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.
In this project we try to understand How can a car manufacturer optimize pricing and product development decisions to maximize profitability while meeting consumer demand?

Approach

This problem could be approached by analyzing 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.
By using data analysis techniques such as regression analysis and market segmentation, the manufacturer could develop a pricing strategy that balances consumer demand with profitability, and identify which product features to focus on in future product development efforts.
This could help the manufacturer improve its competitiveness in the market and increase its profitability over time.

Tech-Stack Used

Microsoft Excel 2019 was used to make this project.

Insights

Handling missing Values : To deal with missing values I used COUNTBLANK()/COUNT() *100 formula to calculate the missing data percentage and I replaced the missing numeric data with median values of the respective column.

Analysing data :
Used the Engine Type variable to analyse the data with the help of pivot tables. Analysed the Engine Type variable against Engine HP ,MSRP ,City mpg , Popularity to find the relationship between them.
We found that flex-fuel (premium unleaded required/E85) engine type had the highest MSRP and flex-fuel (unleaded/E85) had highest popularity.

Used the Vehicle Size variable to analyse the data with the help of pivot tables. Analysed the Vehicle Size variable against Engine HP ,MSRP ,City mpg , Popularity to find the relationship between them.
We found that Large Vehicle size had the highest MSRP and highest popularity.

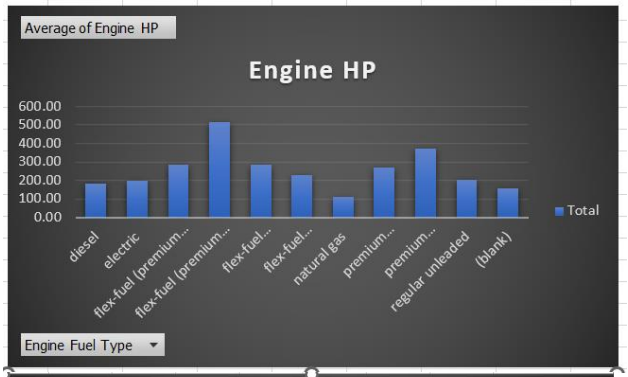
Used the Vehicle Type variable to analyse the data with the help of pivot tables. Analysed the Vehicle Type variable against MSRP ,City mpg , Popularity to find the relationship between them.
We found that Convertible Vehicle Type had the highest MSRP and Passenger had highest popularity.

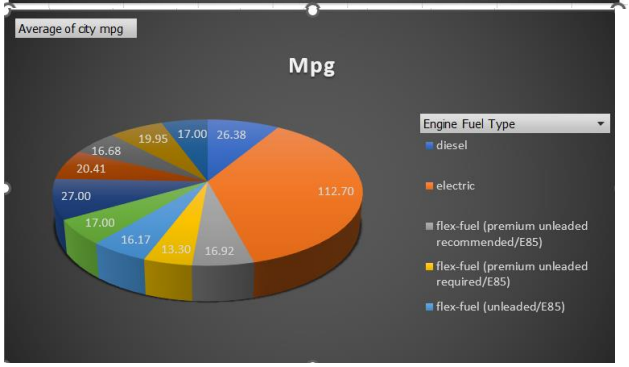
Used the Make and Model variable to analyse the data with the help of pivot tables. Analysed the Engine Type variable against MSRP ,City mpg , Popularity to find the relationship between them.
We found that Bugatti had the highest MSRP and Ford had highest popularity.

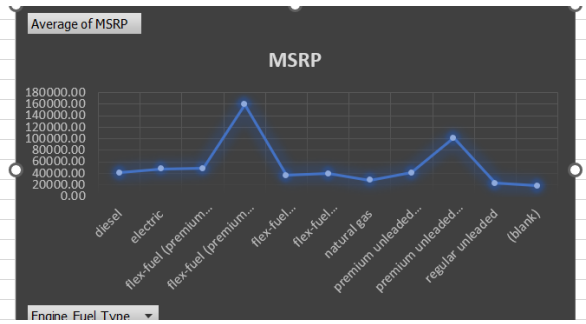
Used Market Category column to find that Hybrid Vehicles were most popular among the people and Exotic Vehicles had highest MSRP.

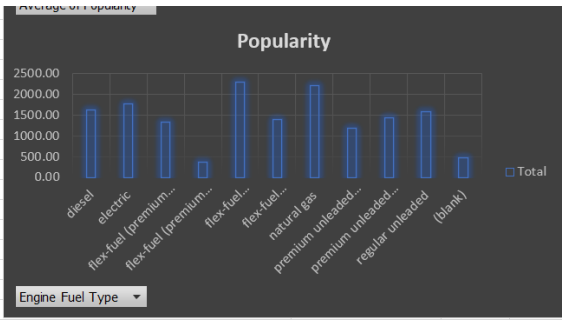
Result

Engine Fuel Type

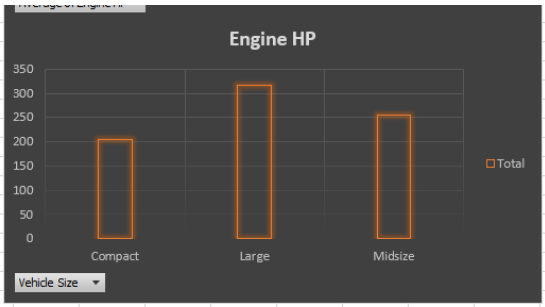


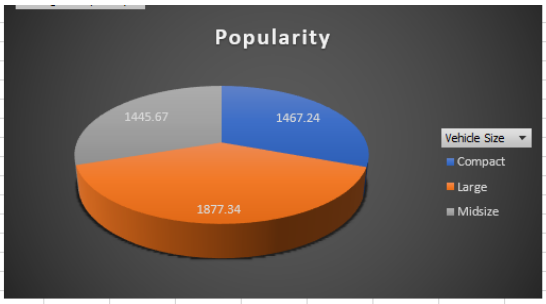


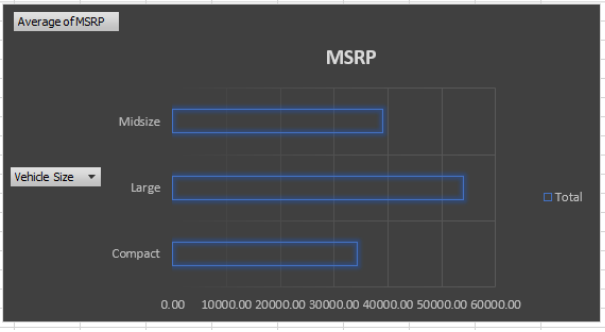


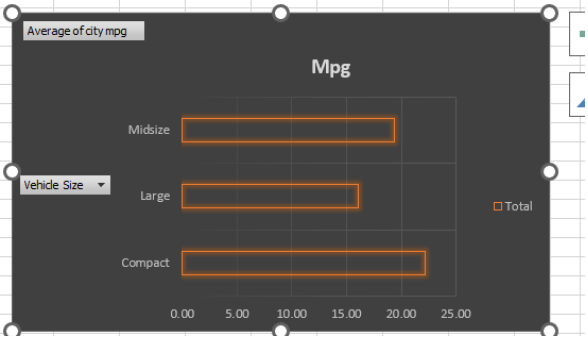


Vehicle Size

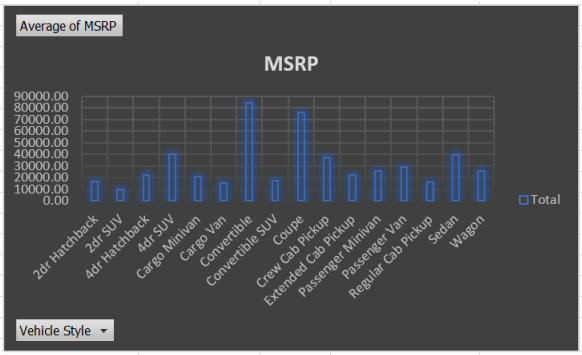


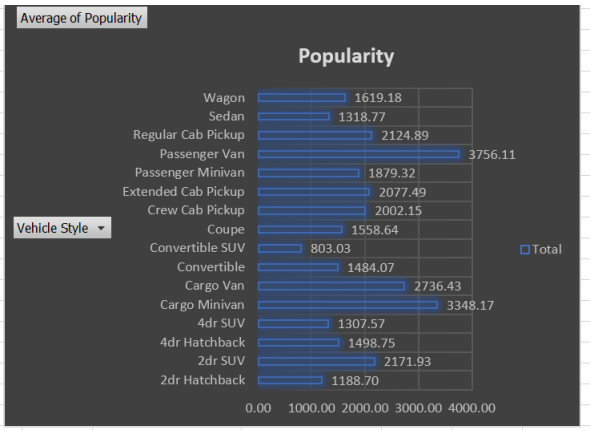


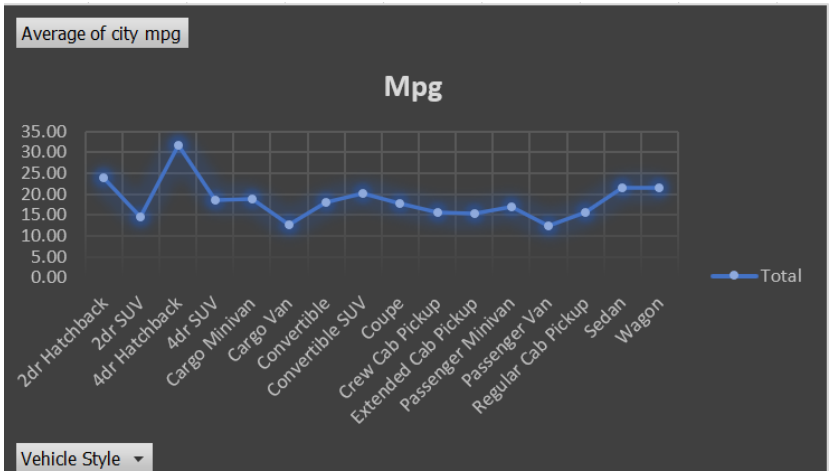


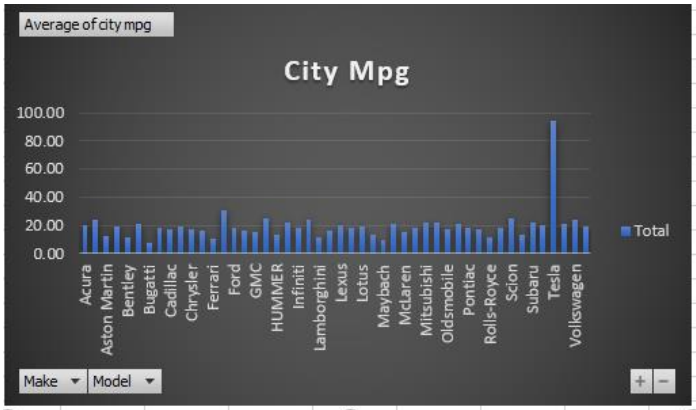


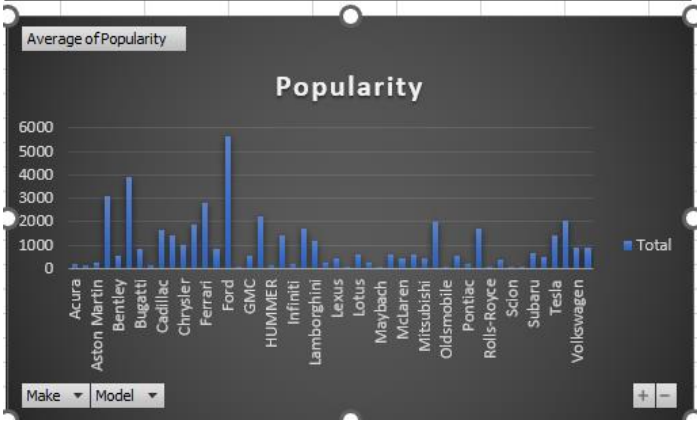
Vehicle Style



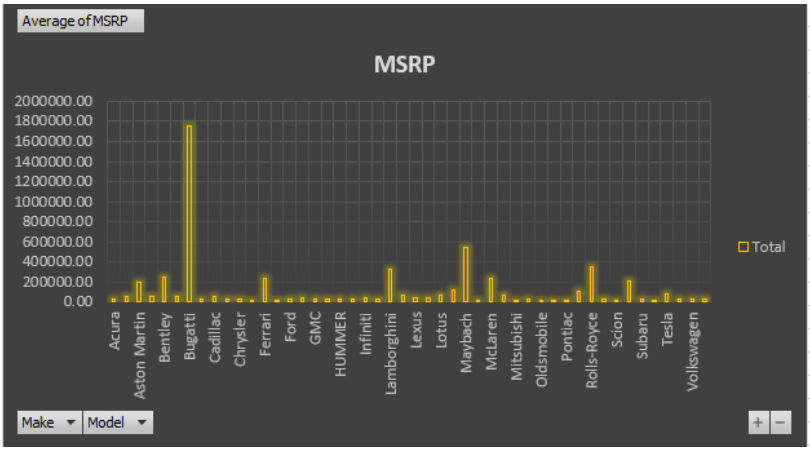








Make Model



Market Category