Insurance Scoring

Based on consumerfinance.gov, insurance is **a way to manage your risk.**
When you buy insurance, you purchase protection against unexpected financial losses.
The insurance company pays you or someone you choose if something bad happens to you.

BUT, how much you should pay to get that protection?

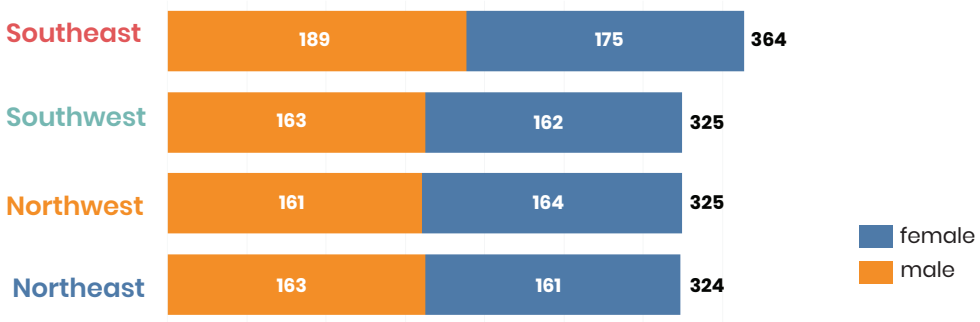
and, **WHY?**

With the data from 4 regions we have, we will try to elaborate the insurance scoring.

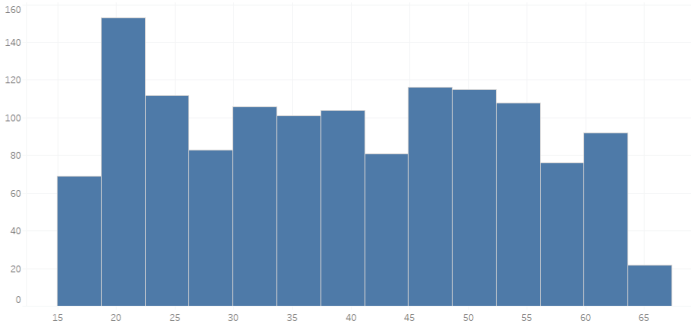
Total of insurance clients is **1,338 persons.**

Total of male clients is **676 persons.**

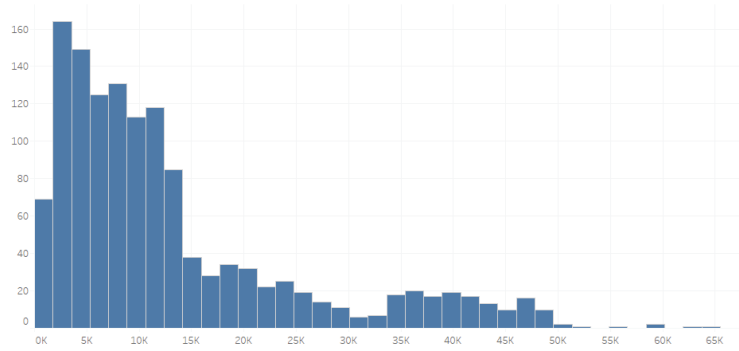
Total of female clients is **662 persons.**



Total of Insurance Clients by Region



Distribution of Clients' Age



Distribution of Clients' Insurance Charges

Age and Charges of Clients

While the age has variative values from 15-65 years old. There are more values on the left side of charge of insurance, which means **price of the insurance is considered cheap for all range of age.**

5 from 10 male clients are smokers

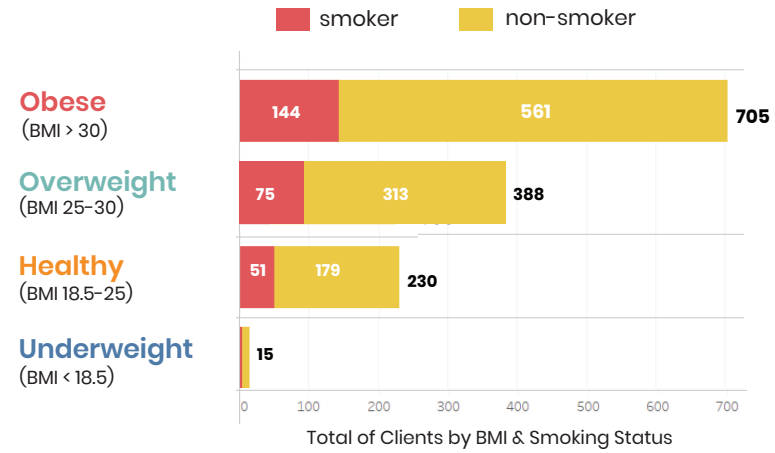
4 from 10 female clients are smokers

Smoking Status

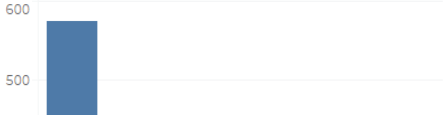
BMI

The BMI range score is based on cdc.gov, divided into 4 categories: obese, overweight, healthy weight, and underweight.

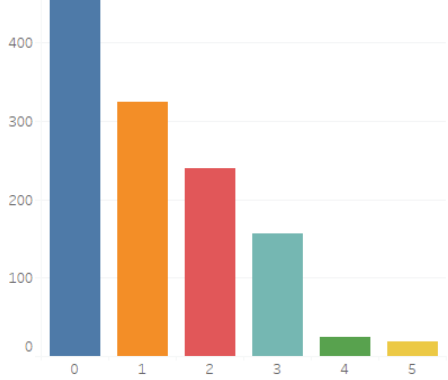
(https://www.cdc.gov/obesity/basics/adult-defining.html)



Total of Clients by BMI & Smoking Status



Children



Total of Clients by Children

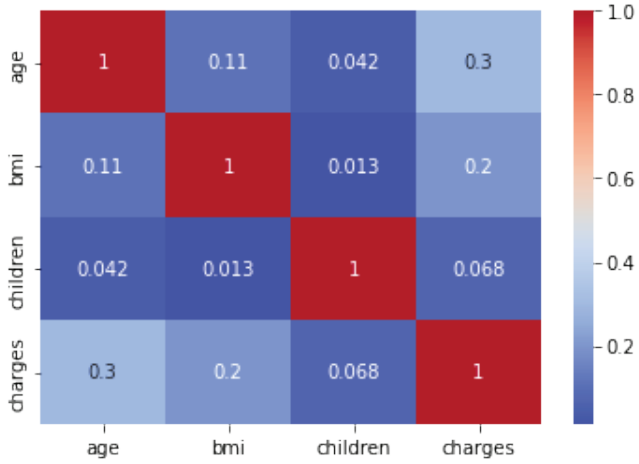
There are more clients with no children, and the number **decrease** as the number of children **increase.**

What features correlated the most with charges?

As per diagram,
number of children is the most correlated with the charge of insurance.

It means when **the total of children increases, so does the charges.**

But, there is *lack of categorical data,* such as: gender and smoking status, from the dataset that we will look into.



- **Do smokers get higher charges than non-smokers?**

  **(Test using t-test and alpha = 0.05)*

  H0: Smokers get lower charges than non-smokers.
  H1: Smokers get higher charges than non-smokers.

  With p-value = 8.271435842179102e-283.
  We accept H1 that **smokers do get higher charges than non-smokers.**

- **Do male clients get higher charges than female clients?**

  **(Test using t-test and alpha = 0.05)*

  H0: Male clients get lower charges than female clients.
  H1: Male clients get higher charges than female clients.

  With p-value = 0.03613272100592976.
  We accept H1 that **male clients do get higher charges than female clients.**

- **Do older clients get higher charges than younger clients?**

  **(Test using t-test and alpha = 0.05)*

  H0: Older clients get lower charges than younger clients.
  H1: Older clients get higher charges than younger clients.

  First, the data is divided into 2 categories, those are:
  = clients from 18-41 years old;
  = clients > 41 years old.

  With p-value = 4.926339120398916e-25.
  We accept H1 that **older clients do get higher charges than younger clients.**

Conclusion

As you getting **older, a smoker, have children, and have high BMI,** that means ***your insurance will be charged higher than*** people that are still young, not smoking, have no children, and have lower BMI