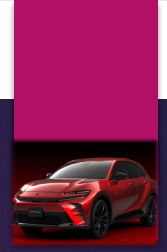
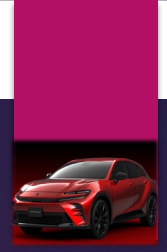


Predicting insurance claim Risk

TIMOTHY LINGEVELDT



Stakeholders

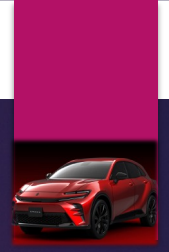
Underwriting departments

Claim Risk Department

Marketing and sales

- Identify and Build customer risk profile based on the information the customer provides to us
- Identify the probability of a customer claiming and produce applicable premium based on that risk profile

About our Data



Data represents persons who has taken vehicle insurance with us, this includes identity information of the person and information of the vehicle being insured.

Data informs us whether the customer has claimed or not claimed on their insurance with us.

Data consists of 18 Features and 10 000 Rows

Our Customers

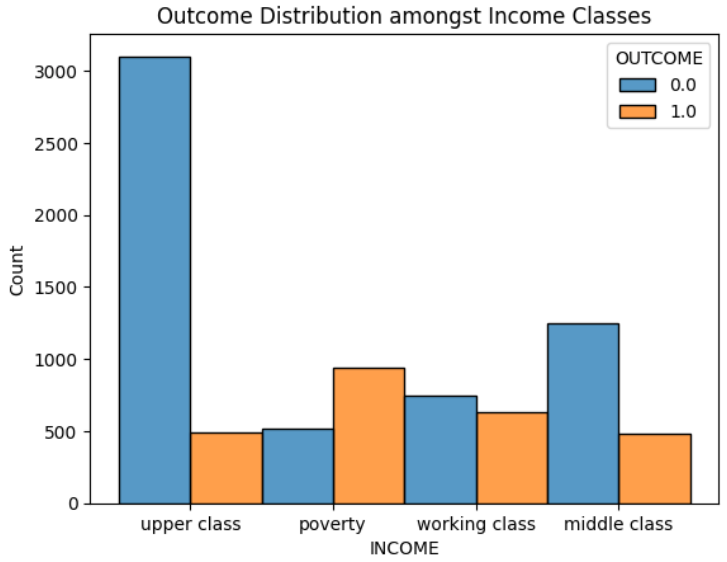
Income class indicate that upper class are our biggest customer base

Upper class also has the least number of claims compared to the other classes

Poverty class has the greatest number of claims, there tend to be more risk associated to the poverty class

The data shows us a large part of our customers own their vehicle.

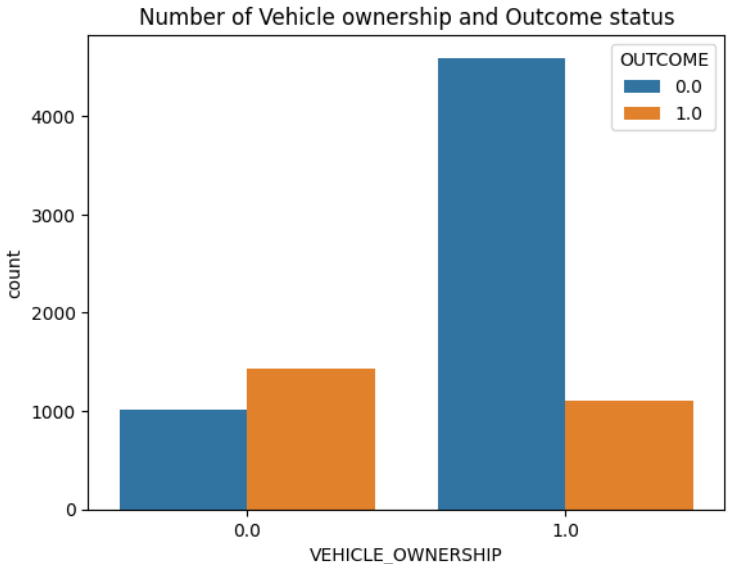
Customer who own their vehicle tend to claim less – which indicates lower risk



Legend

Outcome:

0 = Not Claim
1 = Claimed



Legend

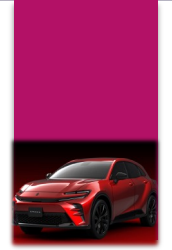
Outcome:

0 = Not Claim
1 = Claimed

Vehicle Ownership

0 = Not owned
1 = Owned

Model Performance



Data Class balance

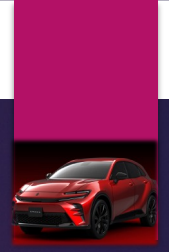
- 70% non claimed
- 30% Claimed

Metrics

- Precision:
  - Precision measures the accuracy of positive predictions made by the model
  - Precision score: 0.776 which indicates that when the model predicts a customer will "claim," it is correct 77.57% of the time.
- Accuracy:
  - Accuracy measures the overall proportion of correct predictions made by the model.
  - Accuracy score: 84.36% which indicates he model correctly predicts the class (either "claimed" or "not claim") for 84% of the instances.

Strengths and limitations:

- Due to the imbalance of the data, the model has predicted well the negative(non claimed) Predictions
- Our Strength here is that 77% positive predictions were correctly predicted, this suggests that the model is relatively precise in identifying actual claims.



Recommendations

01

There are Gaps in our customer base , there is a clear market to promote directly to Working class and Middle class as this group are the minority of our customers.

02

Using these prediction business can tailor marketing campaigns and offers to customers who are less likely to make claims, potentially increasing customer retention and profitability.

03

This information can help us make more accurate decisions regarding policy issuance, coverage levels, and pricing.