How to decide the destination showroom for second hand car at the time of entry into inventory?

Ahana Datta, Hector Moreno, Néstor Huerta, Nephtalí Garrido, Edgar Castaneyra

Highlights

- We use Gradient Boosting Trees model to predict inventory days per showroom.
- We can predict the inventory days of a car with a mean error of 29 days.

Background

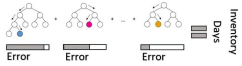
No matter the industry or sector, having the right mix of products at each branch is the goal of any company. In the automotive sector, Data Science tools could be used to determine which is the best showroom to display a car.

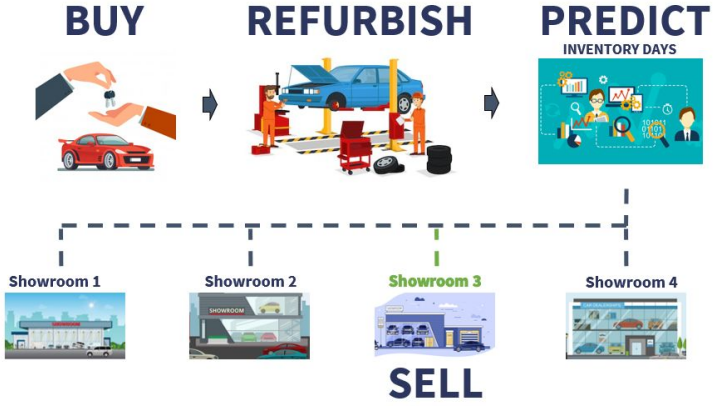
Data

Using a 4-months sales history of four different showrooms, we are able to identify the features of a car that are important to estimate its inventory days.

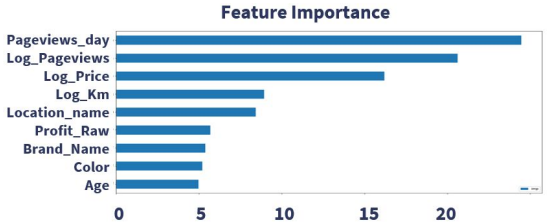
Model

We built a GRADIENT BOOSTING TREES model to predict inventory days of a car, this model works very well because we have heterogeneous data (features measured on different scales), and it was useful to detect non-linear relations between features automatically.

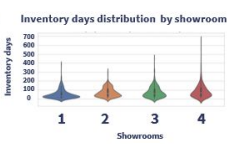


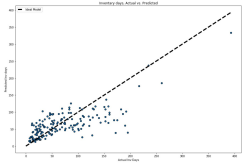


Our model indicates that the online visibility (pageviews) has highest importance in predictive power which is in line with what is expected in an increasingly digital world.



The mean for each showrooms are similar but they have different variance.





Using Data Science Tools we can predict inventory days per showroom with a mean error of 29 days.

Nuance

- The model predicts the inventory days given that the car receives at least 2,000 pageviews in the first 60 days of its publication.

- The prediction is calculated in logarithmic scale