Car Premium Optimization

Today's agenda

Problem
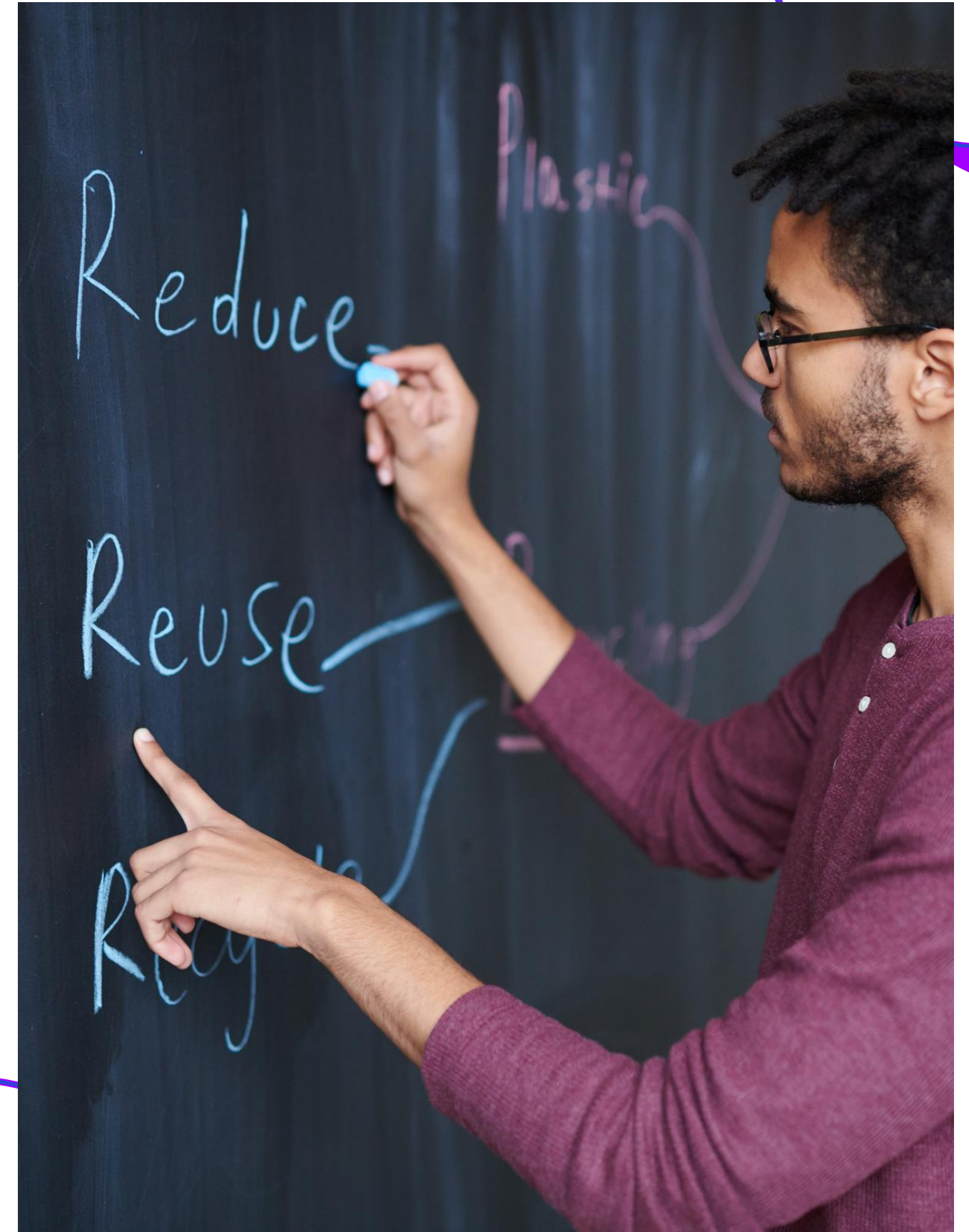The Analytics team
Insights
Summary

Problem

The objective of this advanced Excel data visualization project is to create a comprehensive dashboard that allows a car insurance company to analyse and optimize its premium pricing model based on various customer attributes. These attributes include income levels, marital status, gender, education levels, occupation, daily travel time, primary use of the car, total miles driven, type of car owned, age of the car, city of residence, and geographic region. By visualizing these data points, the company aims to gain insights into the factors influencing insurance risks and customer behavior, thereby enabling the development of a more personalized and fair pricing structure.

The Analytics team

Kanishk Mehta, CEO Ededge groups.

Smruti Mehta, Researcher Ededge groups

Muneeb Hassan, Data Analyst Ededge groups
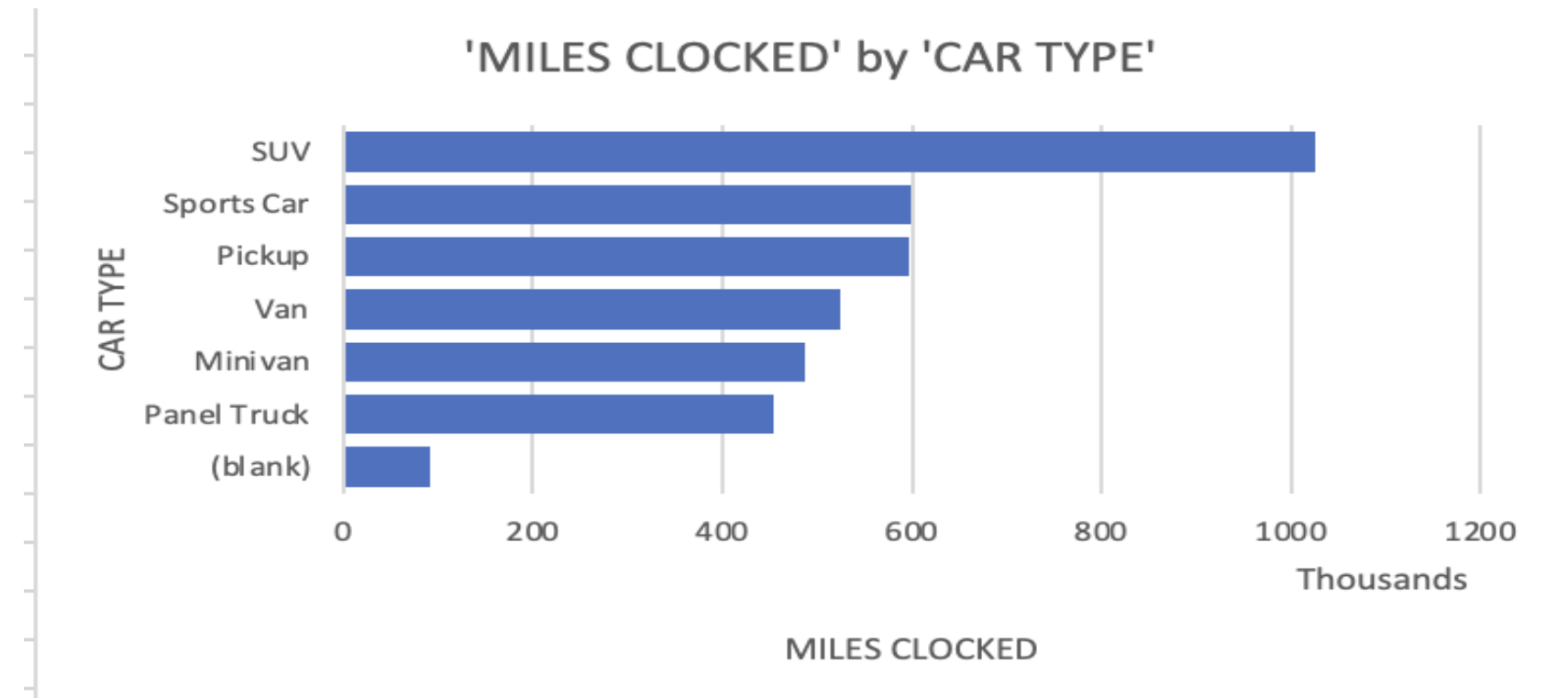
Insights

SUV

Most miles clocked

6.27

Avg car age

Blue Collar

Most common job type

'MILES CLOCKED' by 'CAR TYPE'

- The findings on the left shows that **SUV** car owners clock the most miles, significantly higher than all the other vehicles.
- This means their cars have more exposure and thus more vulnerable to claims
- Therefore, the **SUV** car owners should be offered higher premiums

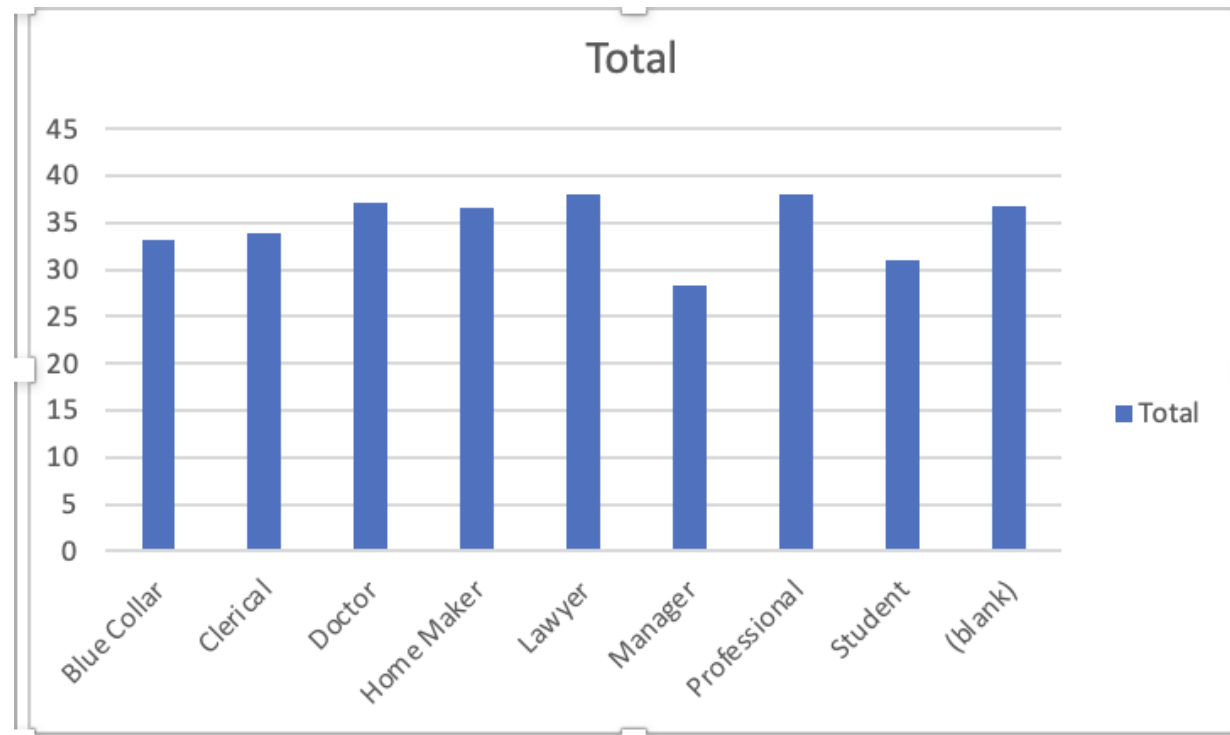# TRAVEL TIME AGAINST MILES CLOCKED

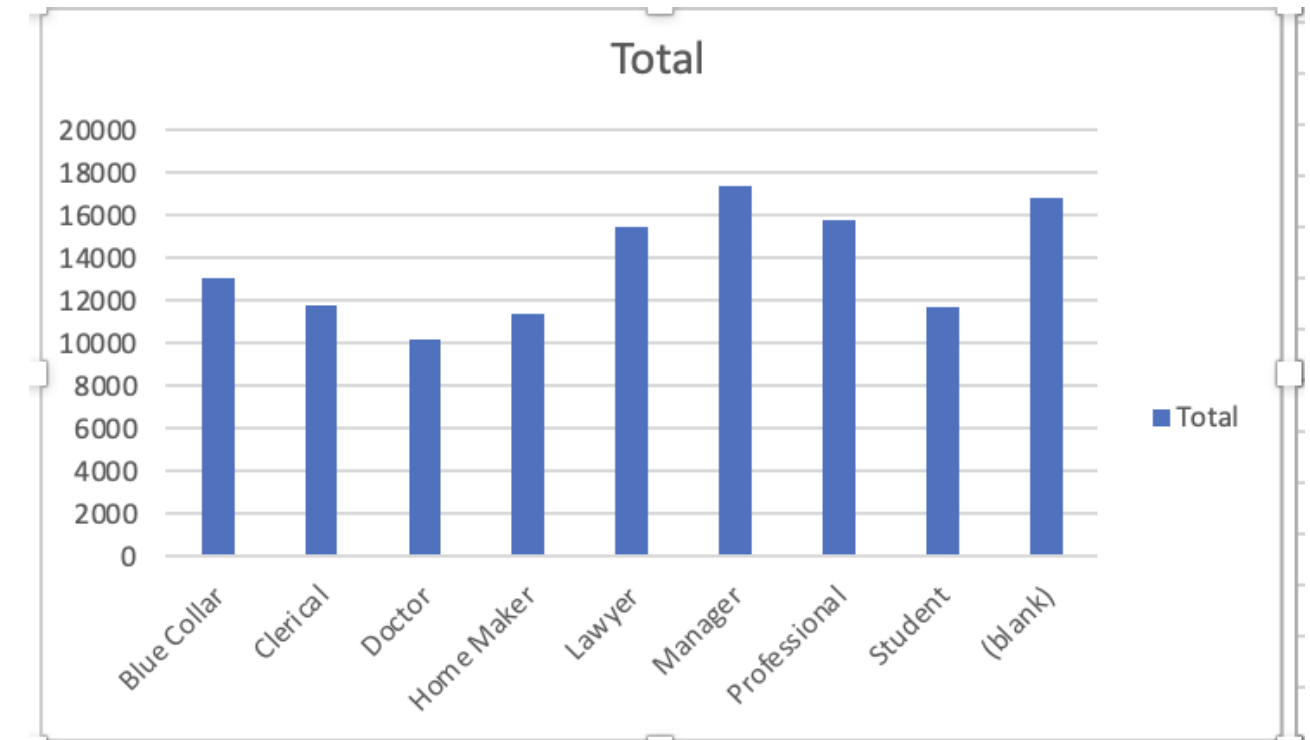Figure 1 : Avg Travel time by Jobs

Figure 2 : Avg Miles clocked by Jobs

- The Managers have the least average total time as compared to other jobs. Managers also have the highest average miles clocked. This means, managers drive on faster roads like highways which results in faster travel time.
- Managers are a lot more vulnerable to accidents since they are driving with faster speeds on dangerous roads and clocking the most miles among all the jobs. Therefore the premium model should be higher if the job title is Manager.
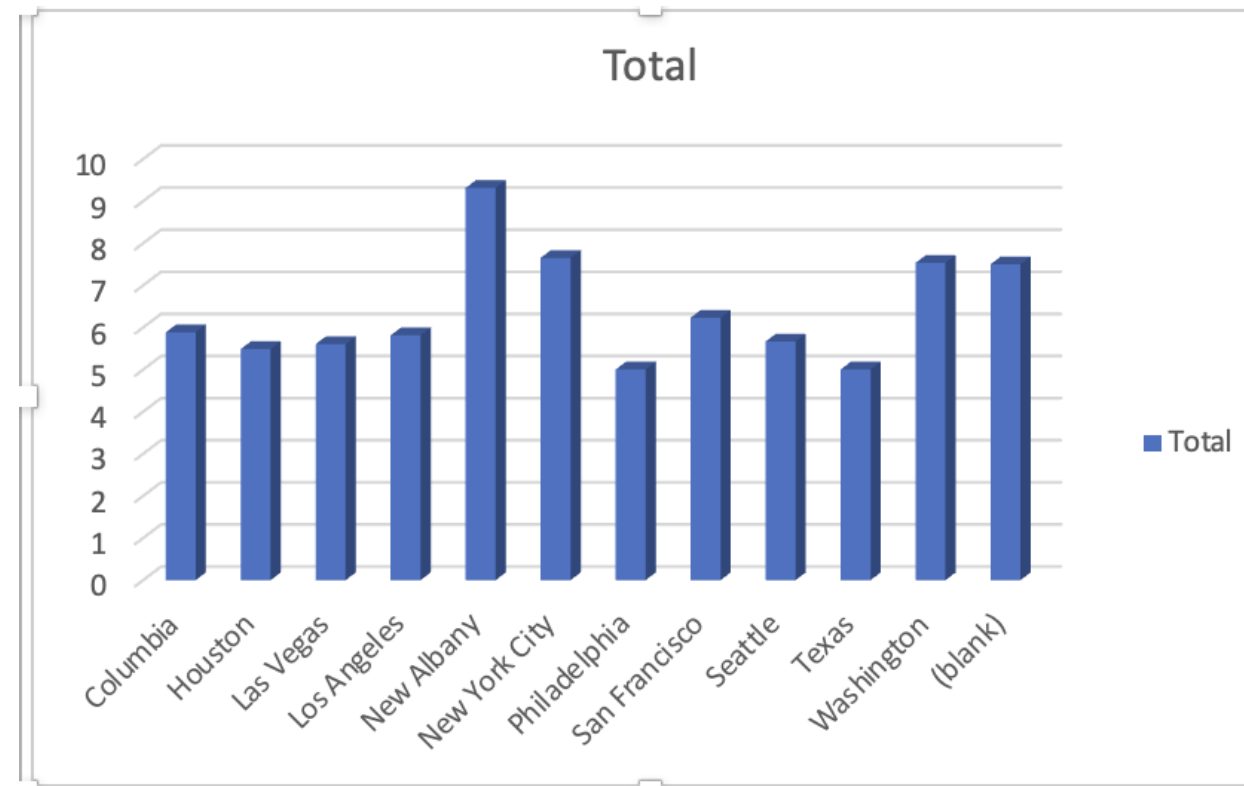
Avg car age by area
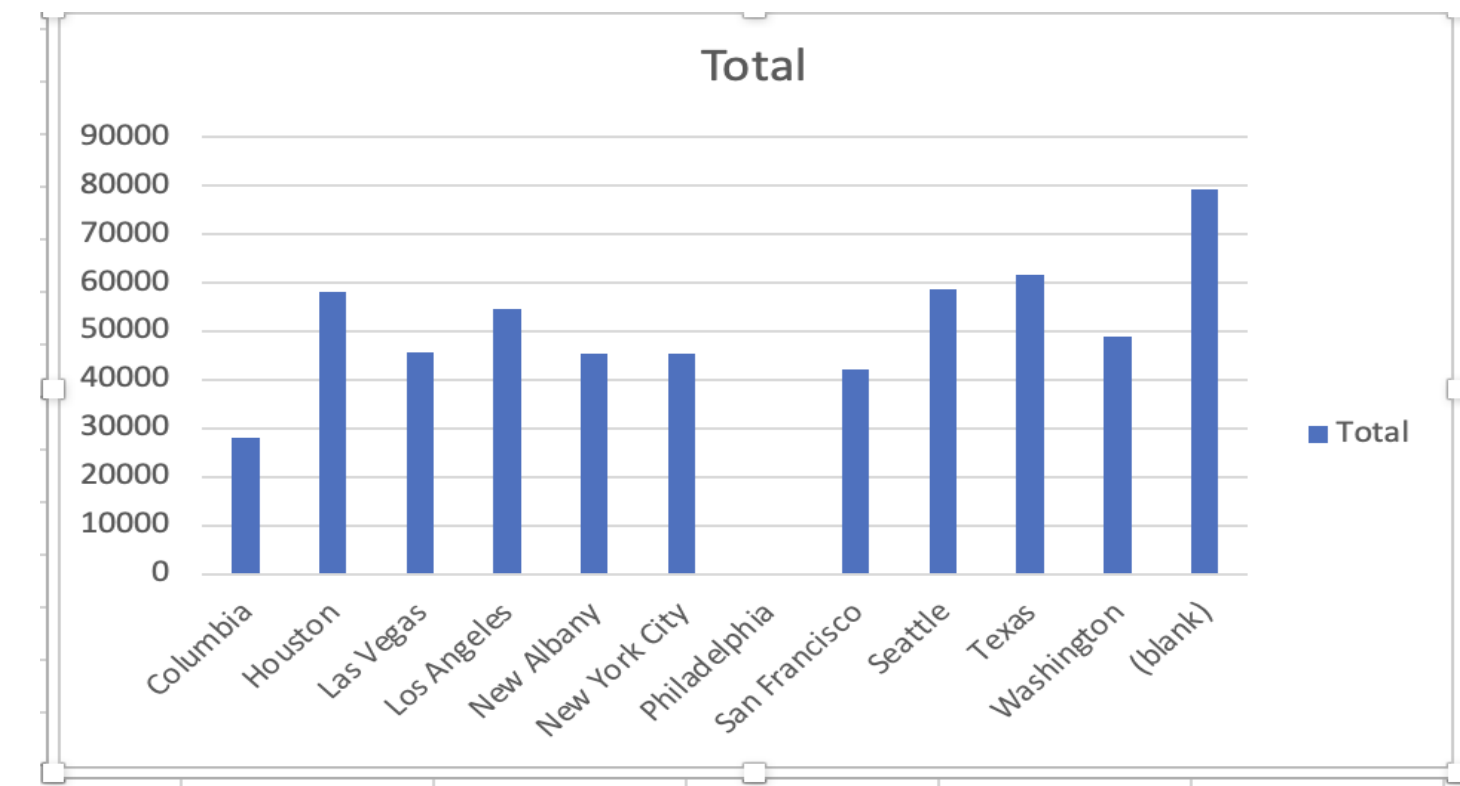

Figure 3 : Avg car age by area

Figure 4 : Ang income by cities.

- New Albany and New York had the oldest cars where the average car age in these cities exceed the average car age among all cities.
- Therefore, the Northeast and Northeastern region consist of cars that are old and higher risk of getting damaged. Residents in these cities will be required to pay a higher premium as compared to cities in other regions.
- Furthermore, the residents in New york and New albany also have a very high average income. Therefore, a higher premium will not going to effect the inflationary issues in the city.
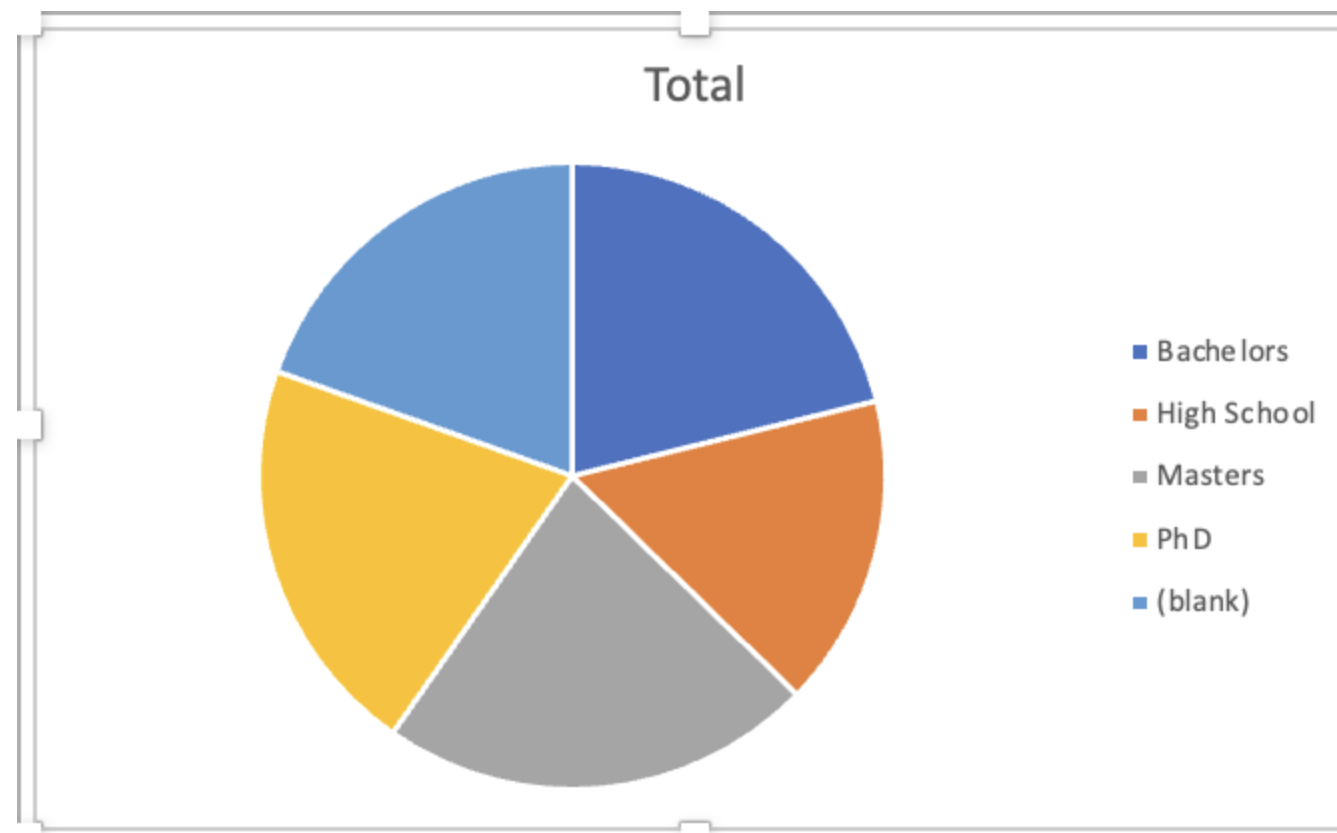
Education Inference
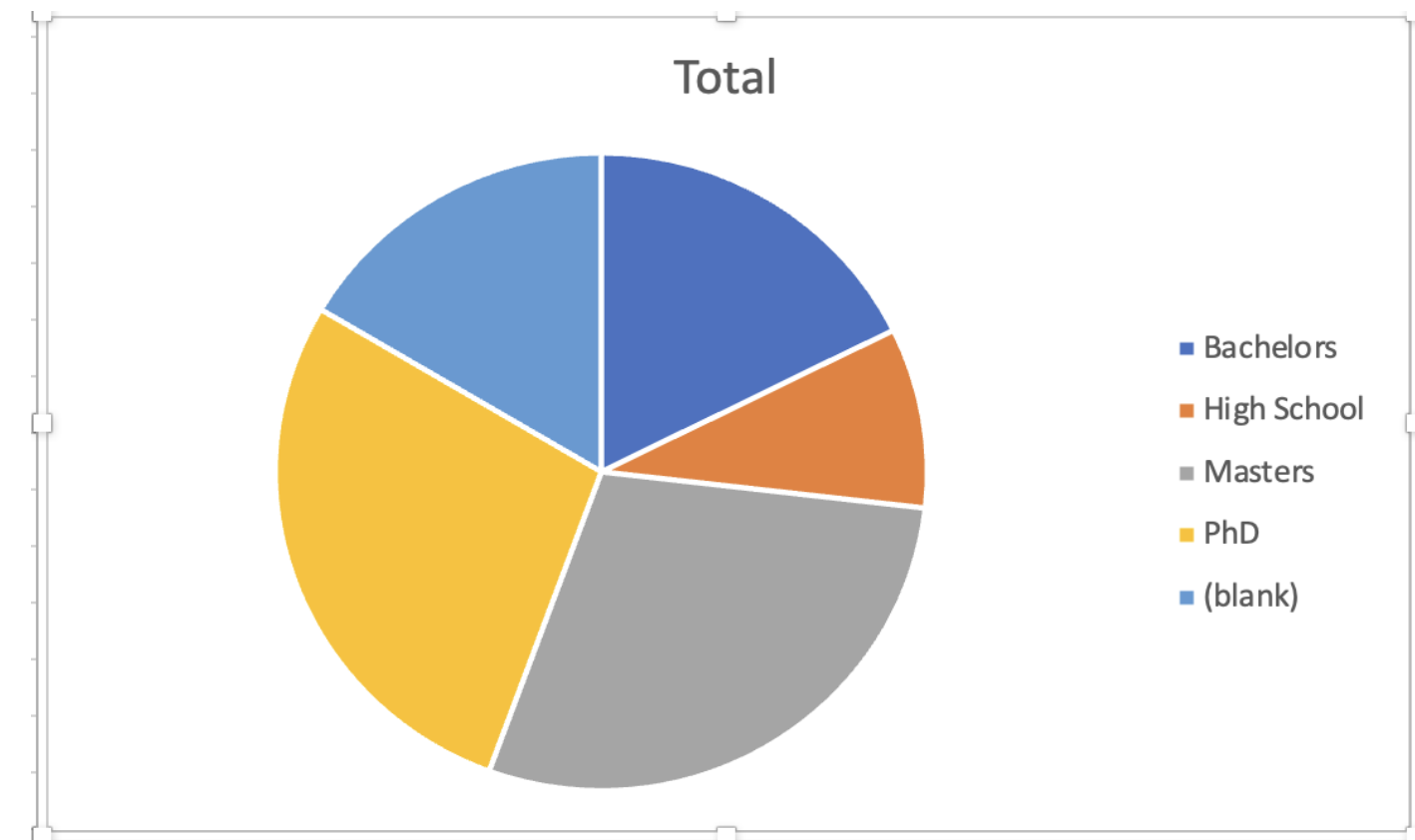

Figure 5 : Miles clocked by Education

Figure 6 : avg car age by education

- Figure 5 above shows that the amount of miles clocked by people of different education is roughly the same.
- However in figure 6, we can see that the average age of cars by people with Master or PHD, is much higher than other sectors. Therefore these individuals have a higher chance of demanding a claim since they travell almost the same distance as the people with other educational degrees, but with older cars.
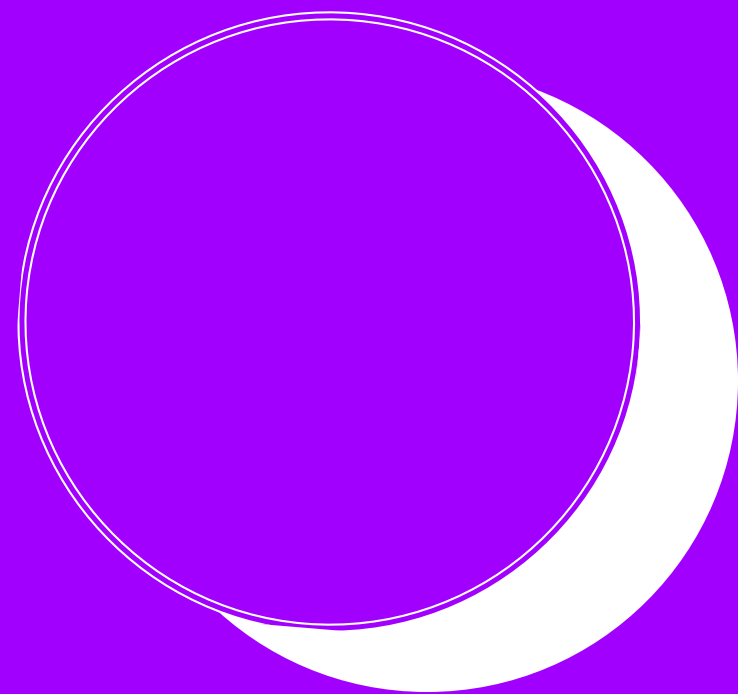
Summary

- Gained insights of the individual columsn of the dataset such as car type and type of jobs

- Developed findings about which class of people based on several factors are more likely to ask for a claim.

- Advised the premium model accordingly based on the insights.

Thank you!

ANY QUESTIONS?