the customer data is when grouped into each defined segment.
  - Roughly: 74% of the data in each group, obviously belongs to that group.

B9