Applied Data Science:
Assignment 2: Statistics and trends

Submitted by:

Name: **Arsalan Khan**

Student No: 21090443

Submitted to:

Ralf Napiwotzki

Subject: Applied Data Science

University of Hertfordshire

# Physics, Astronomy and Mathematics (PAM)

(College Lane Campus)

Abstract:

In this assignment I have created statistics and trends of UK market of used/running vehicles by analyzing, correlation, heatmap and plotting the data according to the given procedure. In the 1st graph I have analyzed and shown the in Barplot between FuelType and Transmission between companies. 2nd is the Heatmap correlation between the companies values, whereas the rest depicts the price of cars over the years according to mileage, fueltype and engine size accordingly.

UK Used Cars Market Analysis: Statistics and trends

For this analysis 9 companies from UK were selected from UK used cars Market Data and the interrelations of the following factors were investigated: Mileage, Price and Transmission Type, Fuel Type, Engine Size with respect to year accordingly

By analysis, I have found some correlations between the factors :
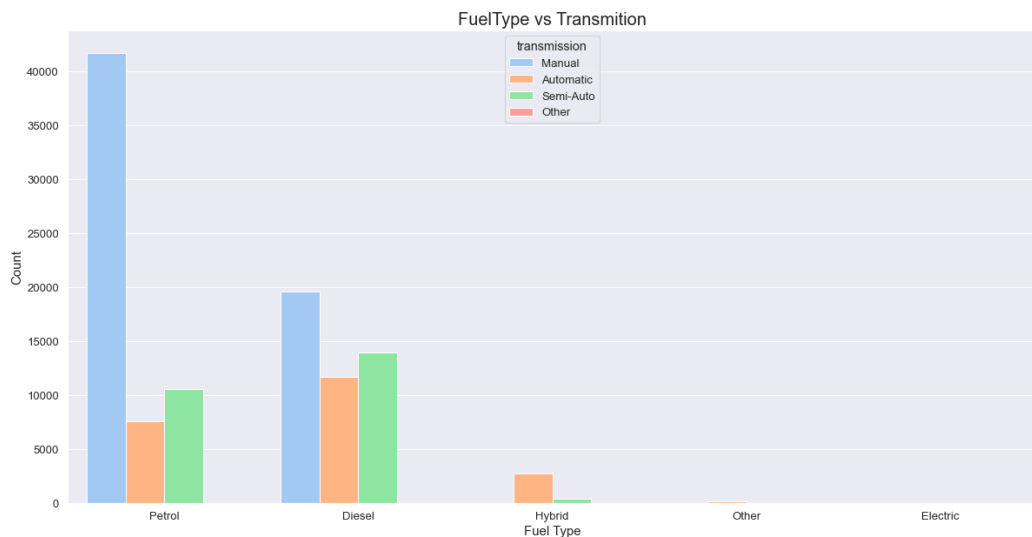
The bar graph above shows count of Cars accordingly with Fuel Type Vs Transmission between the 9 companies constructed with available data from the year 2005 to 2019. Manual cars were largely produced in this period with fuel consumption as Petrol as this shows an upward trend in Production in all car companies as analyzed and shown in the above. Similarly, after Petrol vehicles are Diesel vehicles and then hybrid according to the data. Electric and other vehicles production is minimal in this period.
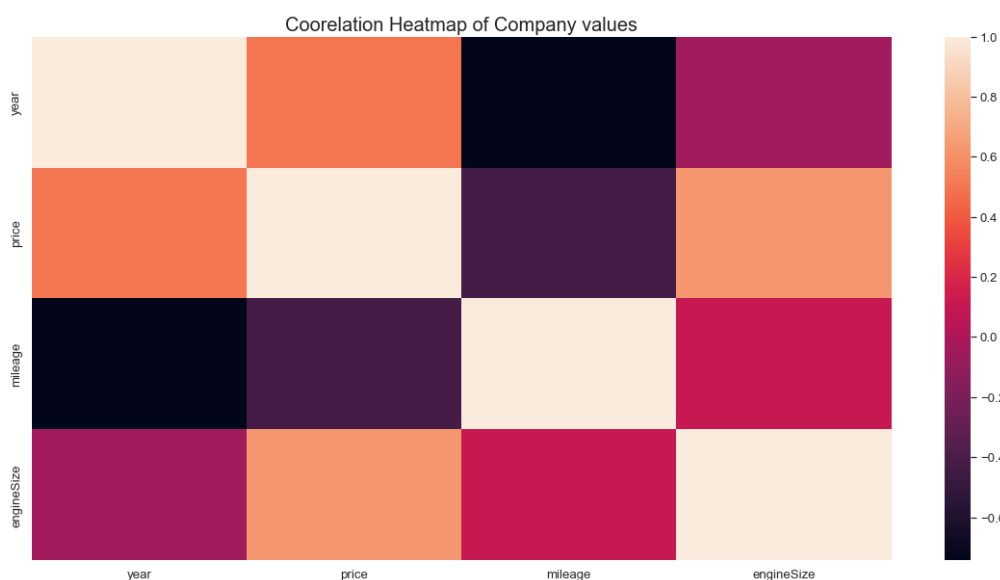

The following heatmap from the correlation from the companies Data depicts all the values from Car companies which shows that vehicle prices are correlated to Fuel type, mileage and Engine Size. Whereas, mileage does not effect the year and vice versa.

Companies Price Comparison
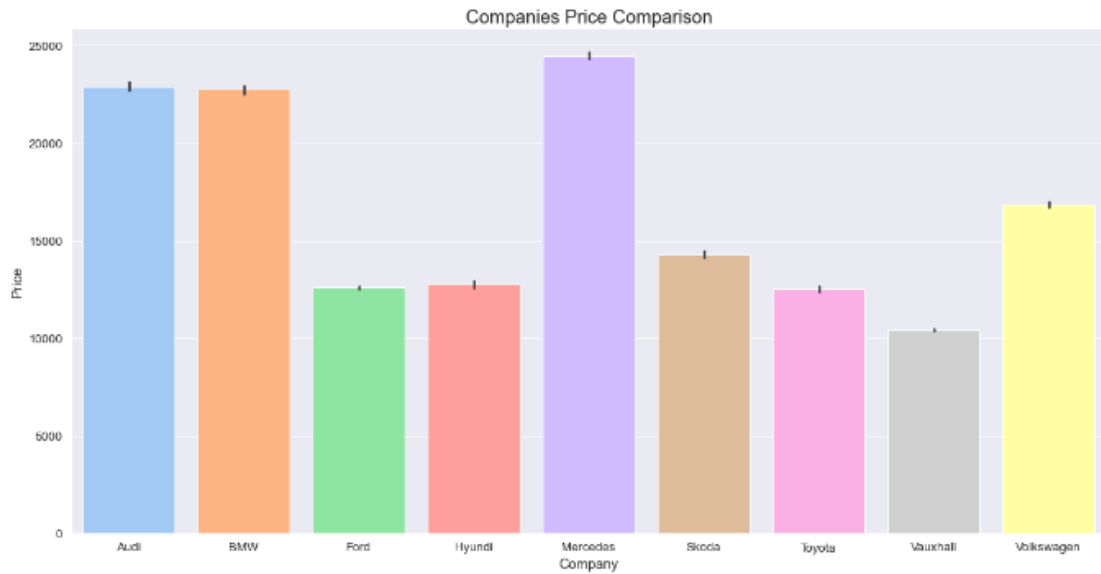
Mercedes vehicles has the highest prices and Audi, and BMW has the second highest prices in automobiles, whereas Vauxhall has the lowest pricing, and ford, Hyundai, and Toyota have relatively midrange prices.

Yearly Price Comparison of Companies
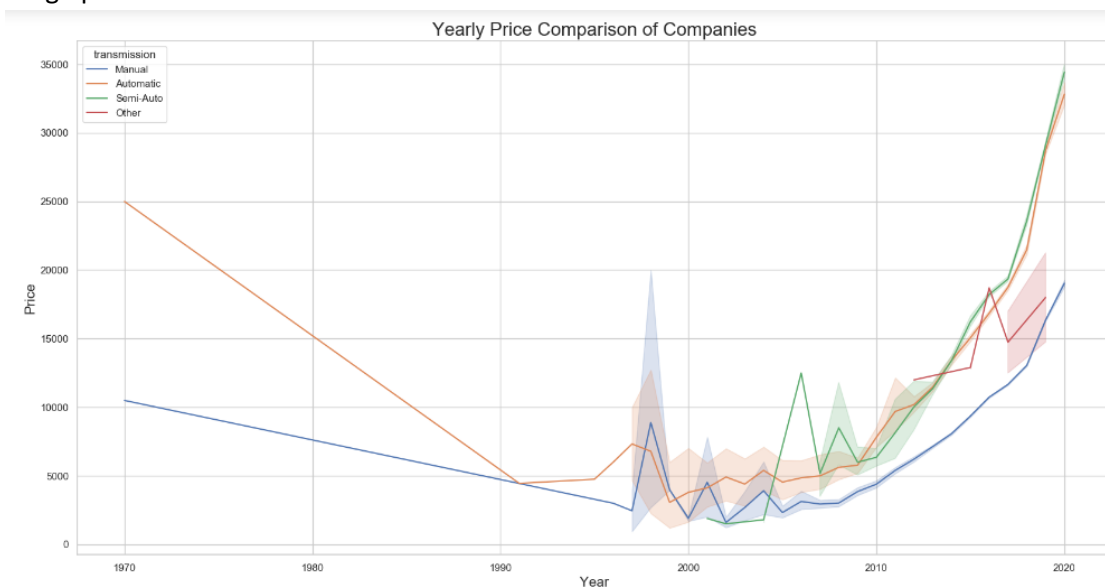
This line chart depicts the price of all car transmissions over the years (year). It's miles apparent that near the notion of the past century, the cost of all vehicles decreased, and there can be no indication of semi-automatic cars within Last 2 Decades. Semi-automatic technology debuts at the turn of this century. it additionally suggests that the costs of all styles of vehicles have risen over the state-of-the-art decade, from 2010 to 2020, specially for automated and semi-automatic automobiles.
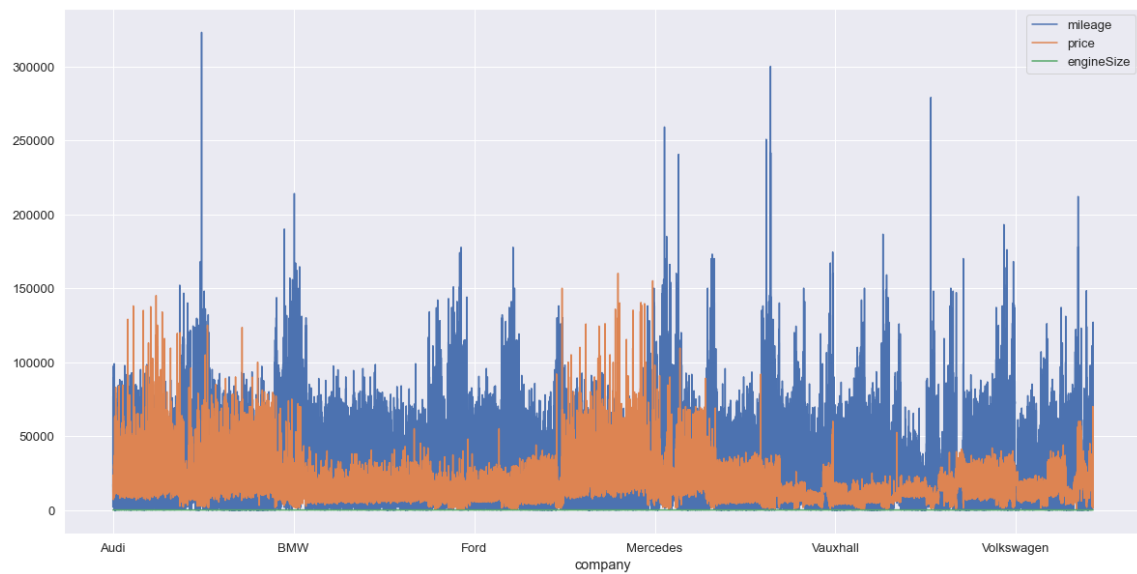
The graph shows Vehicles Prices, Mileage and. Engine Sizes according to the companies with biggest mileage given by Audi and smallest mileage given by Ford accordingly as shown in the above figure and Respectively, highest priced vehicles from Mercedes and lowest priced vehicles form Vauxhall.

DataSet Taken From:
United Kingdom Used Car Market Share, Value, Growth 2022 - 27 (mordorintelligence.com)

Github:
https://github.com/arsal575/ADS1-Assignment2