Porto Seguro's Safe Driver Prediction

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Introduction

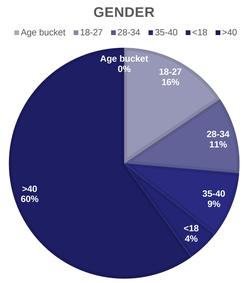
- Auto insurance companies want the ability to predict people who can file a claim for insurance.
- Predicting driver actions early and accurately could help Insurance companies make better profits.
- Improving the accuracy of insurance claims benefits both customers and insurance companies.
- Incorrect predictions effectively raise insurance costs for safe drivers and lower costs for risky drivers which can be costly to insurance companies
- Better predictions increase car-ownership accessibility for safer drivers and allow car insurance companies to charge fair prices to all customers
- The predictions would allow insurance companies to tailor their prices and make auto insurance coverage accessible to more drivers.

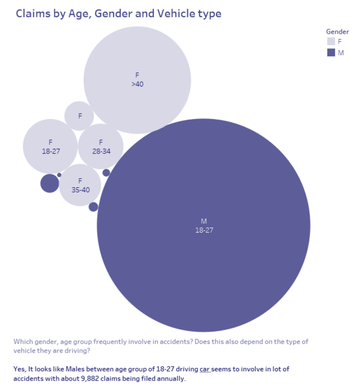
Methods

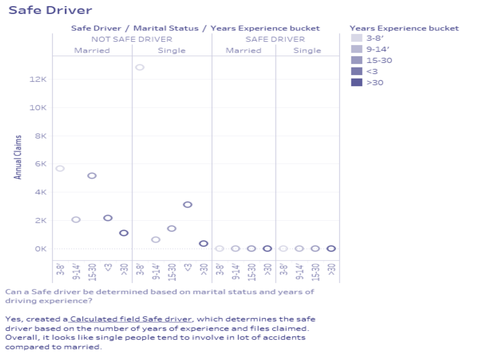
- The method used for study involves deep understanding of different risk factors that helps predict the likelihood and cost of insurance claims.
- The different data features were visualized along with their relation to the target variable, to explore multi-parameter interactions.
- The aim of this study is to predict the probability whether a driver will make an insurance claim on the basis of individual driving habits and build a model that predicts the probability that a driver will initiate an auto insurance claim in the next year
- The method uses a datasheet with 30k records as a reference for predicting driver behaviors based on age group, vehicle type, years of experience and the number of claims filed by the driver in the previous years.
- The geographical location was also used as a factor since drivers in certain location tend to show more safe driving behaviors compared to others.
- Driving behavior of different age group people were analyzed in detail and then differentiated by Gender to determine if specific gender had more safe driving behavior compared to other.
- Vehicle type used by the driver also showed a significant variation in the number of claims filed.
- It uses a calculation based on the number of years of driving experience and the number of claims filed to predict the probability of driver making an auto insurance claim.

Results

	Gender	
Age bucket	F	M
18-27	628	9520
28-34	434	12
35-40	371	19
<18	181	4
>40	2412	74







Discussions

- The results based on visualization revealed that men between age group 18 -27 filed more claims and showed more unsafe behavior when driving car.
- Women in the same age group had filed only fewer claims and had more safe behaviors.
- Research based on location revealed that New Jersey had more unsafe drivers with the highest number of files claimed compared to Illinois which had the lowest number.
- Marital status showed a significant difference with Married individuals showing more safe behavior compared to singles.

References

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