



AUTOMOBILE SALES ANALYSIS

Presentation by: Emily Fagan
Last Updated: November 6th, 2023



03. OBJECTIVE

04. TASK 1

06. TASK 2

08. TASK 3

10. TASK 4

11. TASK 5

13. TASK 6

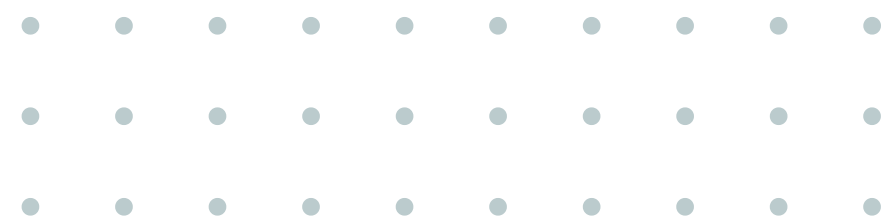
14. TASK 7

15. TASK 8

17. CONCLUSION



TABLE OF CONTENTS



03.

OBJECTIVE

The objective of this data analysis portfolio project is to leverage raw data on various car specifications to provide recommendations to potential car buyers.

This project will showcase my data analysis and visualization skills, as well as my ability to draw meaningful conclusions and offer practical recommendations based on data.

[Raw Data](#)

[Read More](#)

04. TASK 1

Identify the top 10 cars with the highest miles per gallon.

Car	Average City KmL
E2O Plus	80
Ciaz	26.6725
Kwid	25.17
Tigor	24.12
Tiago	23.84
S-Cross	23.65
Nano Genx	23.6
Baleno	23.24307692
Celerio	23
Celerio Tour	23
Celerio X	23
Grand Total	25.51026316

I first used a pivot table to order the 10 cars in descending order by km per litre.

I noticed that the E2O Plus was extremely high in km/litre, so I took another look at the dataset.

I discovered that the E2O Plus is an electric vehicle. It is also an outlier, so I decided to remove all electric vehicles from my pivot table filtering.

Next slide shows result.

05. TASK 1



Identify the top 10 cars with the highest miles per gallon.

Rank	Car	Average km/litre	Average mi/gal
1	Suzuki Ciaz	26.67	62.73
2	Renault Kwid	25.17	59.20
3	Tata Tigor	24.12	56.73
4	Tata Tiago	23.84	56.07
5	Suzuki S-Cross	23.65	55.62
6	Tata Nano Genx	23.60	55.51
7	Suzuki Baleno	23.24	54.67
8	Suzuki Celerio	23.00	54.10
9	Suzuki Celerio Tour	23.00	54.10
10	Suzuki Celerio X	23.00	54.10

Excluding electric vehicles, these were the ten cars with the highest miles per gallon. The winner being the Suzuki Ciaz pictured above.

06. TASK 2

Identify the top 10 cars with the highest miles per gallon based on displacement.

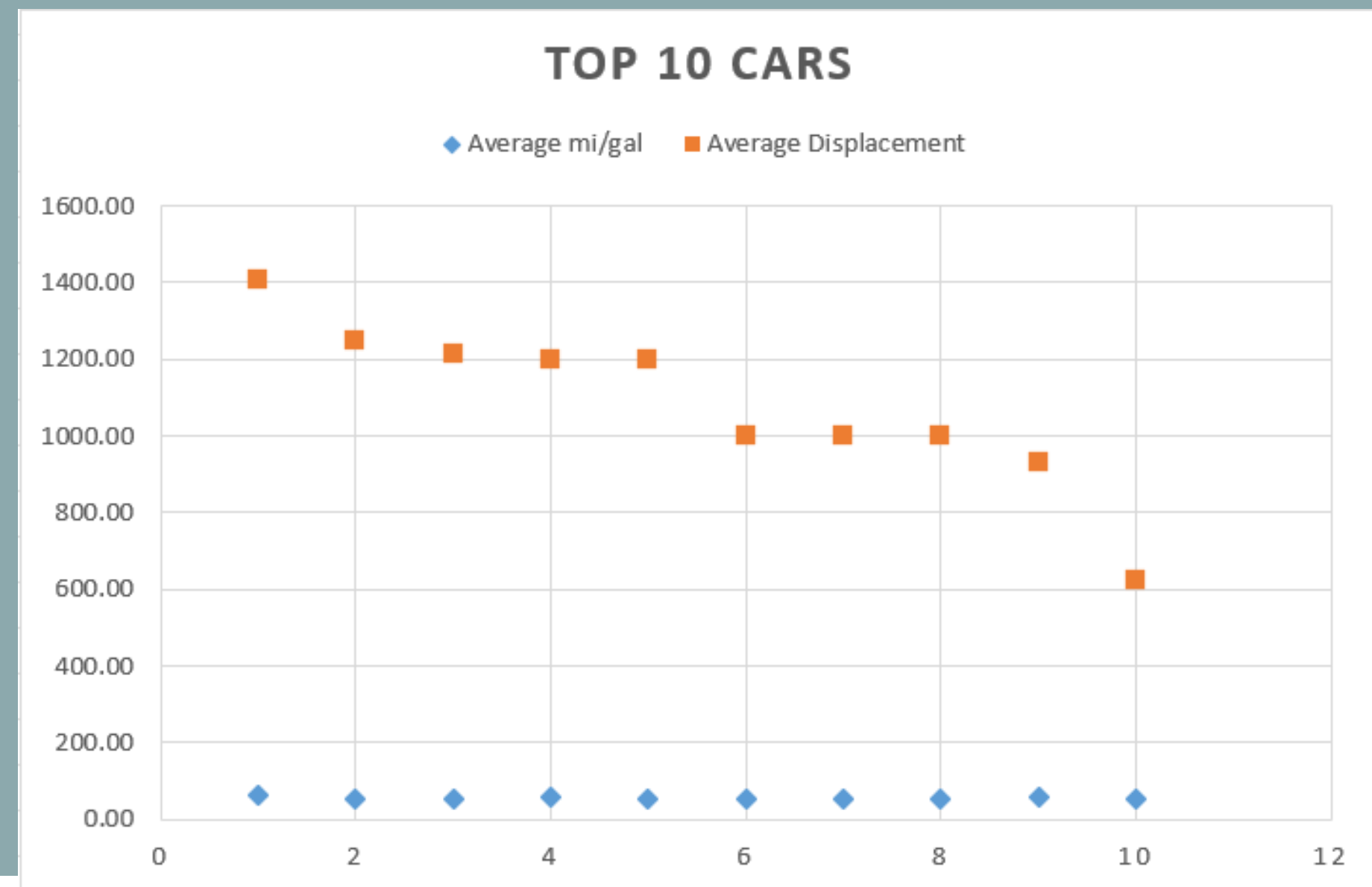
I took the list of top 10 cars from the first task and reordered them based on displacement.

Rank	Car	Average mi/gal	Average Displacement
1	Suzuki Ciaz	62.73	1408.57
2	Suzuki S-Cross	55.62	1248.00
3	Suzuki Baleno	54.67	1212.69
4	Tata Tigor	56.73	1199.00
5	Tata Tiago	56.07	1199.00
6	Suzuki Celerio	54.10	998.00
7	Suzuki Celerio Tour	54.10	998.00
8	Suzuki Celerio X	54.10	998.00
9	Renault Kwid	59.20	932.33
10	Tata Nano Genx	55.51	624.00

07. TASK 2

Identify the top 10 cars with the highest miles per gallon based on displacement.

I then created a scatter plot to demonstrate the relationship between average displacement and average mi/gal.



08. TASK 3

Identify the top 3 manufacturers with the highest number of cars of the hatchback body type.

Body_Type	Hatchback	
Row Labels	Count of Body_Type	
Suzuki	96	
Hyundai	46	
Tata	36	
Mahindra	27	
Toyota	25	
Renault	12	
Ford	11	
Volkswagen	10	
Grand Total	263	

First, I created a pivot table filter to only count hatchbacks.

Then I added a count of hatchbacks for each manufacturer.

I then created a bar chart representing the top 3 manufacturers. (Shown on next slide)

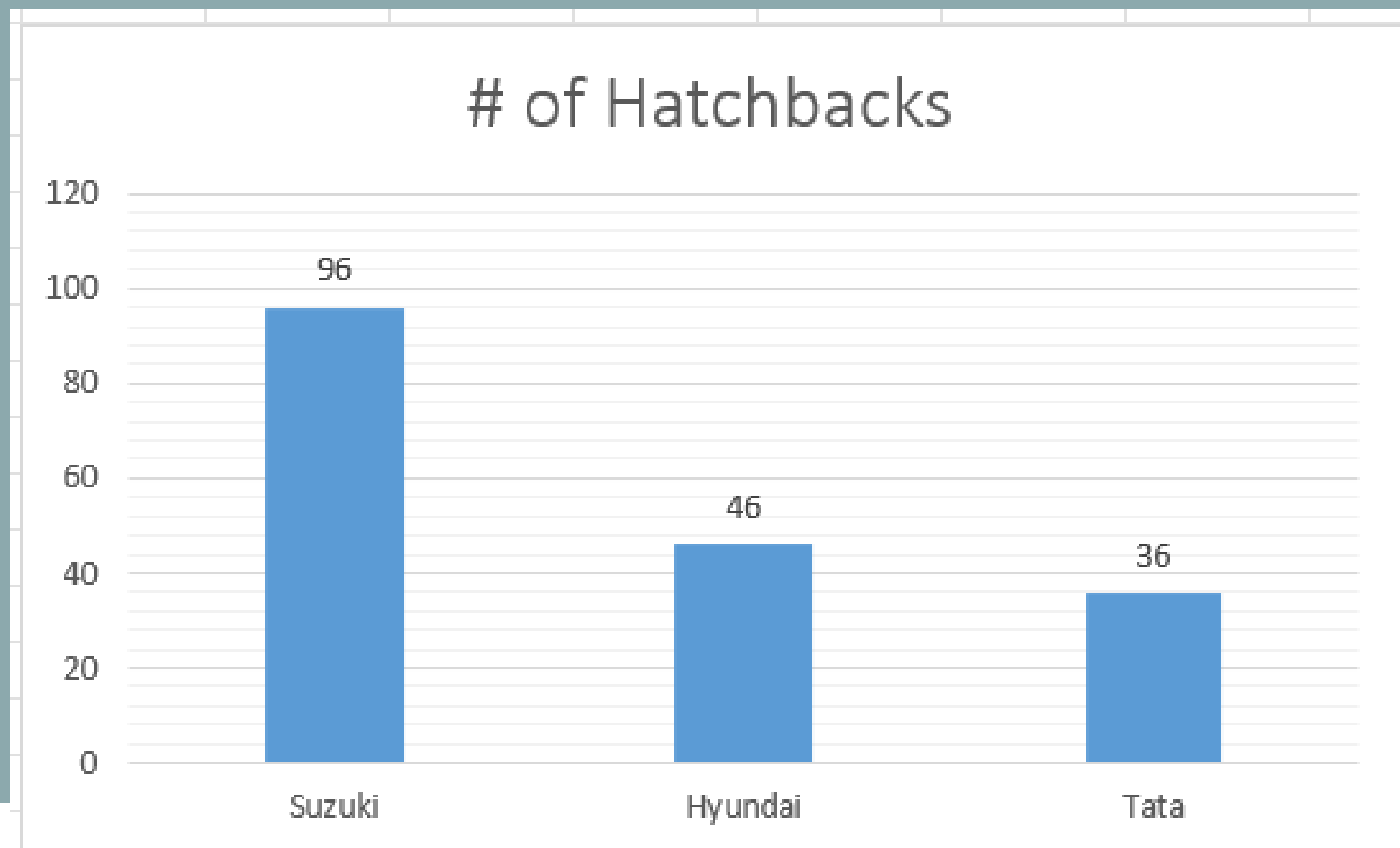
09. TASK 3

Identify the top 3 manufacturers with the highest number of cars of the hatchback body type.

Suzuki has the most hatchbacks with a total of 96,

Hyundai is second with 46,

Tata is third with 36.



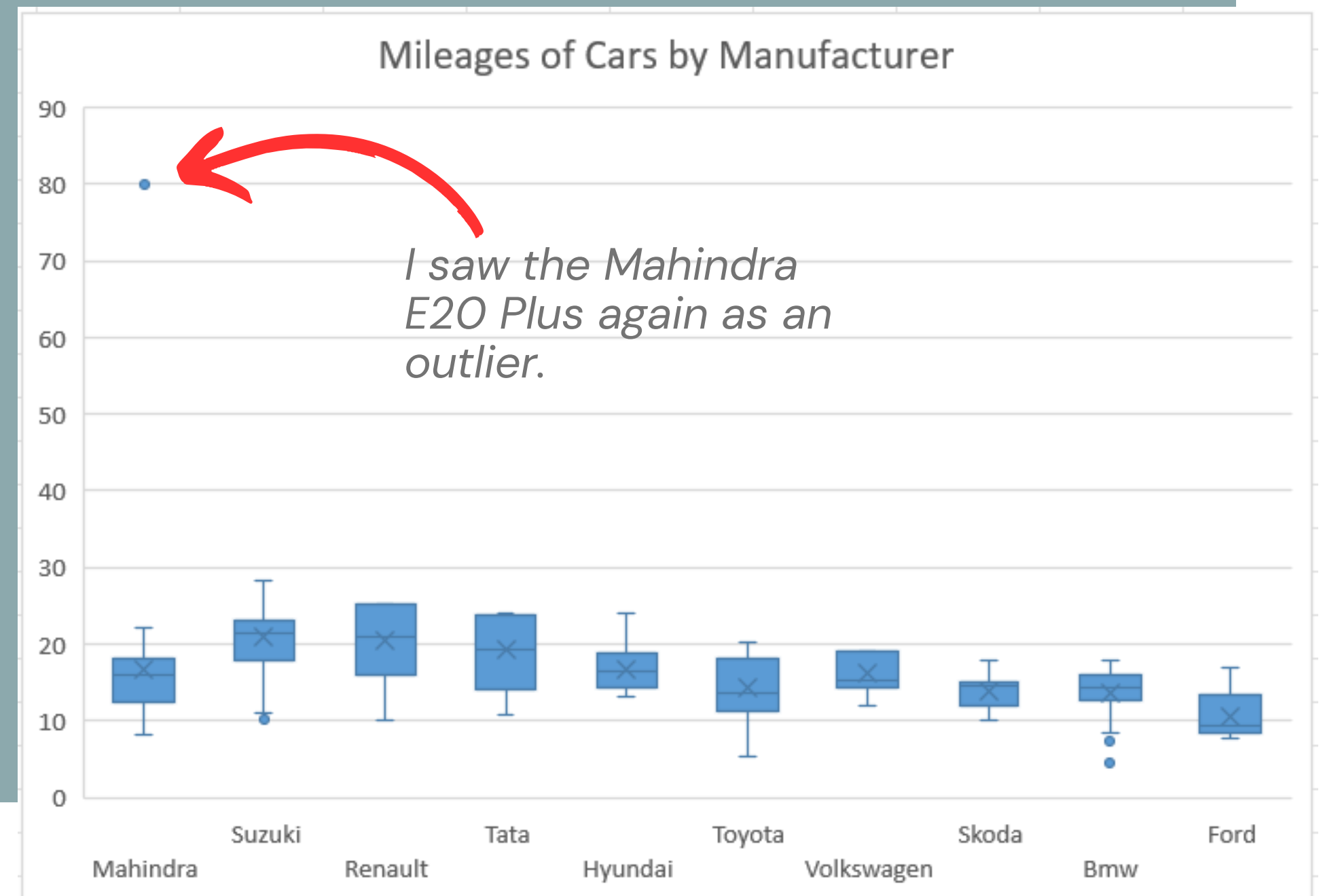
10. TASK 4

Compare the mileages of cars produced by all manufacturers and perform outlier analysis.

I made a box and whisker plot displaying each manufacturer and their kilometer per litre.

I took note of the outliers displayed on the plot and made a chart displaying the cars that were outliers.

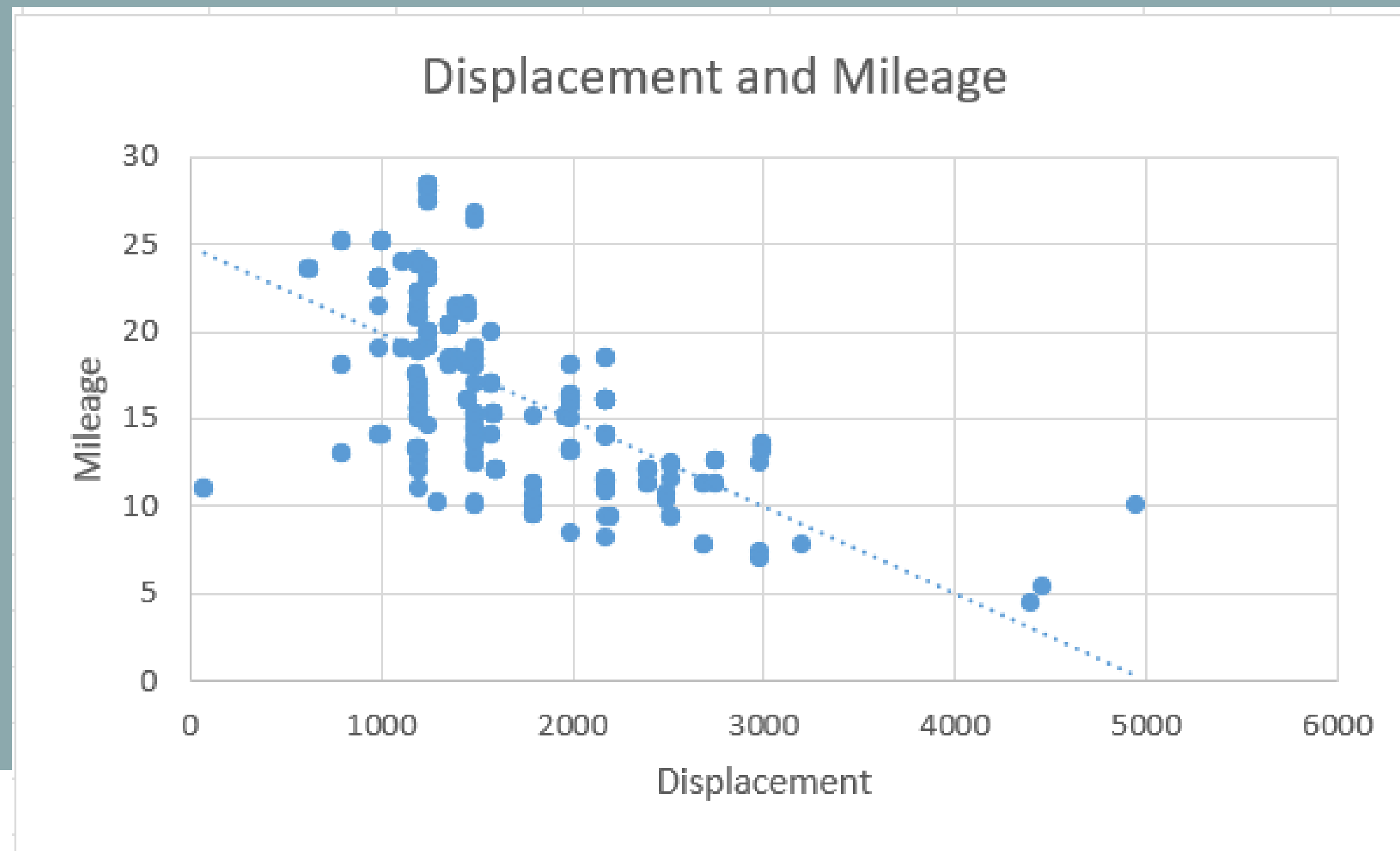
Manufacture	Outliers
Mahindra	E2O Plus
Suzuki	Gypsy
Renault	None
Tata	None
Hyundai	None
Toyota	None
Volkswagen	None
Skoda	None
BMW	M4 and 6-Series
Ford	None



11. TASK 5

Represent the relationship between displacement and mileage.

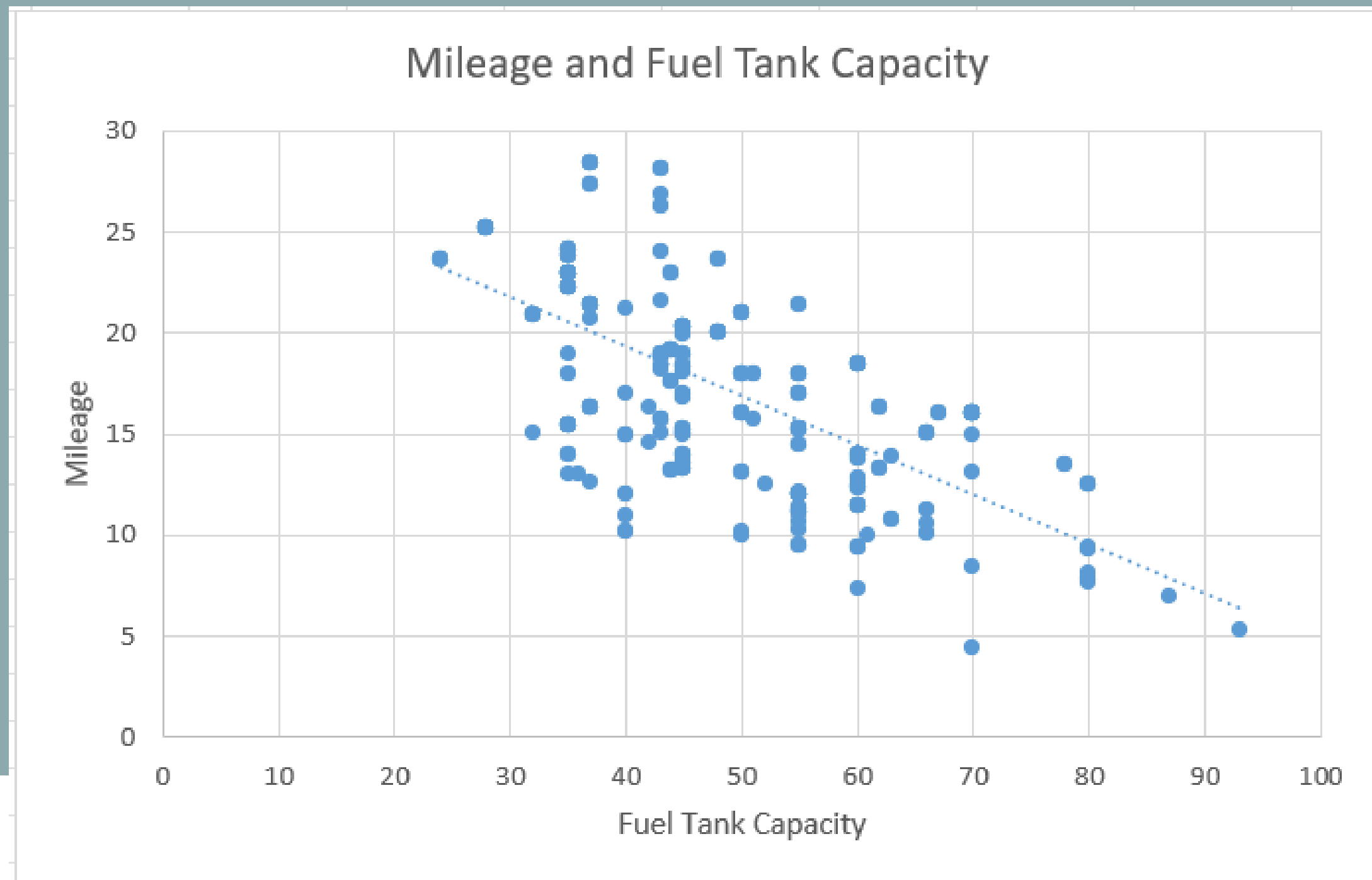
Displacement and mileage have an inverse relationship.



12. TASK 5

Represent the relationship between mileage and fuel tank capacity.

Mileage and fuel tank capacity have an inverse relationship.



13. TASK 6

Identify a car that would be best for adventurous drives.

For an adventurous driving experience, a 4WD (four-wheel drive) car is ideal due to its superior off-road capabilities and capacity for carrying heavy loads.

Diesel provides more energy by volume in comparison to petrol.

Greater displacement signifies more power.

- *Filtered data to show only 4WD drivetrain*
- *Filtered data to show only diesel fuel type*
- *Sorted the results by descending displacement*

*As a result, the **Toyota Land Cruiser Prado VxL** emerged as the top choice for adventurous drives.*



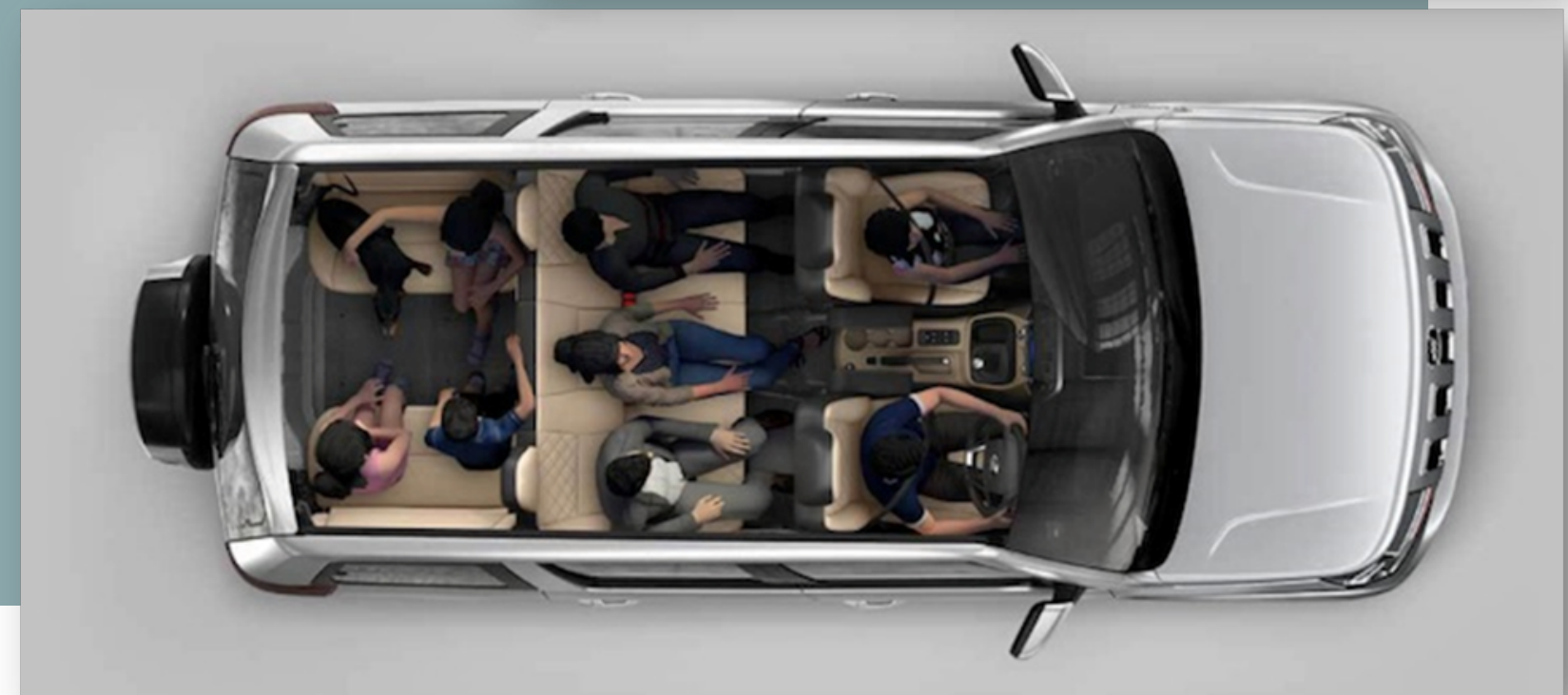
14. TASK 7

Identify a car that would be suitable for family usage.

A car suitable for family usage would include a high passenger capacity, DVD player, child safety locks, and low gas mileage.

- *Sorted data in descending order by seating capacity*
- *Sorted data in ascending order by gas mileage*
- *Removed blanks from DVD player and child safety locks*

*As a result, the **Mahindra TUV300 Plus** emerged as the top choice for families. Picture is shown of seating capacity. It is able to seat 9 people and gas mileage is 44 miles per gallon.*



15. TASK 8

Identify the potential competitor cars for long distance travel.

To find potential competitors for long distance travel, I sorted by dataset by highway mileage in descending order.

I picked the top three of my dataset:

Mahindra KUV100 NXT



Tata Altroz



Suzuki Vitara Brezza



16. TASK 8

Identify the potential competitor cars for city usage.

To find potential competitors for city usage, I sorted by dataset by city mileage in descending order.

I picked the top three of my dataset:

Mahindra E20 Plus



Suzuki Dzire



Suzuki Ciaz



17. CONCLUSION

Task 1: The top 10 cars with the highest mpg fall under the manufacturers Suzuki, Renault, and Tata.

Task 2: Higher displacement generally means higher average mpg.

Task 3: Suzuki has 96 hatchbacks, Hyundai has 46, and Tata has 36.

Task 4: The outliers of average mpg per manufacturer are the Mahindra E20 Plus, Suzuki Gypsy, and BMW M4 and 6-Series.

Task 5: There is an inverse relationship between displacement and mileage, and mileage and fuel tank capacity.

Task 6: Adventurous drives would call for the Toyota Land Cruiser Prado VxL.

Task 7: The best family car is the Mahindra TUV300 Plus.

Task 8: The top three competitor cars for city usage would be the Mahindra E20 Plus, the Suzuki Dzire, and the Suzuki Ciaz. The top three competitors for long-distance travel would be the Mahindra KUV100 Nxt, Tata Altroz, and Suzuki Vitara Brezza.

