This presentation is about cars. (and data)

Predicting cars prices in 1987 and today's Electric Vehicles.

Federico Giuliani • 21/05/2021

Overview

1. THE PROJECT
2. THE DATASET
3. THE PREDICTION
4. THE ANALYSIS

1987

Ferrari F40

TODAY

Tesla Model S

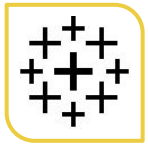
The Project

My goal is to create a reliable model that would be able to **predict prices** of cars listed within the two datasets.


Trello


Python


GitHub



Tableau

- How the automotive industry changed during the years?
- What are the main trends and features in 1987 compared to today EVs?
- What are the features that are influencing car prices in the two markets?

1987

Porsche 911 Turbo

TODAY

Polestar 2

The Dataset

1987 Ward's automotive yearbook with various characteristics of imported car model in the US market.

Today's Electric Vehicles (EV) database from ev-database.org.

- Price have been adapted considering the inflation of prices + 128% (1$ → 2.28$)
- Currency has been adapted in US Dollars for both dataset.
- Data has been cleaned from missing values and substitute them with the mean values of the same category.

1987

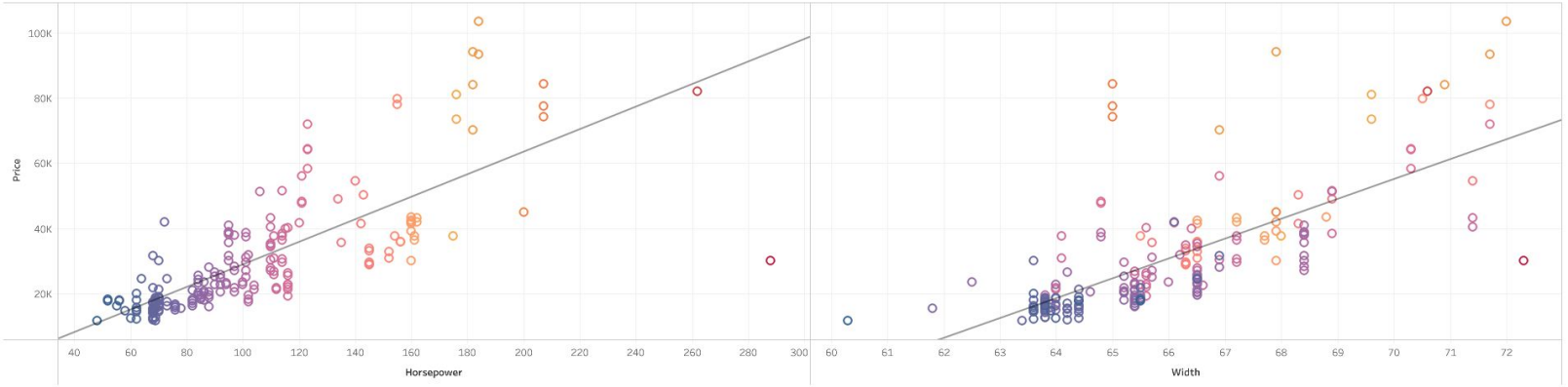
Ford Escort RS Turbo

TODAY

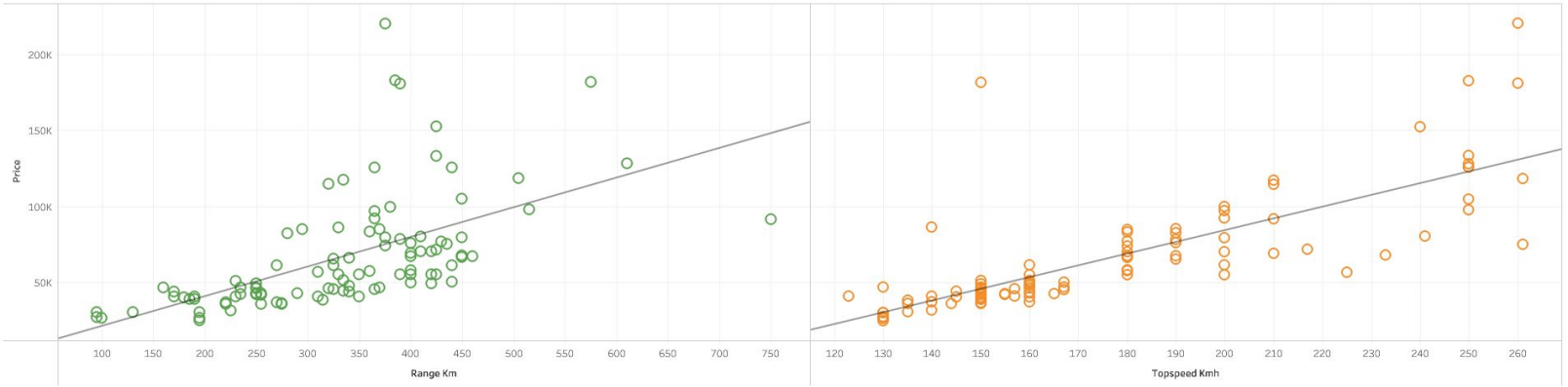
Volkswagen ID. 3

The Prediction

Price correlation 1987



Price Correllation today



The Prediction

1987 Dataset : width, curb weight, engine size, and horsepower

R2 score of 0.884 and an RMSE of 3980.93

Model limited is the number of data point

Today EV : topspeed, range of kilometers, and efficiency

R2 score of 0.717 and an RMSE of 16562.62

Model limited is the number of data point

1987

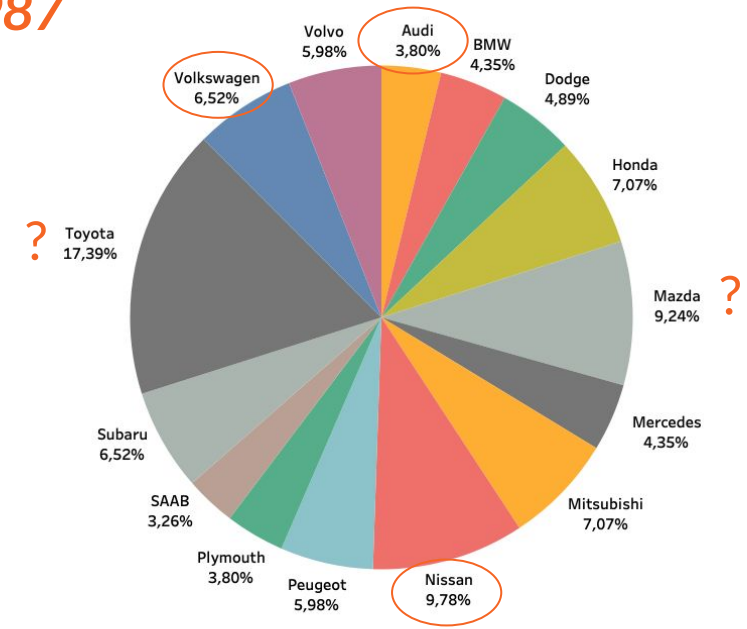
Lancia Delta HF Integrale

TODAY

Hyundai Ioniq 5

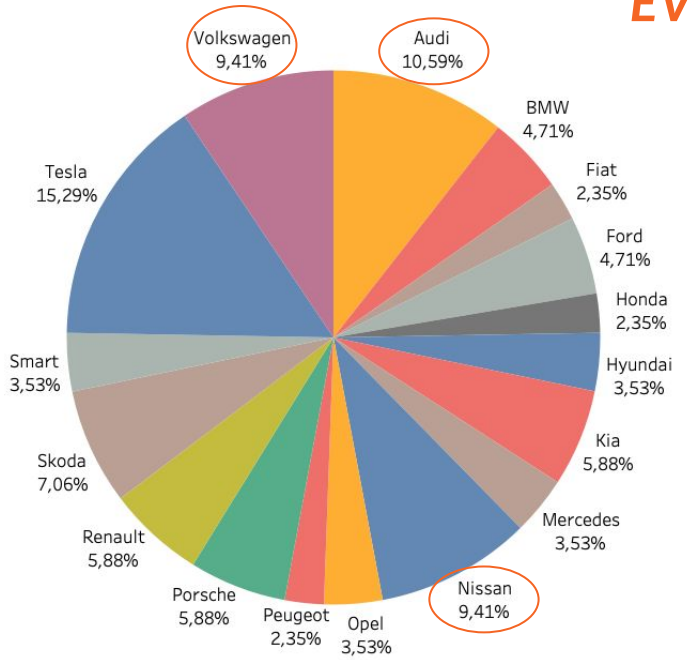
The Analysis - Market Share

1987



Toyota and Mazda had a wide offer of models while now they are not selling any full electric vehicle.

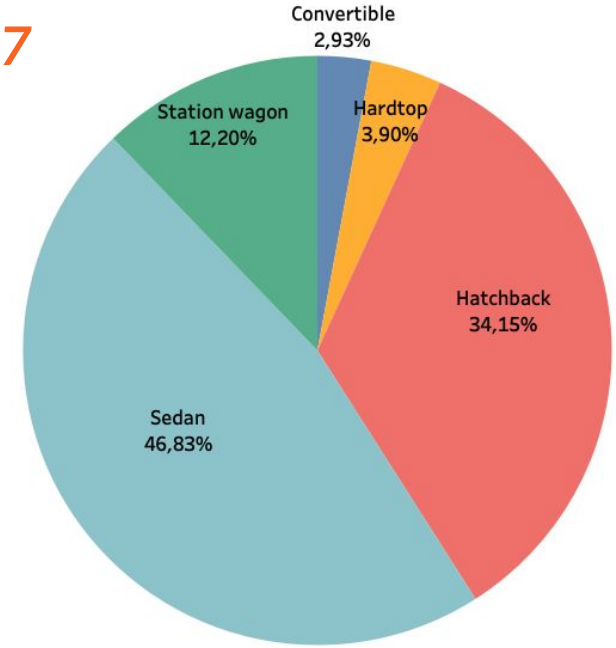
EV



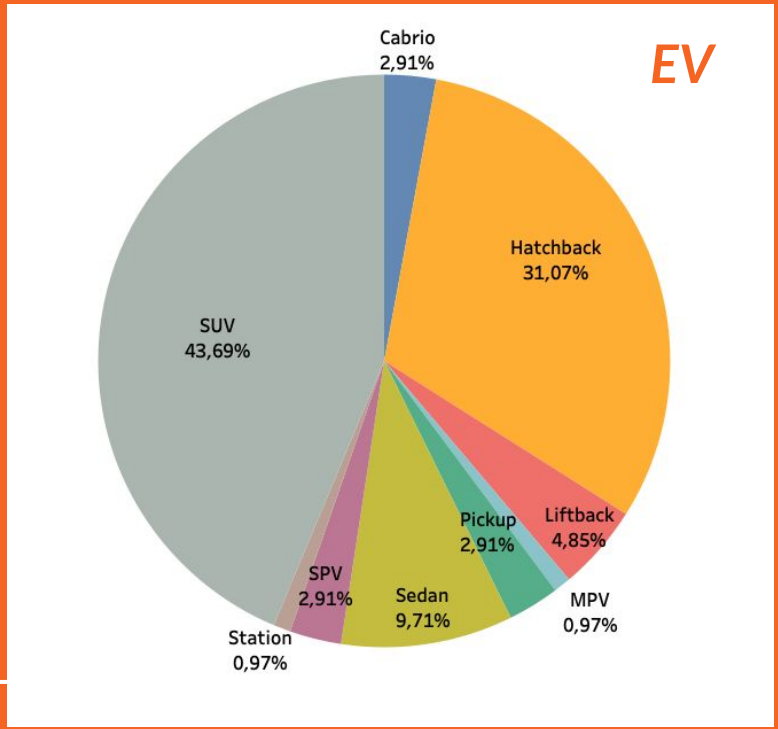
Tesla has the biggest offer of EV but

The Analysis - Body type

1987



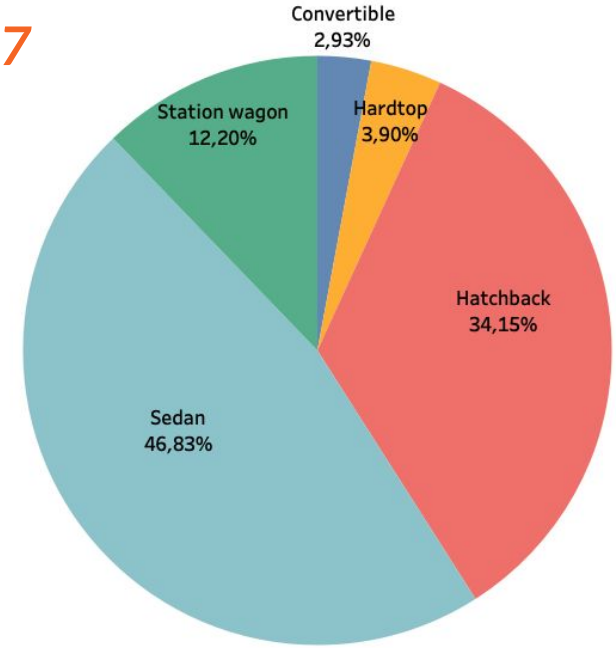
EV



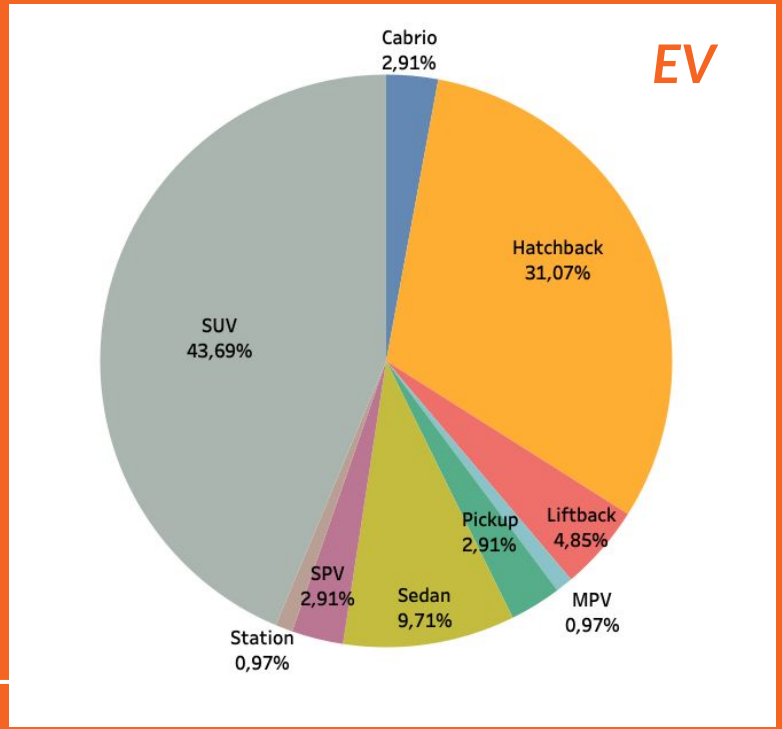
Sport Utility Vehicle are more popular nowadays rather than sedan and Station Wagon.
Hatchback cars are having the same success after thirty years.

The Analysis - Powertrain

1987

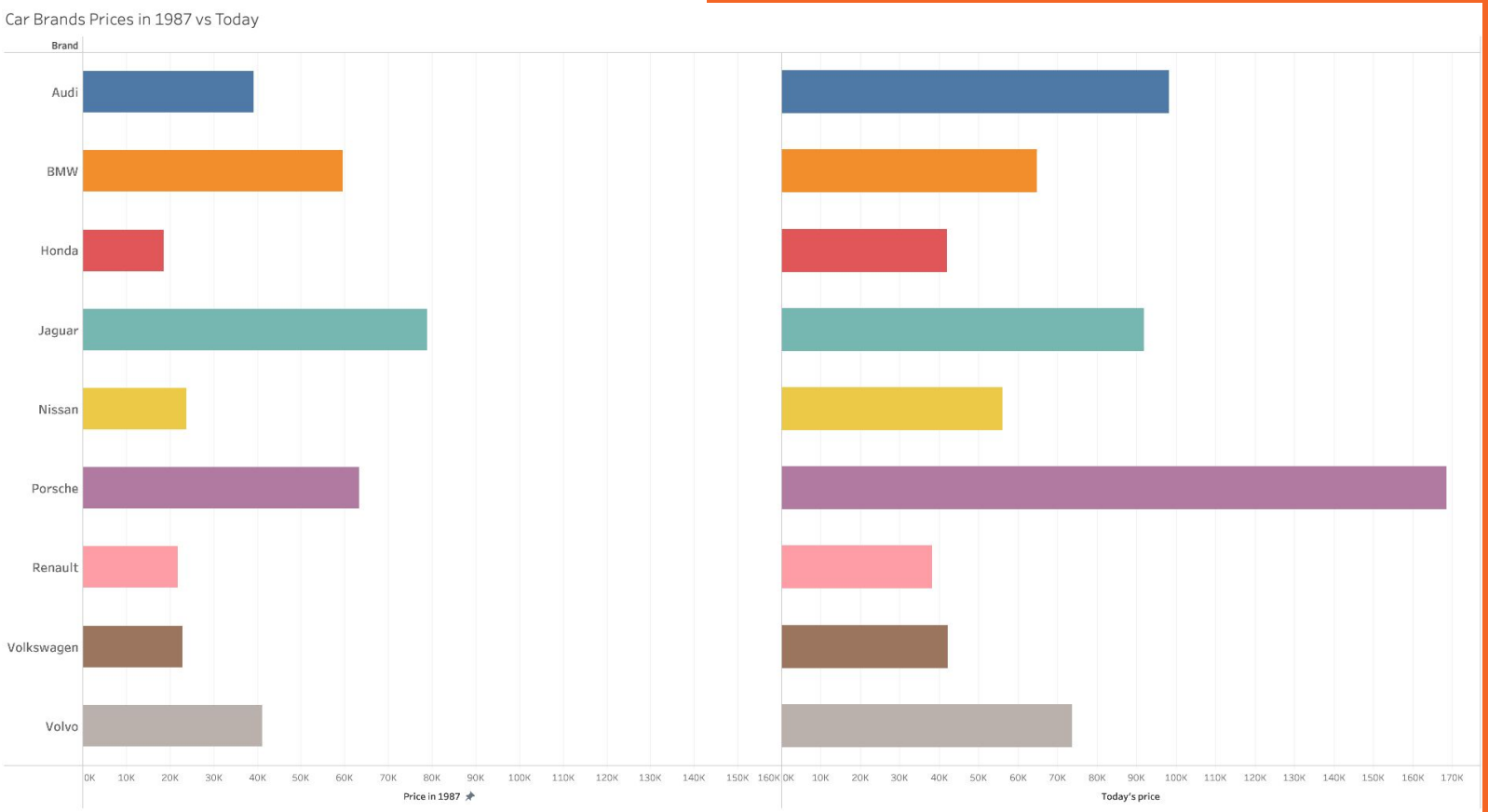


EV



Sport Utility Vehicle are more popular nowadays rather than sedan and Station Wagon.
Hatchback cars are having the same success after thirty years.

The Analysis - Price



Conclusion

Accuracy is not enough

Despite of good accuracy these two dataset are too small for predicting prices.
Automotive sales dataset would have fit better this model

It’s all about 4 wheels SUV

This is the type of car we are going to see on roads in the next years.

More you pay, longer you drive

When in the past horsepower where increasing the price, now the range of kilometers with one charge are affecting prices.

Thank you for listening.