



ANALYZING THE IMPACT OF CAR FEATURES

Debarshi Mahatao



PROJECT DESCRIPTION

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.

The project aims to analyse the car features that effects the manufacturer car prices, as a Data Analyst, the client has asked, How can a car manufacturer optimize pricing and product development decisions to maximize profitability while meeting consumer demand.

The dataset contains information on various car models and their specifications, and is titled "Car Features and MSRP". It was collected and made available on Kaggle by Cooper Union, a private college located in New York City. Number of observations: 11,159 , Number of variables: 16, File type: CSV.



APPROACH

- ❑ I visualised the charts and graphs using visualisation, regression analysis, and descriptive statistics for analysis.
- ❑ Descriptive analysis was used to determine the mean of the feature variables for cars and then to display them as graphs and charts.
- ❑ Regression analysis demonstrated the relationship between independent and dependent variables, i.e., how the price of an automobile is influenced by its particular qualities.
- ❑ It was challenging to average or aggregate the values of the variables when making the charts.



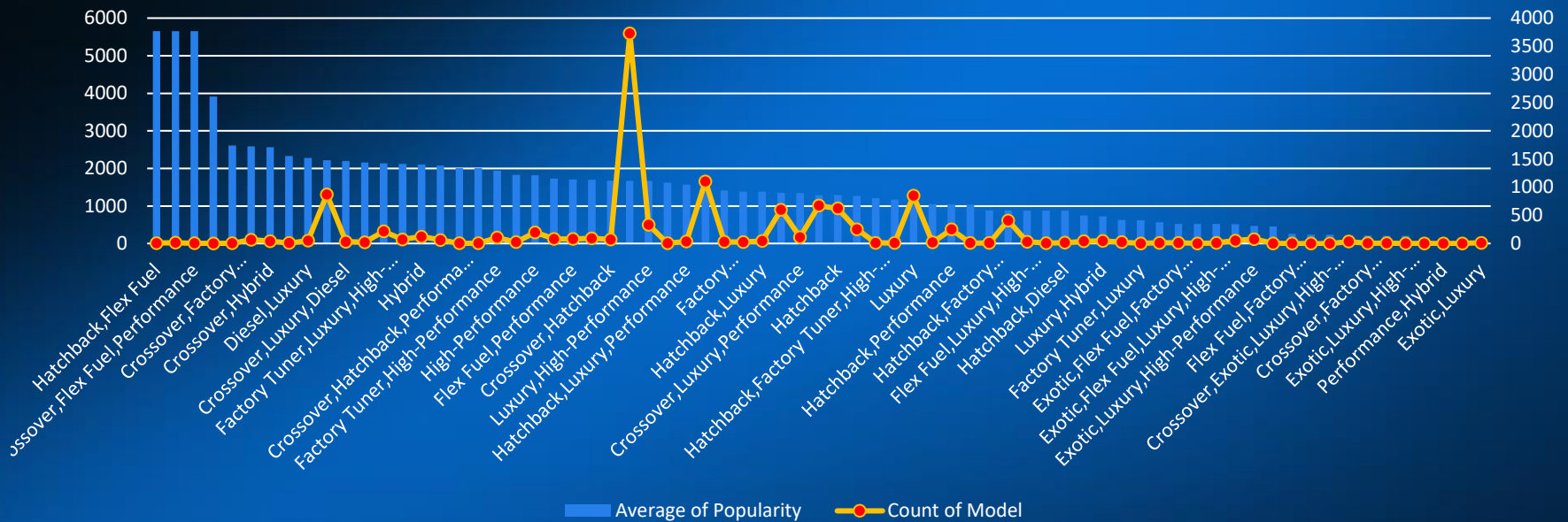
TECH - USED

All the analysis were conducted using Microsoft excel sheet. Excel tool were used to create all visualization and graphs for better understanding





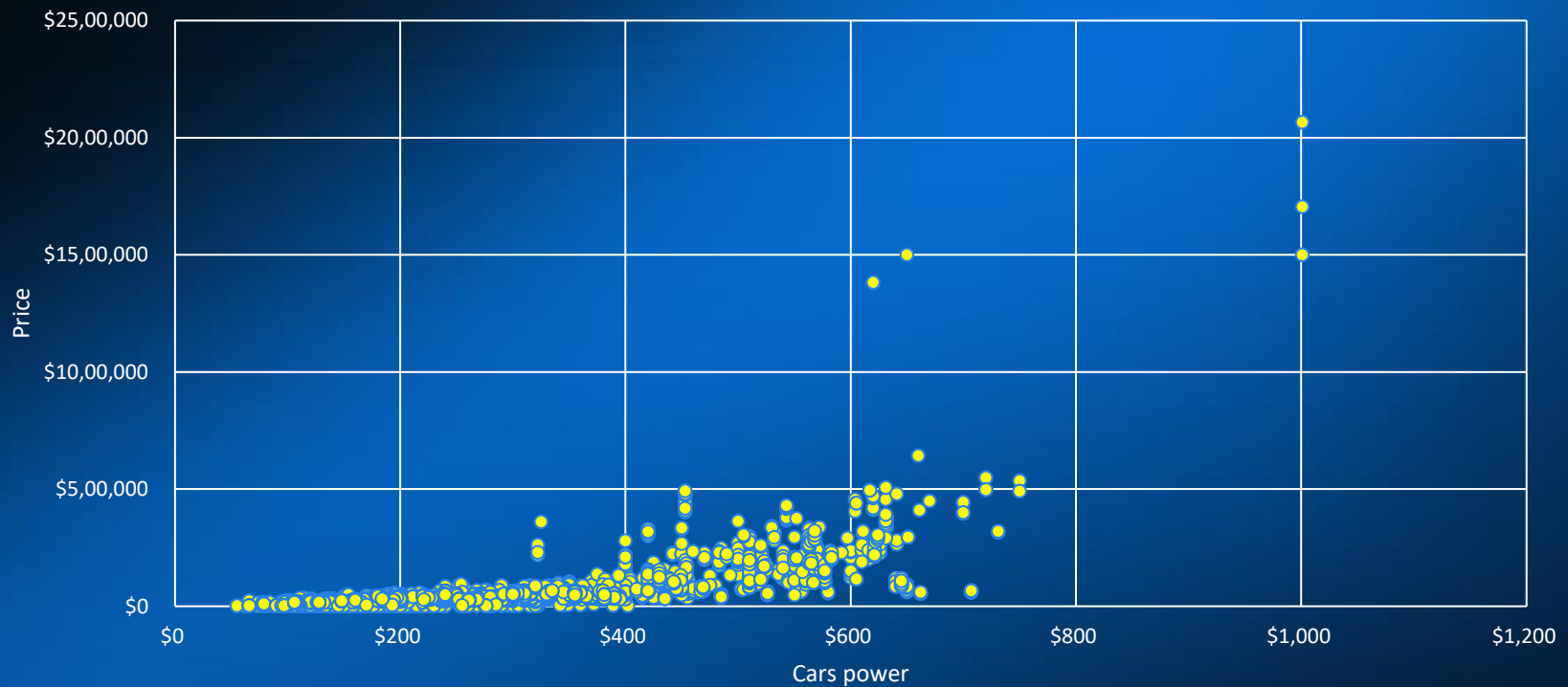
Relationship between market category & car model



Insights: From the above chart its seen in market category Hatchback and fuel flex are the highest populated and having highest number of car.



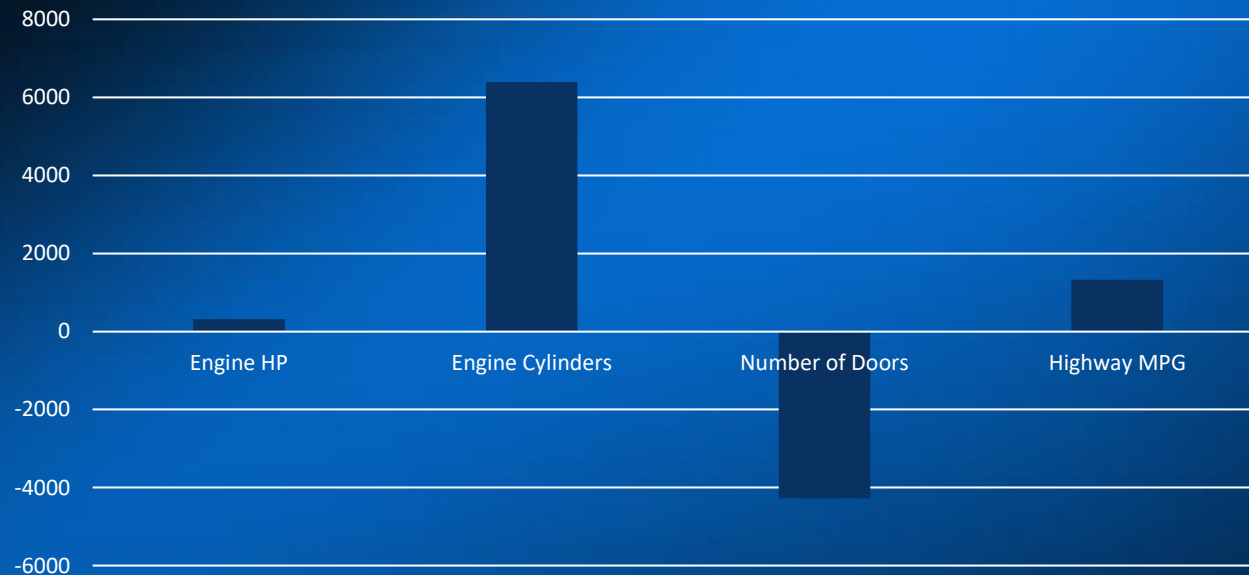
Relation between car's engine power & price



Insights: From the graph its clear that which have high engine power it has high price.



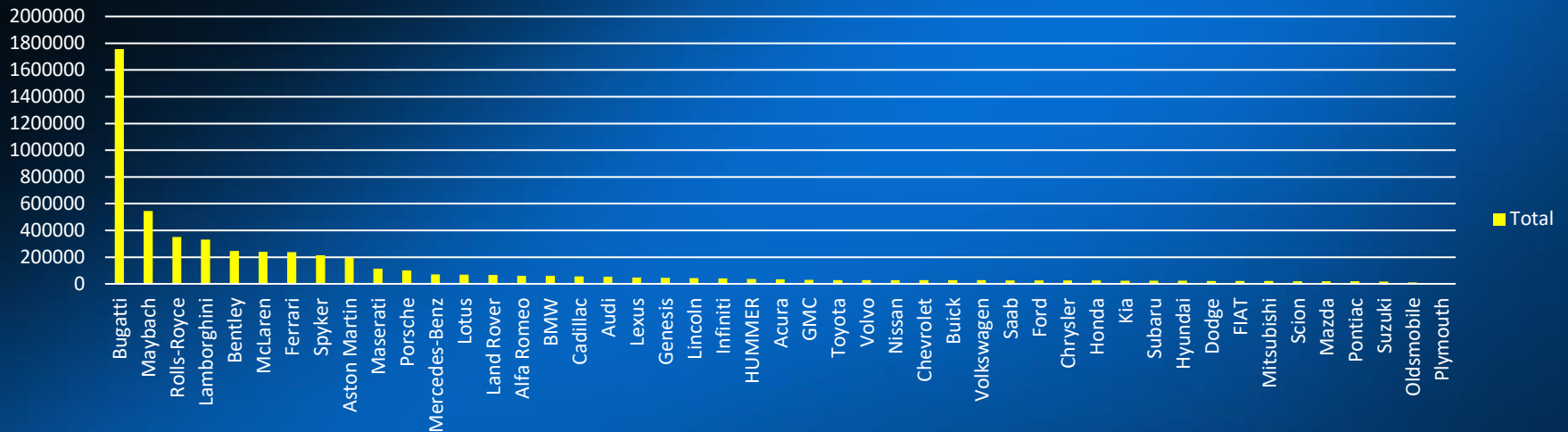
COEFFICIENT OF VARIABLE



Insights: its seen from the graph that engine cylinders have the strongest relationships with the MSRP.



Average price of car across various manufacturers



Insights: From the graph its seen that car brand bugati and Bentley have the highest average price.



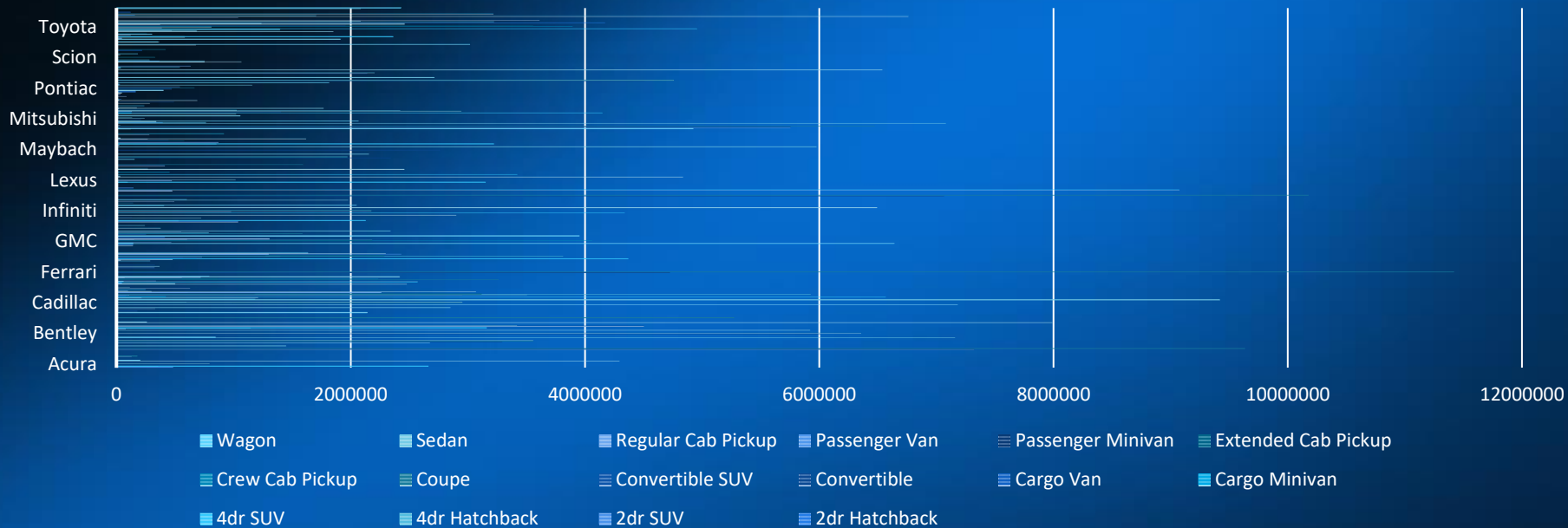
FUEL EFFICIENCY



Insights: from the graph its seen that no. of cylinders having 4 gives maximun fuel efficiency. As fuel efficiency is inversely proportional to no. of cylinders.



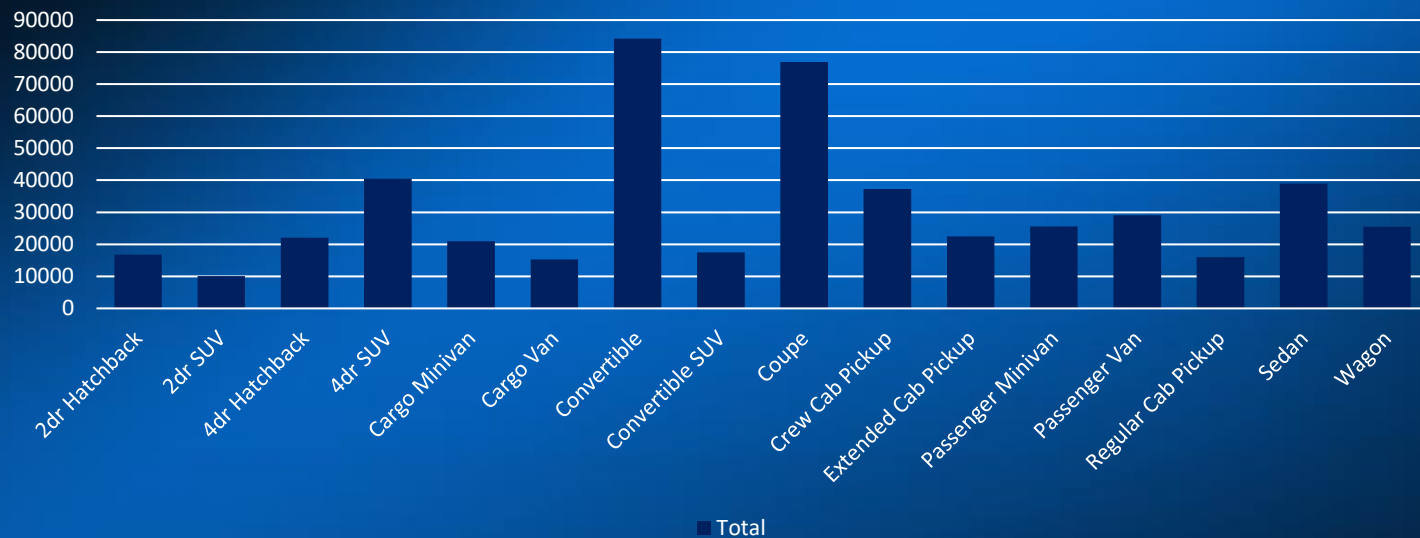
DISTRIBUTION OF CAR PRICE BY BRAND AND BODY STYLE



Insights: Its seen from the graph that body style of Chevrolet and mercades benz have highest contribution in cars price.



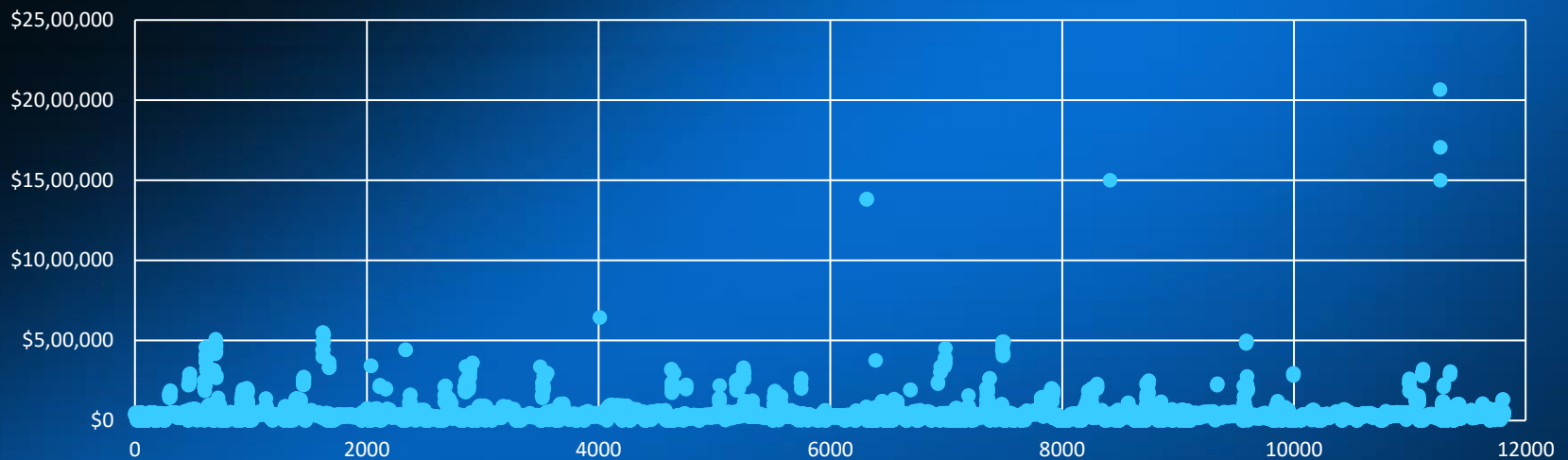
AVERAGE DISTRIBUTION OF CAR PRICE BY BRAND AND BODY STYLE



Insights: From the graph its seen that bugati and Convertible style of Maybach have the highest average car's price.



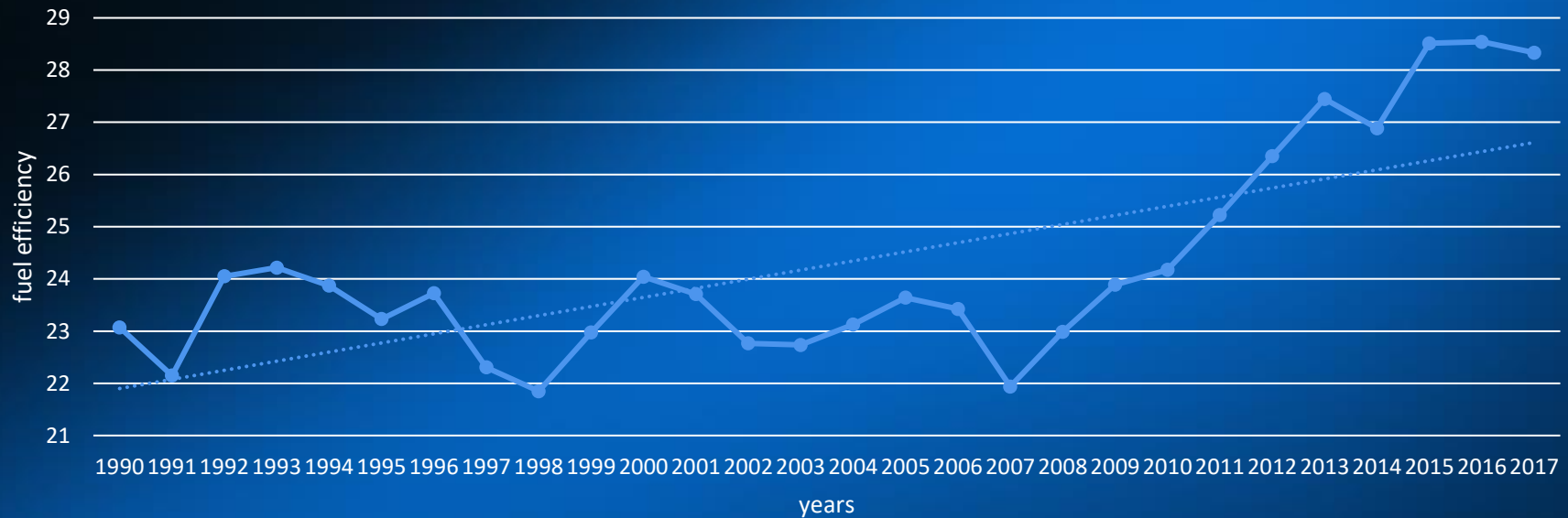
RELATIONSHIP BETWEEN MSRP AND TRANSMISSION TYPE



Insights: From the Chart its seen that automated convertible and automated manual coupe are highest in contributing MSRP.



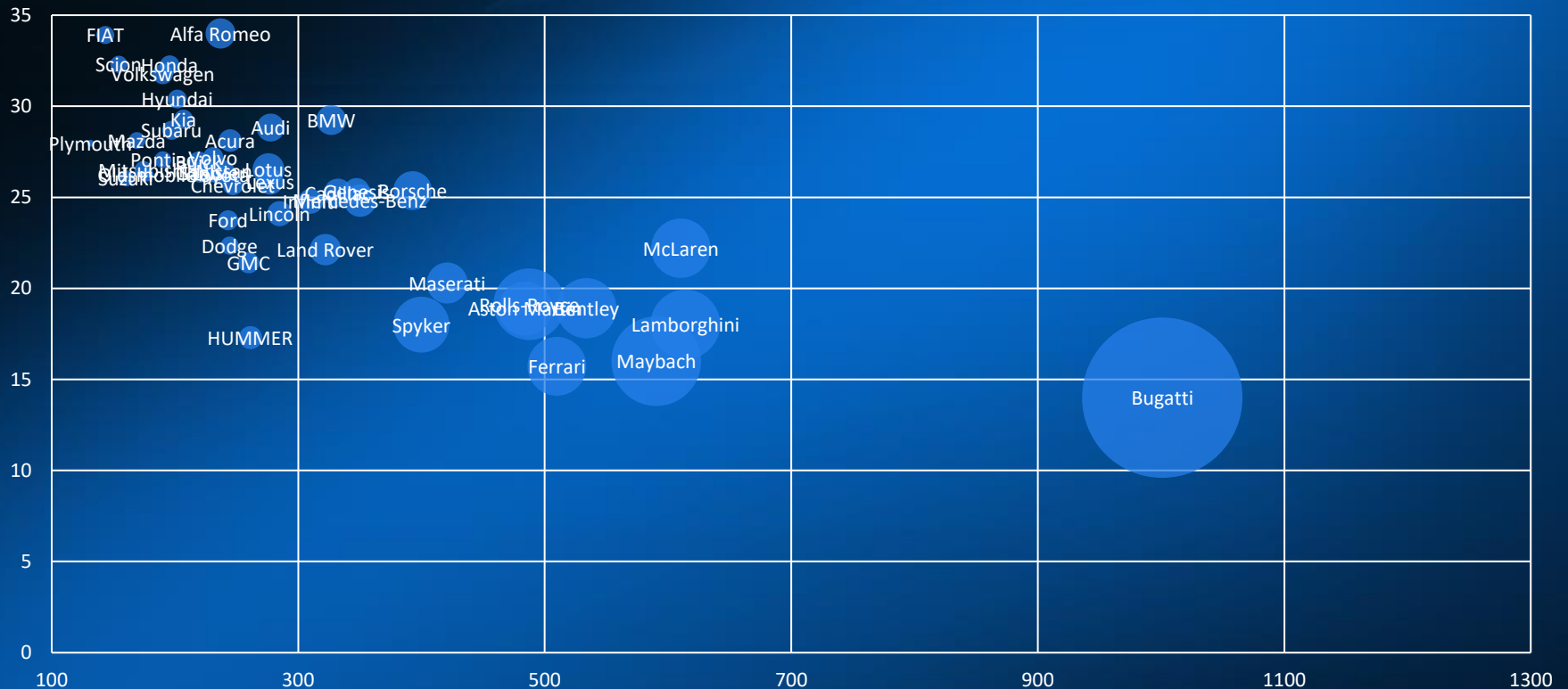
FUEL EFFICIENCY OVER TIME



Insights: Its seen from the graph that with time increase the fuel efficiency has also increases.



RELATIONSHION BETWEEN ENGINE HP, MPG & PRICE OF CARS



Insights: its seen from the chart that the car having high engine hp have high price and cars having highway MPG their price getting low. Thus this refer that the car having high engine power coast more price.



RESULT

- ❑ Coupe body style contributing maximum in car's MSRP.
- ❑ In transmission type automated_manual creating high impact because in a single car having both automated and manual gear system will more beneficial rather than single gear system.
- ❑ Companies needs to produce high or at least good fuel efficiency of cars by which majority of the class can afford a car.
- ❑ Overall, fuel efficiency and Coupe body style features highly impacting the car price and profitability.
- ❑ Click on the below link to get excel file and get all analysis in depth.

https://docs.google.com/spreadsheets/d/1XxyUGgR5dpzqjcWBNqeRTk3fBCowYm/edit?usp=drive_link&ouid=105000439991683267564&rtpof=true&sd=true

The image is a composite. The background is a night cityscape with several tall skyscrapers. One building in the center has a section wrapped in white scaffolding. A bright street lamp is visible on the left. A curved, semi-circular inset is positioned in the middle of the image. Inside this inset, a dark-colored car is shown from a rear-three-quarter view, moving away from the viewer. The car's taillights are illuminated, and there are vibrant, multi-colored light trails (red, yellow, blue) trailing behind it, suggesting motion. The text "Thank you" is centered over the middle of the image, in a white, sans-serif font.

Thank you