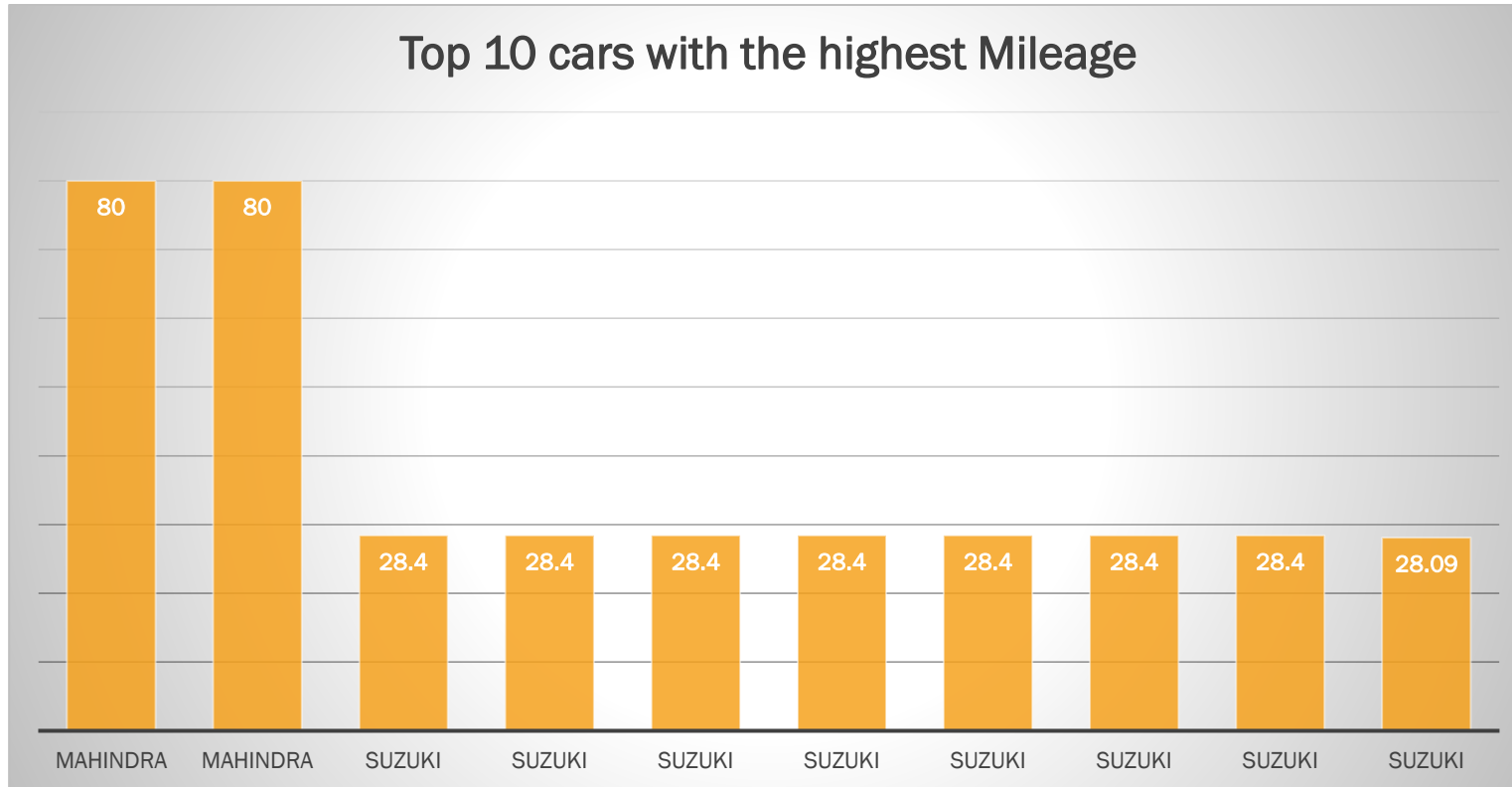




Data Analysis

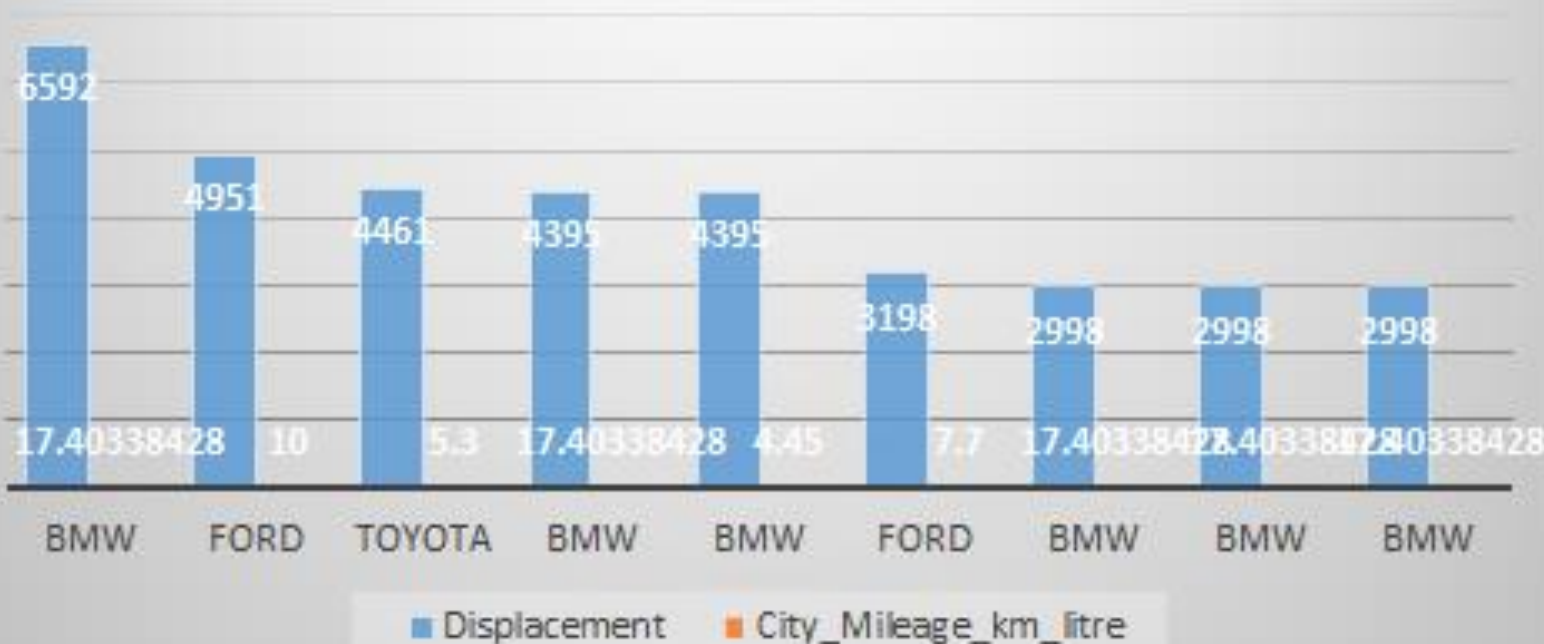
KALAIMANI MUTHU

Top 10 cars with the highest Mileage



- Mahindra dominates the top 10 list with two models achieving a remarkable mileage of 80 units. These models set a high benchmark for fuel efficiency, outperforming others significantly.
- Suzuki fills the remaining eight spots with models offering mileage around 28.4 units..

Top 10 Based on Displacement and Mileage



- BMW shows the highest engine displacement at 6592 units. Consistent mileage around 17.4 km/litre across different displacements
- Ford models exhibit diverse mileage ranging from 4.45 to 7.7 km/litre.
- Toyota has a low displacement (10 units) but achieves a high mileage of 5.3 km/litre.
- High displacement does not equate to better mileage. BMW balances high displacement with steady mileage efficiency.

Top 3 Manufacturers with Highest No of Hatchback Cars

Manufacturers	Body Type
Suzuki	96
Hyundai	46
Tata	36

Suzuki:

- Leading with the highest number of hatchbacks: 96 models.
- Dominates the hatchback market segment.

Hyundai:

- Second highest with 46 hatchback models.
- Strong presence in the hatchback category.

Tata:

- Third place with 36 hatchback models.
- Significant contribution to the hatchback market.

Mean Mileage:

Highest: Suzuki (21.06), Renault (20.55), Tata (19.23)

Lowest: Ford (10.66)

Interquartile Range (IQR):

Largest Variability: Renault (9.17), Tata (9.84)

Smallest Variability: Ford (0.7)

Outliers:

Notable outliers in BMW, Ford, Mahindra, and Suzuki.

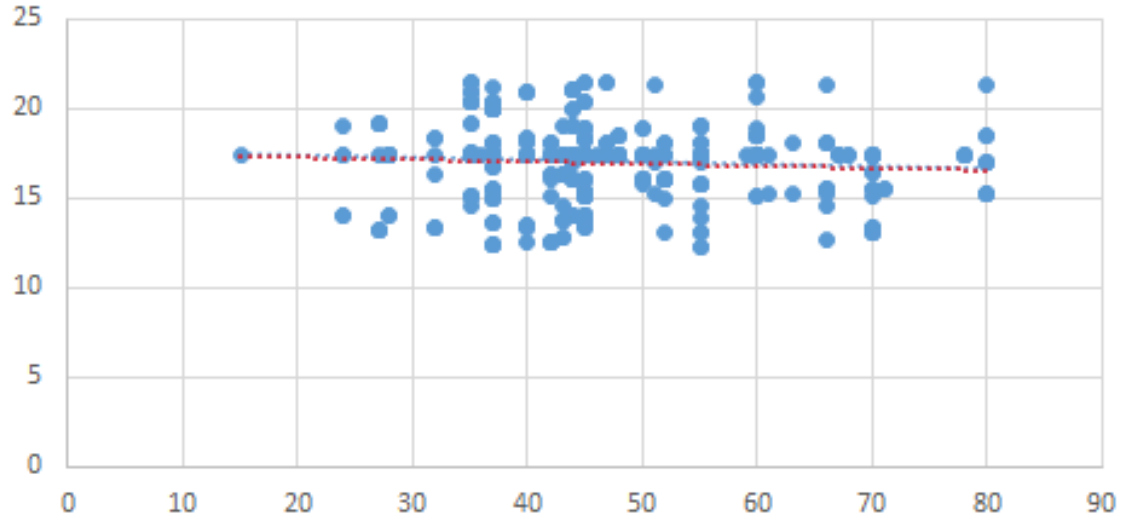
Mahindra has the highest upper outliers (80.0).

Standard Deviation (StdDev) & Variance (Var):

Highest StdDev: Mahindra (10.11), Renault (5.13), Suzuki (4.82)

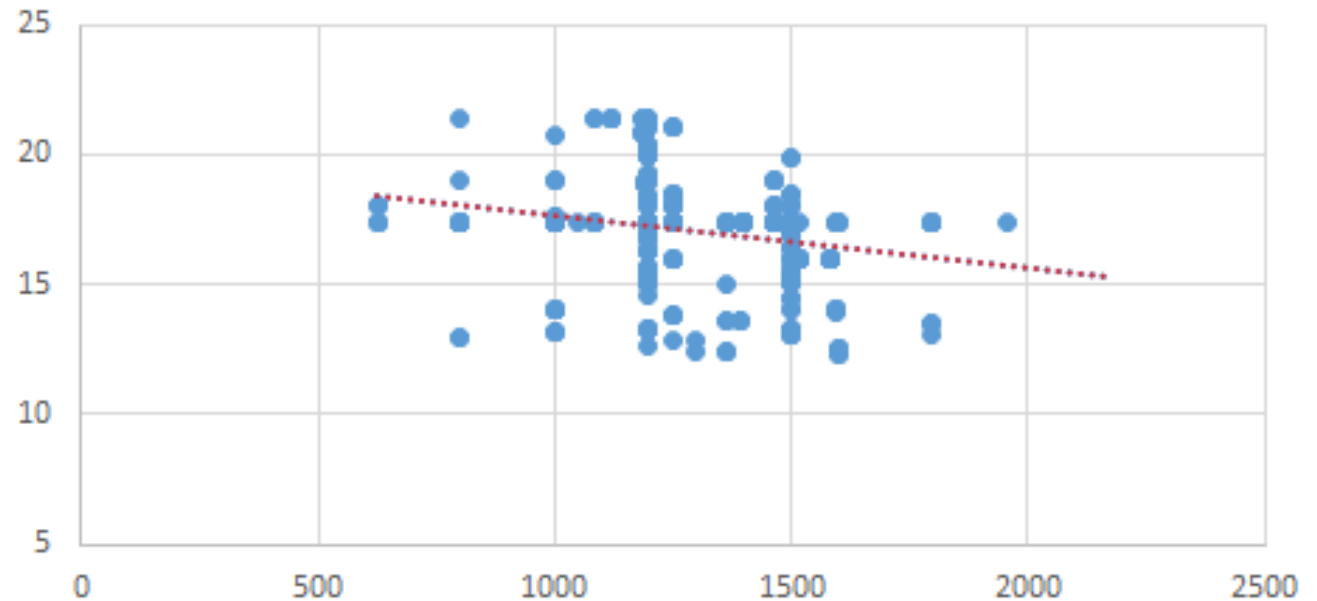
Lowest StdDev: Volkswagen (2.25)

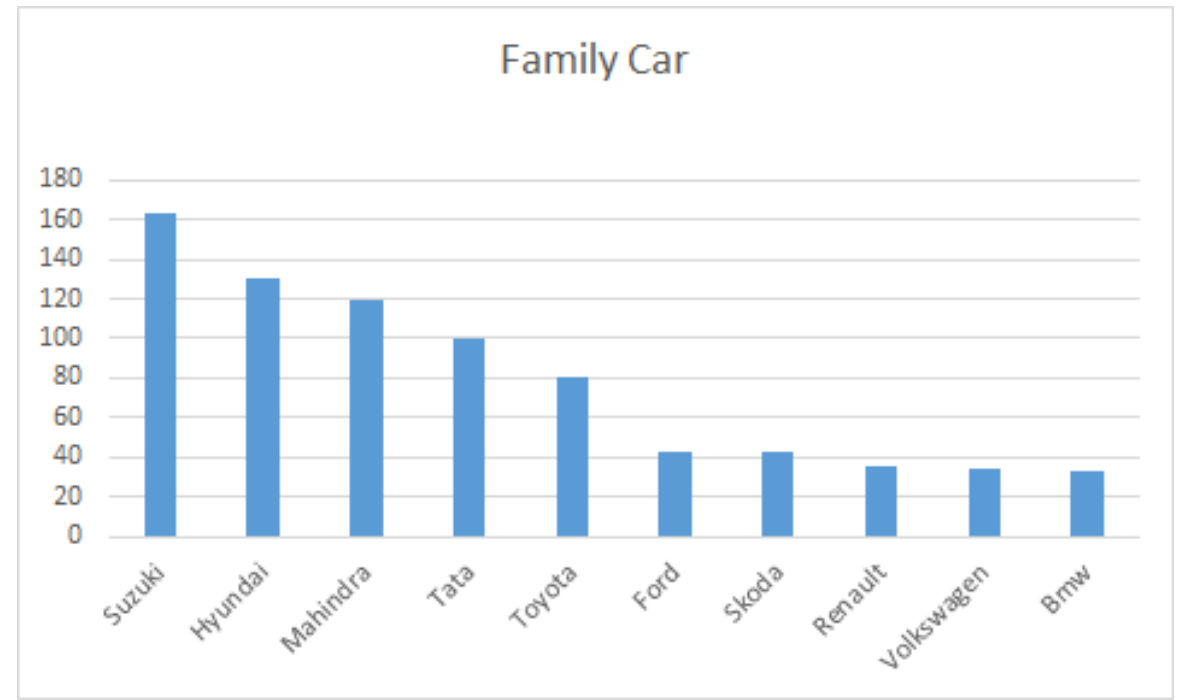
Relationship Between Fuel Tank and city mileage
without outlier



The analysis reveals that fuel tank capacity does not significantly affect city mileage. However, larger engine displacements are associated with a minor decrease in mileage. These insights help in understanding vehicle performance characteristics without outliers skewing the data.

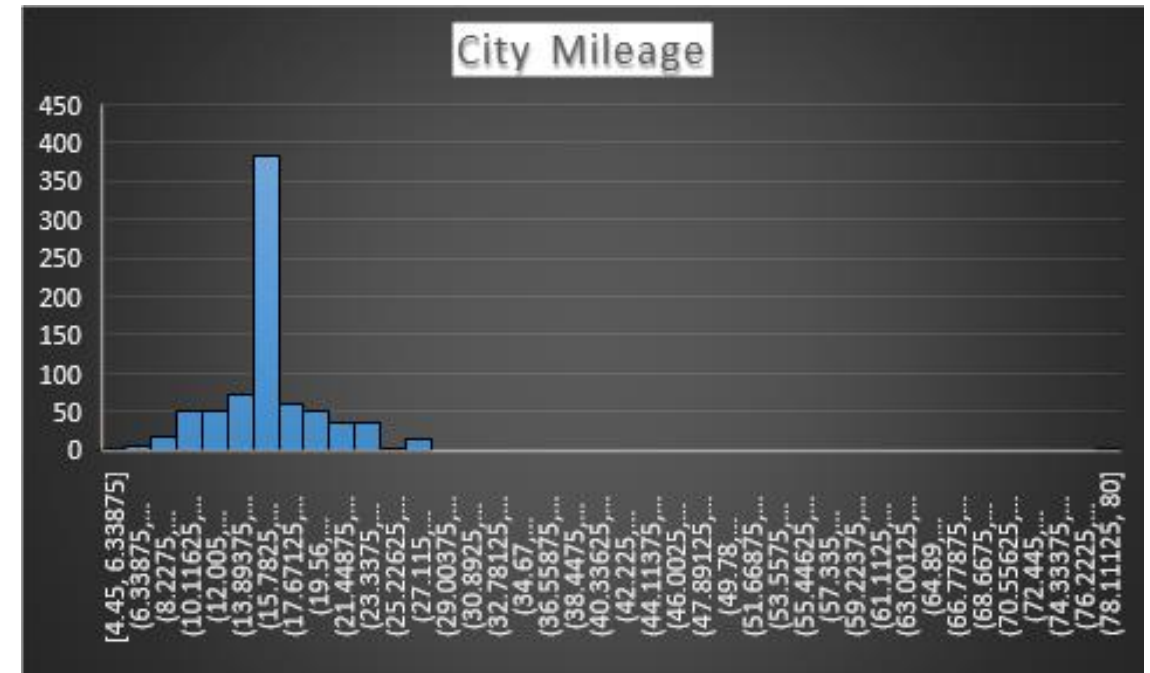
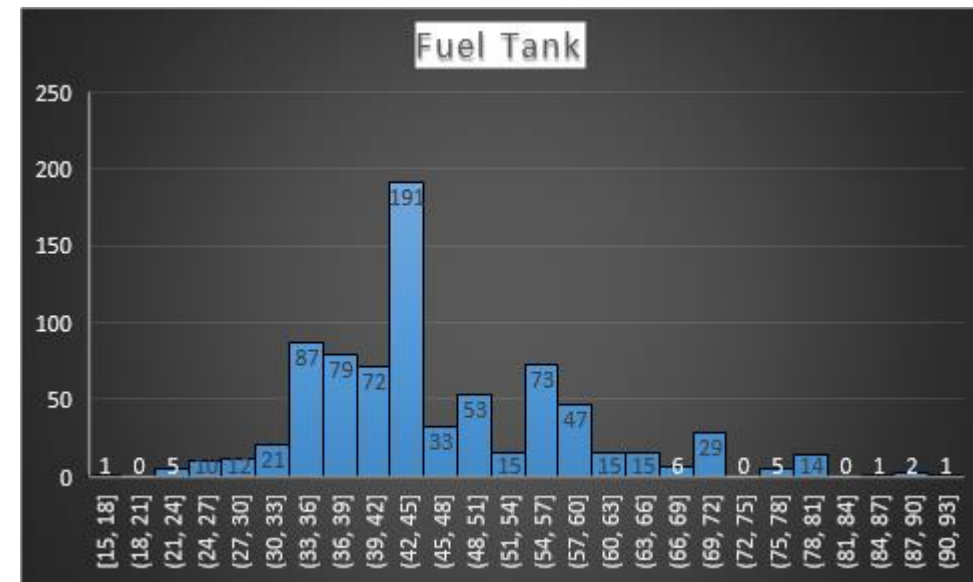
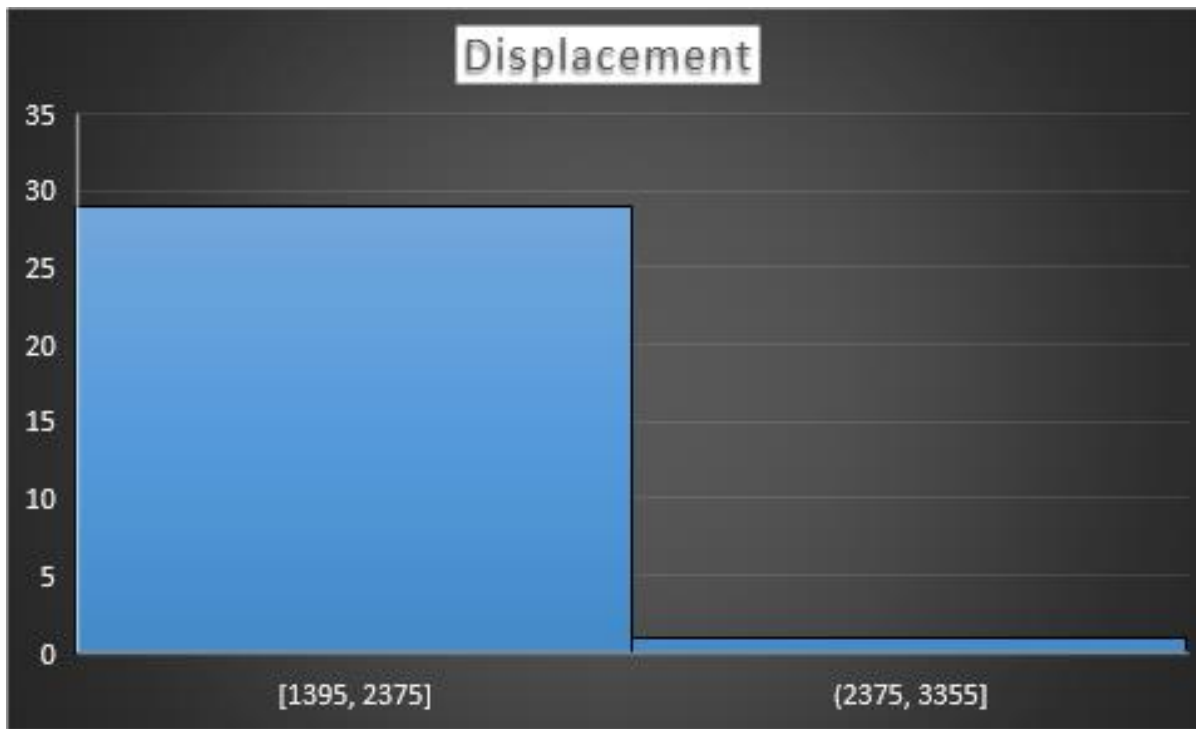
Displacement ~
Mileage Without outlier





Family Cars: Focus on top brands like Suzuki, Hyundai, and Mahindra for family-friendly features.

Adventure Cars: Prioritize the top-ranked adventure car for the best experience, with options available based on specific needs.



The analysis shows that most cars are optimized for city mileage around 17 km/litre, with a common fuel tank size of 42-45 liters. Engine displacement predominantly falls within 1395-2375 cc, highlighting a focus on moderate engine sizes.

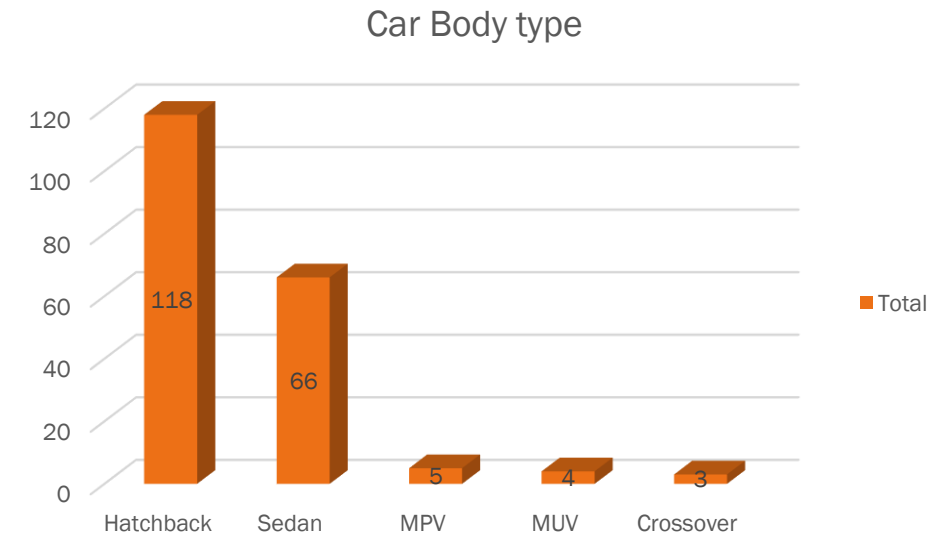
Analysis of Car Body Types by Manufacturer

Suzuki: Market leader for hatchbacks, ideal for consumers seeking compact, efficient cars.

Hyundai: Strong in both sedans and hatchbacks, appealing to a wide range of customer preferences.

Mahindra: Best choice for SUV enthusiasts, highlighting its strength in the rugged vehicle market.

Tata: Diverse offerings in hatchbacks and SUVs, catering to various consumer needs.



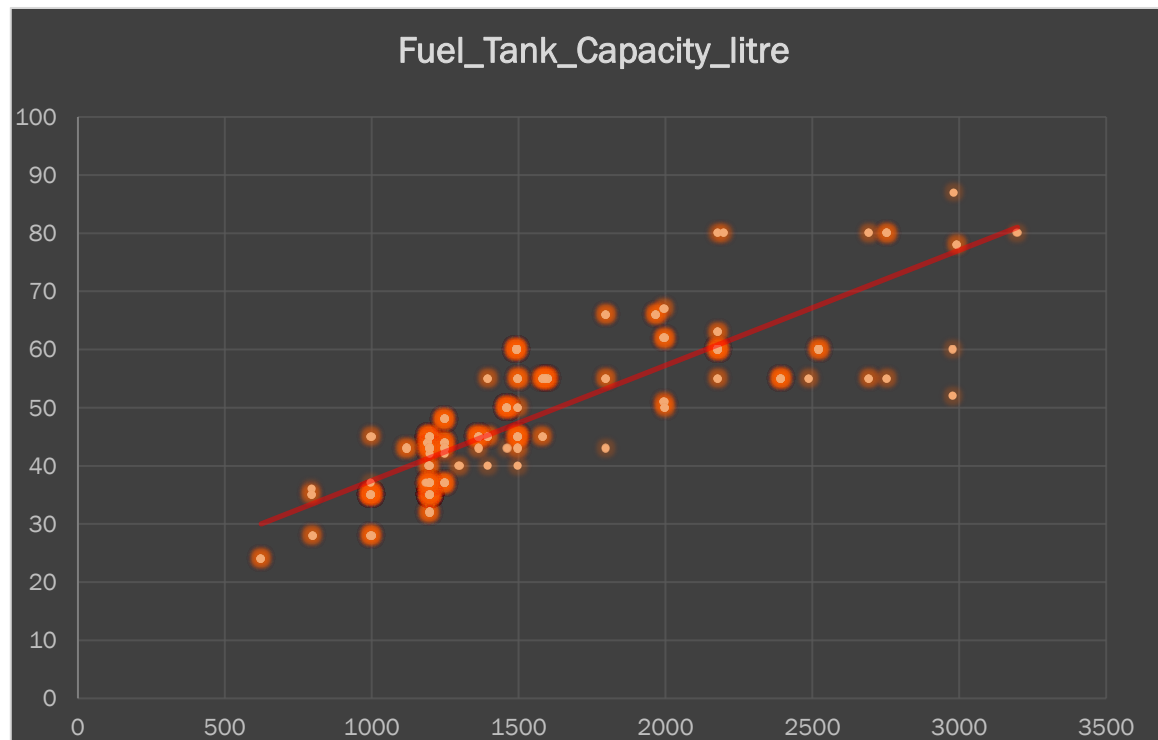
Car Model Distribution by Body Type for Hyundai and Suzuki

- **Suzuki** excels in the hatchback segment, reflecting a strong focus on compact cars.
- **Hyundai** shows a balanced distribution across hatchbacks, sedans, and SUVs, indicating a diverse product lineup.
- **Suzuki** also has a notable presence in MPV and MUV categories, adding to its portfolio diversity.

Manufacturer Offers The Widest Variation of City Mileage

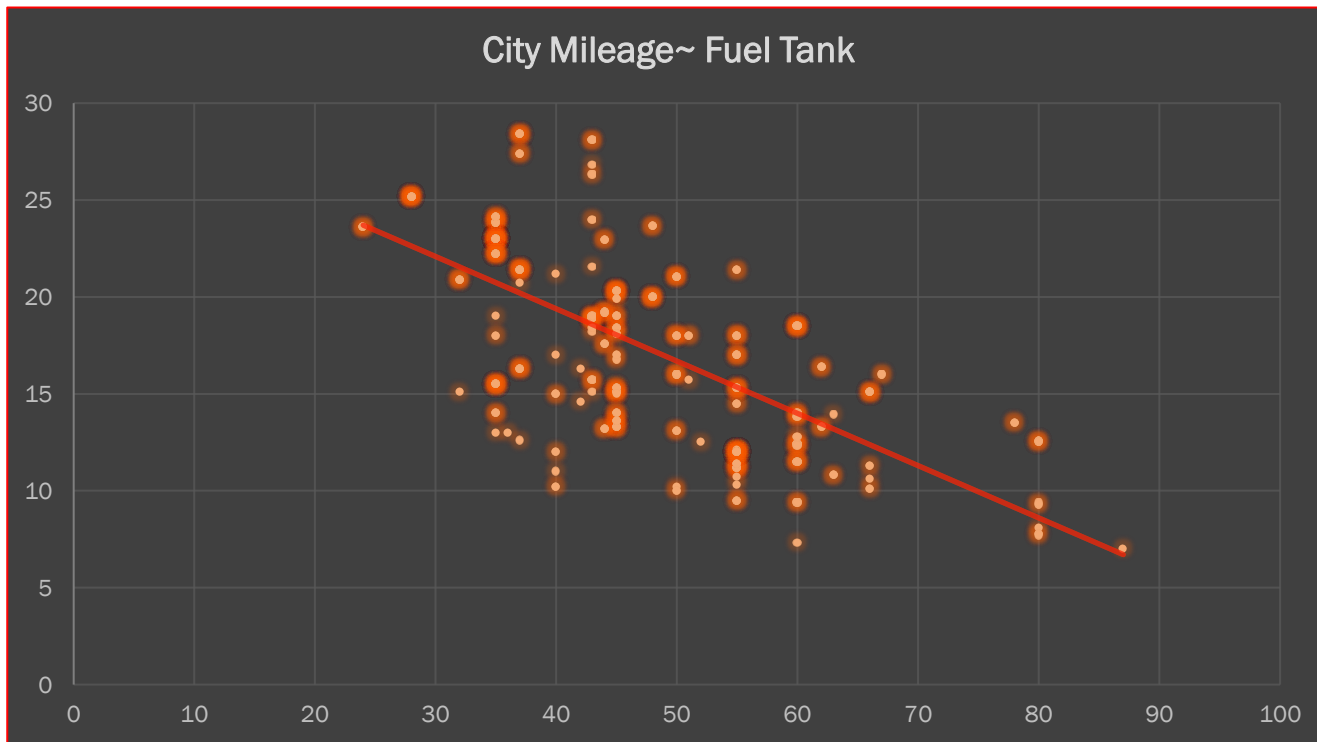
- **Hyundai:** Shows moderate dispersion with a mean mileage of 17.97 and a standard deviation of 2.27.
- Consistency in mileage with moderate dispersion suggests reliable performance.
- **Maruti Suzuki:** Exhibits the highest mean mileage at 24.62, with a moderate dispersion (standard deviation of 2.59).
- Highest average mileage indicates strong fuel efficiency; moderate variability ensures consistent performance.
- **Tata:** Demonstrates the greatest variability in mileage with the highest standard deviation of 4.69 and the largest range of 13.32.
- Wide range and high variability in mileage suggest a diverse portfolio with different performance levels.

Analysis of Fuel Tank Capacity and Displacement



- **Positive Correlation:** There is a clear positive correlation between fuel tank capacity and Displacement.
- **Trendline:** Indicates that as fuel tank capacity increases, the associated variable also increases.

Analysis of Fuel Tank Capacity and City Mileage



- Negative Correlation:** A clear negative correlation is observed between city mileage and fuel tank capacity.
- Trendline:** Indicates that as fuel tank capacity increases, city mileage decreases. Larger fuel tanks are associated with lower city mileage.

Key Vehicle Metrics

Fuel Tank Average Capacity: 47.34 litres

Average City Mileage: 17.12 km/litre

Average Highway Mileage: 18.65 km/litre

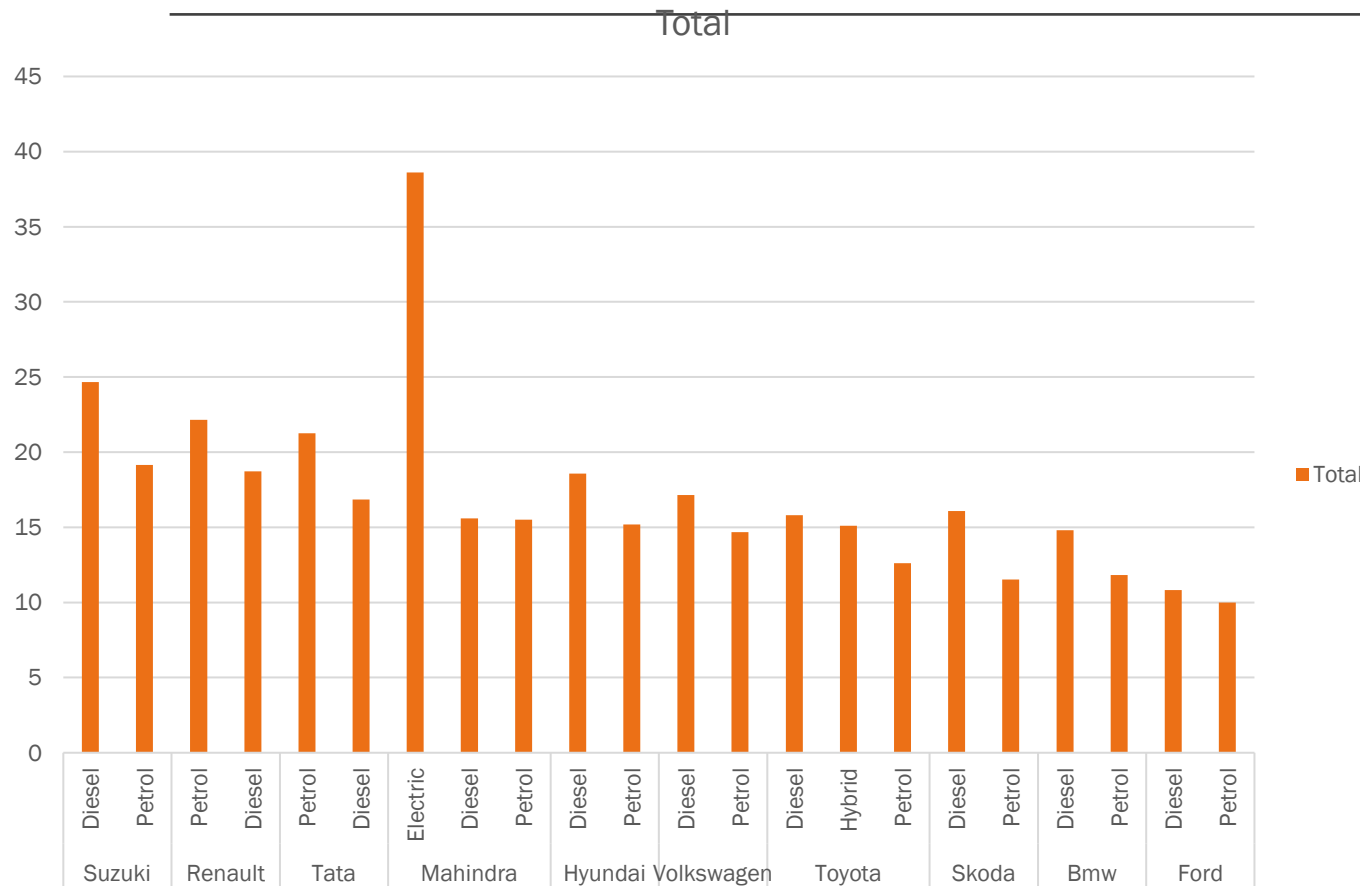
Combined Mileage: 17.89 km/litre

Distance Driven:

Total Distance: 635,121.84 km

Average Distance: 846.83 km

- These key vehicle metrics provide a comprehensive overview of fuel efficiency and usage patterns, helping consumers make informed decisions about vehicle performance and suitability for their driving needs.

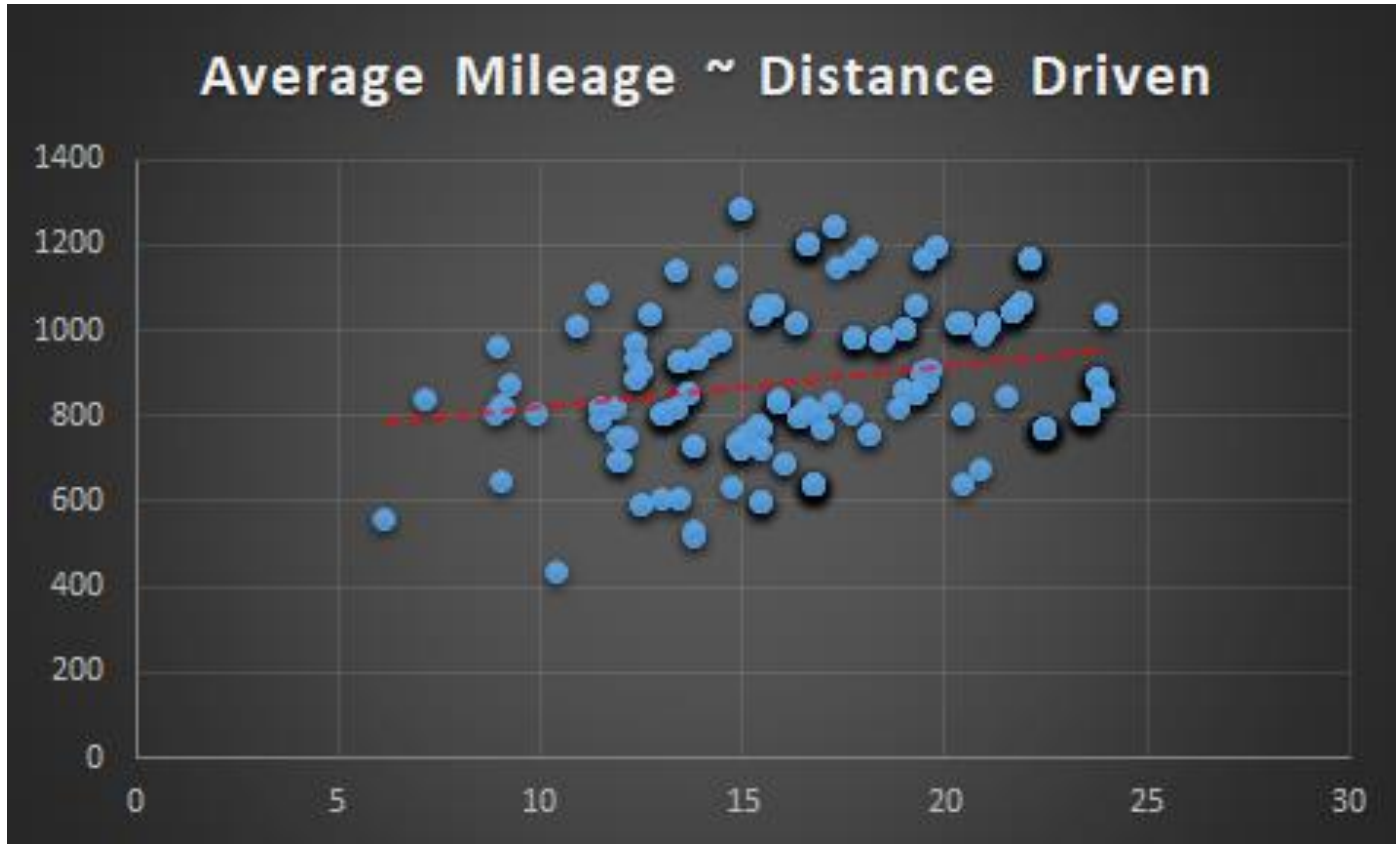


Electric Vehicles: Mahindra's electric model leads with the highest city mileage, showcasing the efficiency of electric powertrains.

Diesel Dominance: Diesel models generally provide superior city mileage compared to petrol models, reflecting their efficiency in urban driving conditions.

Hybrid Viability: Hybrid models, particularly from Toyota, offer a balanced approach, combining good mileage with lower emissions.

Relationship Between Average Mileage and Distance Driven



The analysis shows a modest positive correlation between distance driven and average mileage, with considerable variability suggesting multiple influencing factors. This insight can help in understanding how driving habits affect vehicle performance.

Thank You