

Impact of car features

Introduction:

The automotive industry has been rapidly evolving over the past few decades, with a growing focus on fuel efficiency, environmental sustainability, and technological innovation. With increasing competition among manufacturers and a changing consumer landscape, it has become more important than ever to understand the factors that drive consumer demand for cars.

In recent years, there has been a growing trend towards electric and hybrid vehicles and increased interest in alternative fuel sources such as hydrogen and natural gas. At the same time, traditional gasoline-powered cars remain dominant in the market, with varying fuel types and grades available to consumers.

Task:

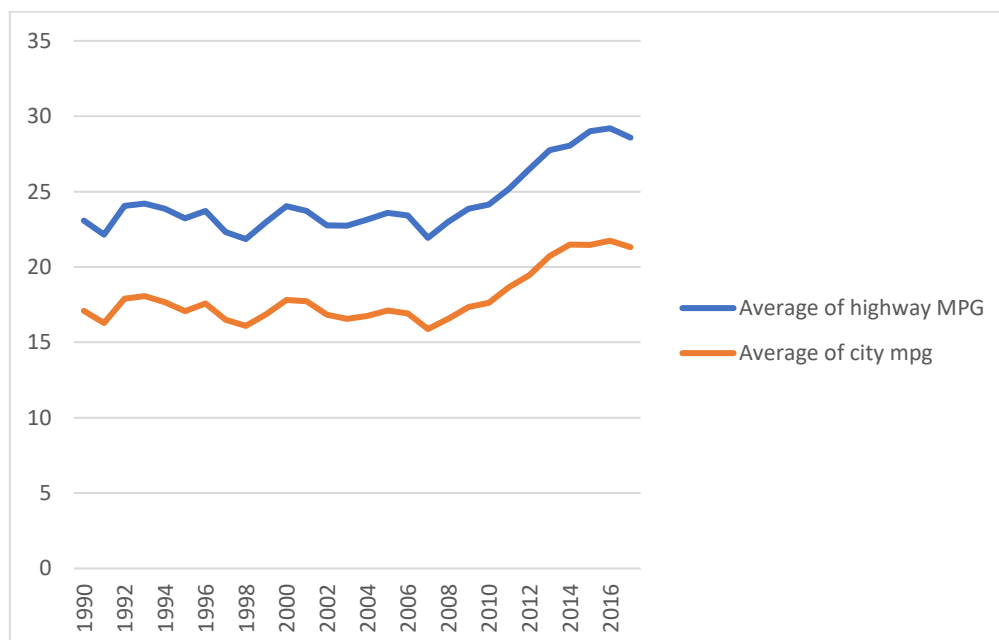
Analysing the relationship between a car's features, market category, and pricing, and identifying which features and categories are most popular among consumers and most profitable for the manufacturer

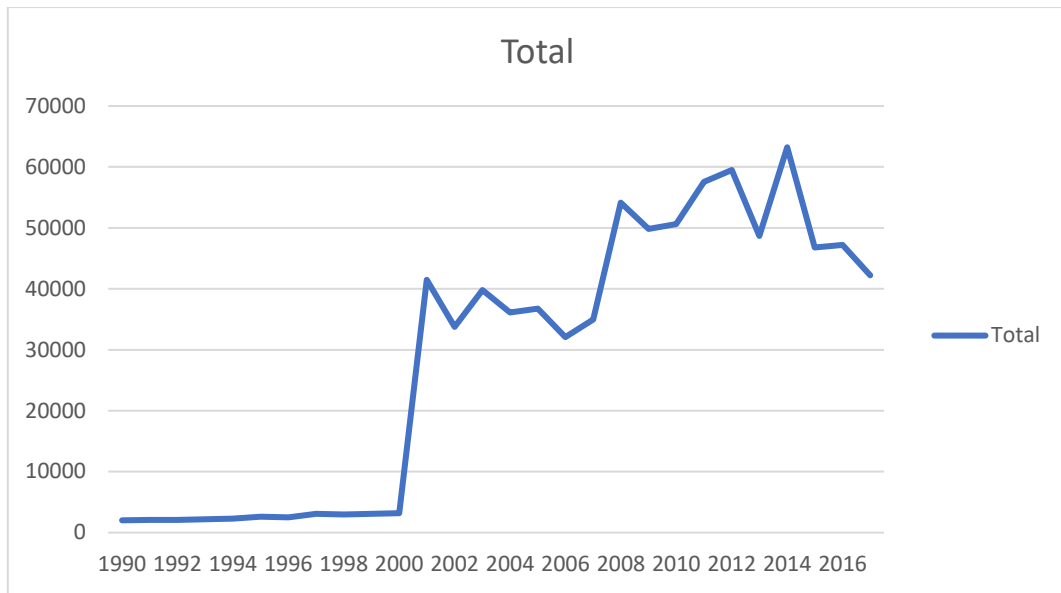
Using data analysis techniques such as regression analysis and market segmentation, to develop a pricing strategy that balances consumer demand with profitability, and to identify which product features to focus on in future product development efforts.

Tech stack used:

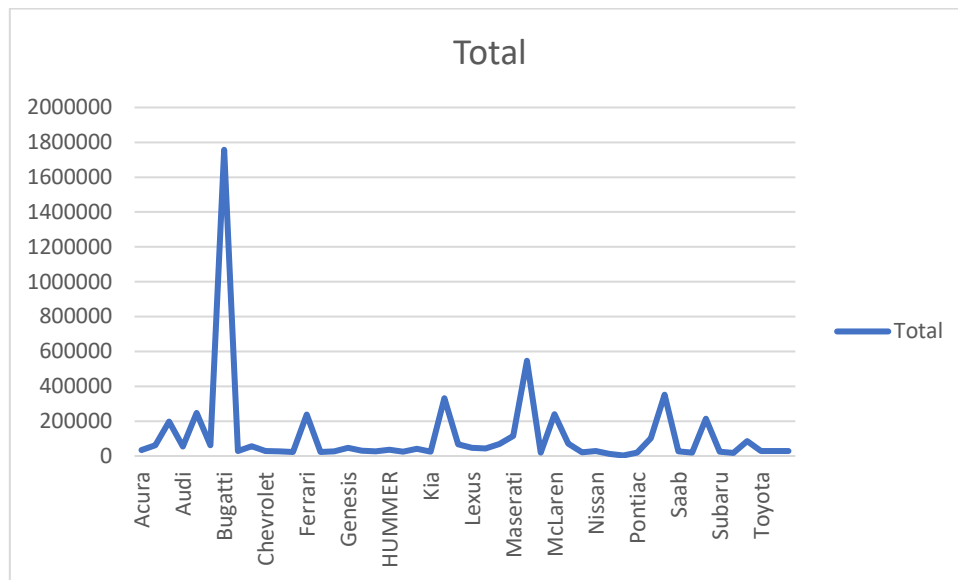
Microsoft Excel

Vehicle Features:

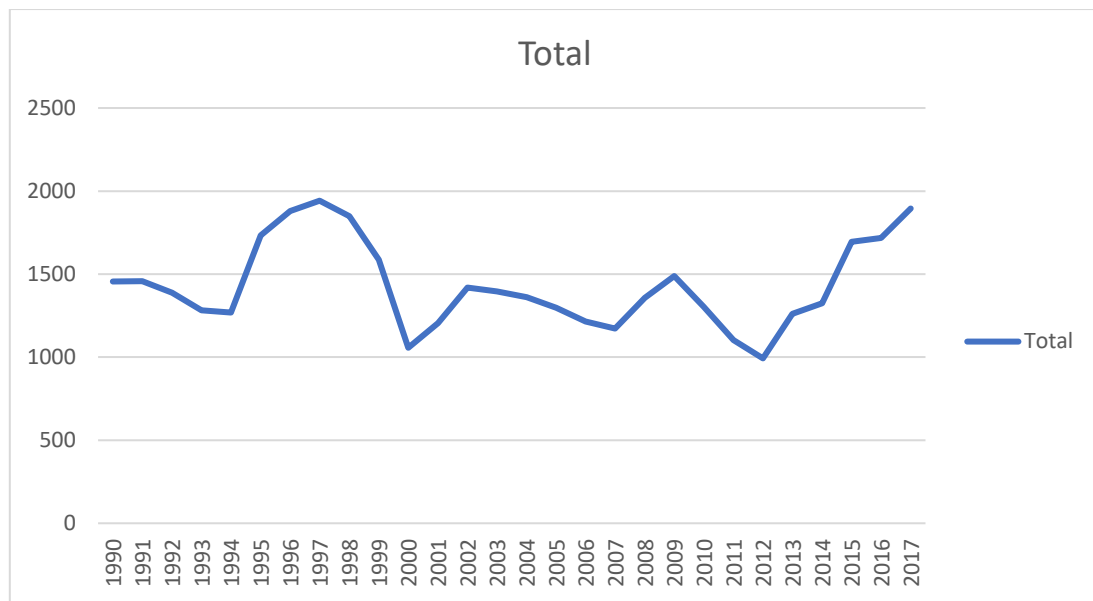




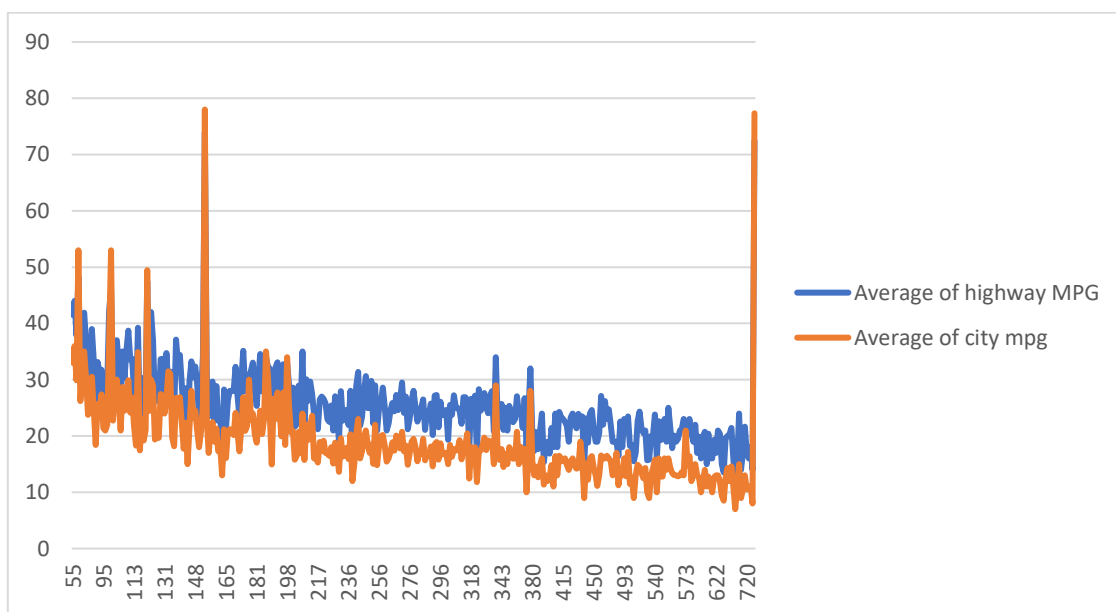
MSRP vs Year



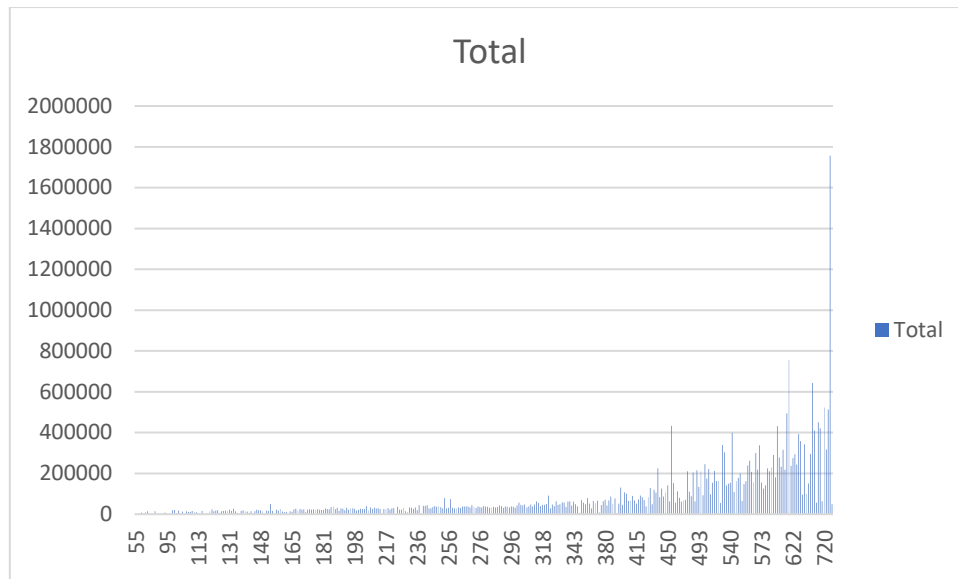
MSRP vs Make



Popularity vs year

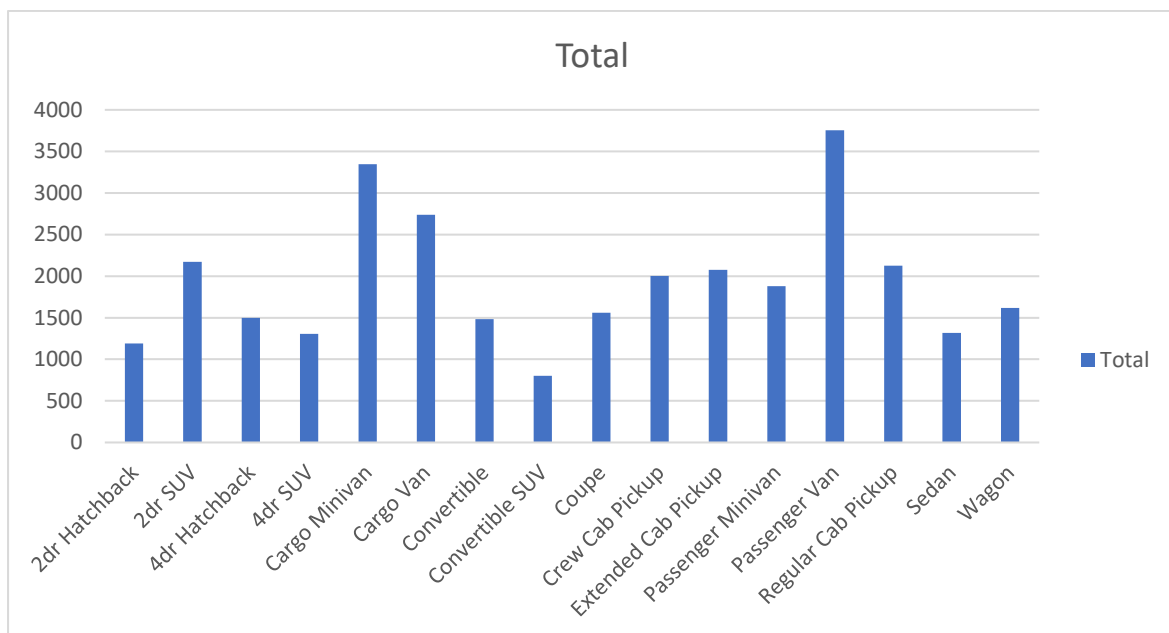


Highway MPG, City MPG vs Engine HP

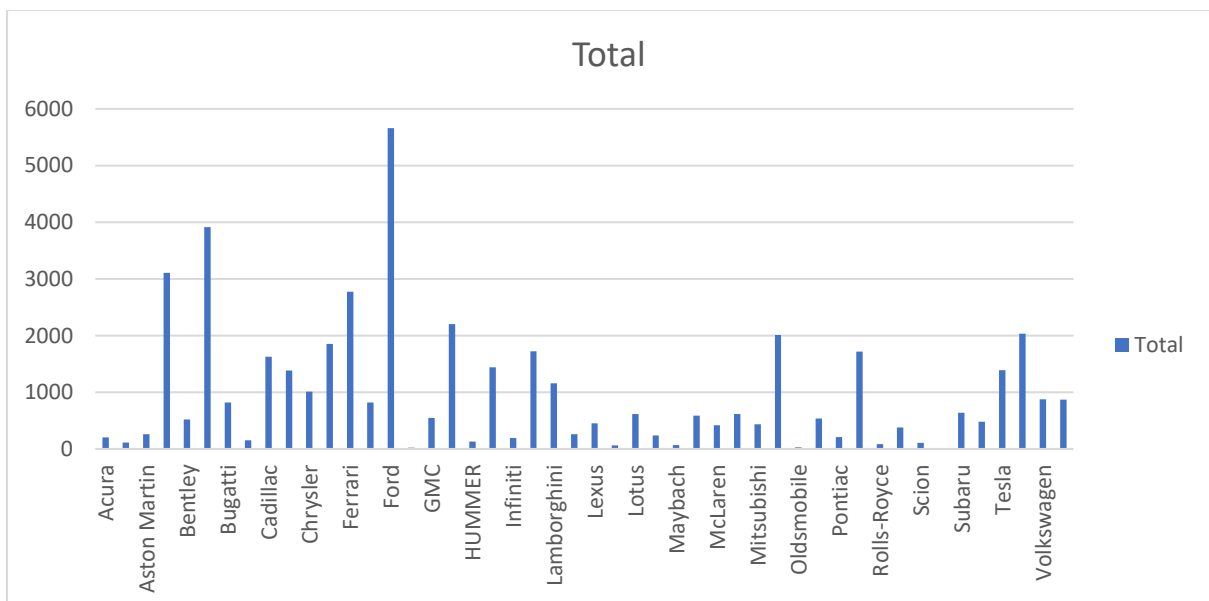
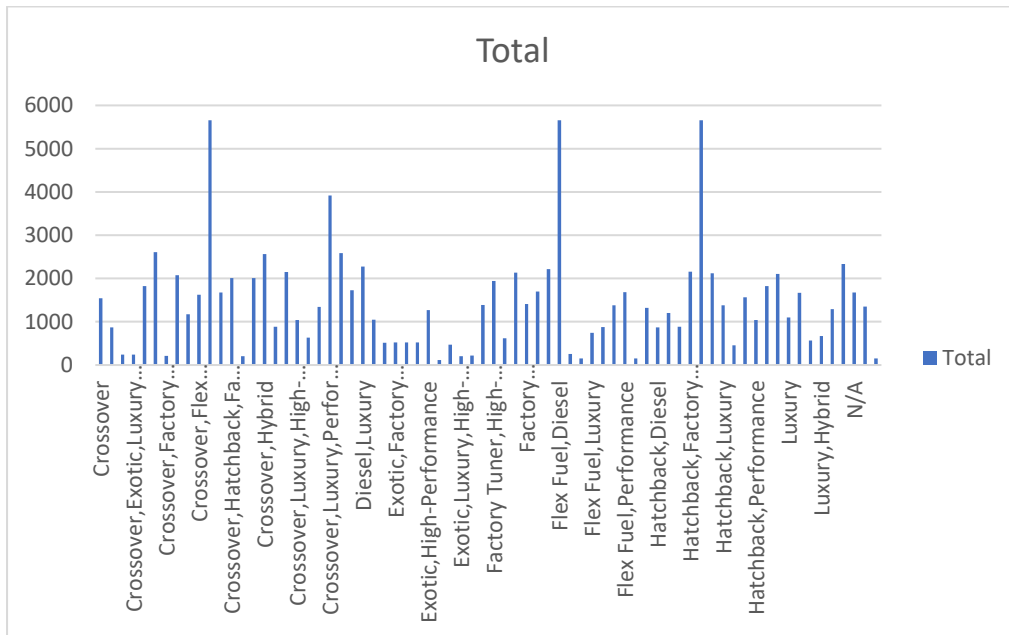
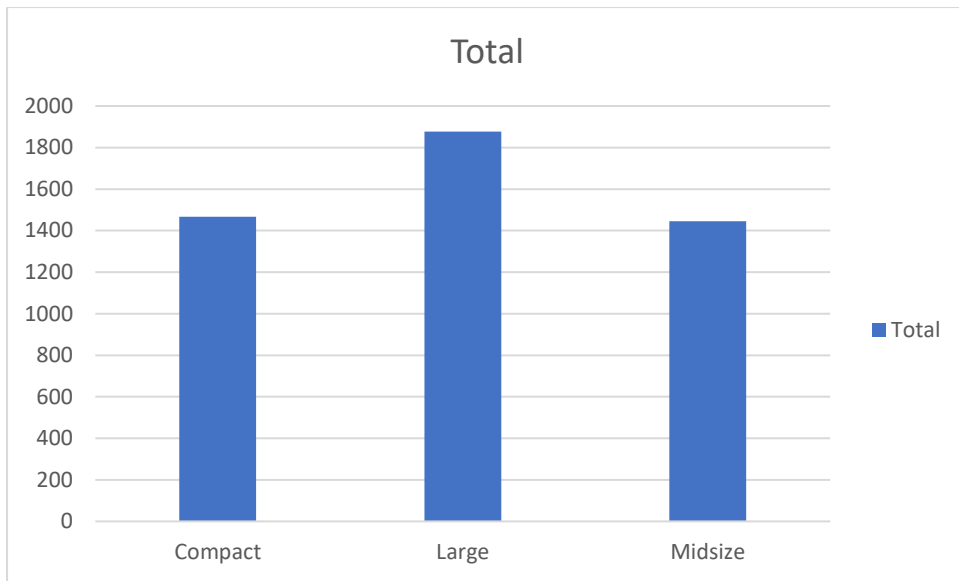


Engine HP vs Price

Popularity vs Vehicle features:



Passenger van and cargo minivan are popular compared to others



Correlation coefficients:

| MSRP | Column1 |
|----------|------------------|
| 0.531312 | engine cylinders |
| -0.12664 | number of doors |
| 0.662008 | engine HP |
| -0.16004 | highway MPG |
| -0.15768 | city MPG |

Remarks:

Based on the car features and brand the car prices differ a lot. For example famous brands like Bugatti have high costs. Other than the brand the style, model, speed and flexibility of the car also effect the price considerably.

From the graphs we can observe that engine HP has a significant impact on the price. For high engine HP the prices increased.

We can also see that the popularity of the cars is increasing over time.

The MSRP of the vehicles is also increasing over time.

It means more people are willing to spend on vehicles and their popularity is increasing over time.

The manufacturers should focus more on the cars that are popular among people and try to increase their flexibility and features and develop new models in them.

For the remaining cars also it is better to make them more flexible and add more versions or features so that people will prefer them and the diversity will be maintained.

Link:

<https://docs.google.com/spreadsheets/d/18I3Ufpkaest91DfggHUKjsIKUTuVgin0/edit?usp=sharing&ouid=117379562832253850032&rtpof=true&sd=true>