

An abstract geometric design on the left side of the slide. It features a dark grey background with various shapes: a large orange triangle in the top left, a yellow square in the middle, a white semi-circle, a series of concentric orange circles, a pattern of diagonal lines, and several other triangles and squares in shades of orange, yellow, and white. A black dot is located in the top left corner, with a line extending from it towards the center.

Vehicle Analysis

Empowering consumers to make informed decisions when
purchasing a vehicle



OBJECTIVES

- Provide a comprehensive analysis of vehicle values for different vehicle makes.
- Determine vehicle values of popular vehicle brands over time.
- Identify key features that influence a vehicle's value.



OVERVIEW OF THE DATASET

Total Records: 1,874

Vehicle Makes: Audi, BMW, Honda, Hyundai, Land Rover, Mercedes-Benz, Toyota, and Volkswagen

Price ranges: \$3,000 – \$420,000

Locations: Data pertains to vehicles primarily located in India

Years: 2017 - 2021

Engine Sizes: 624cc – 6592cc

Drivetrains: All Wheel Drive, Front Wheel Drive, Rear Wheel Drive

Transmissions: Automatic vs. Manual

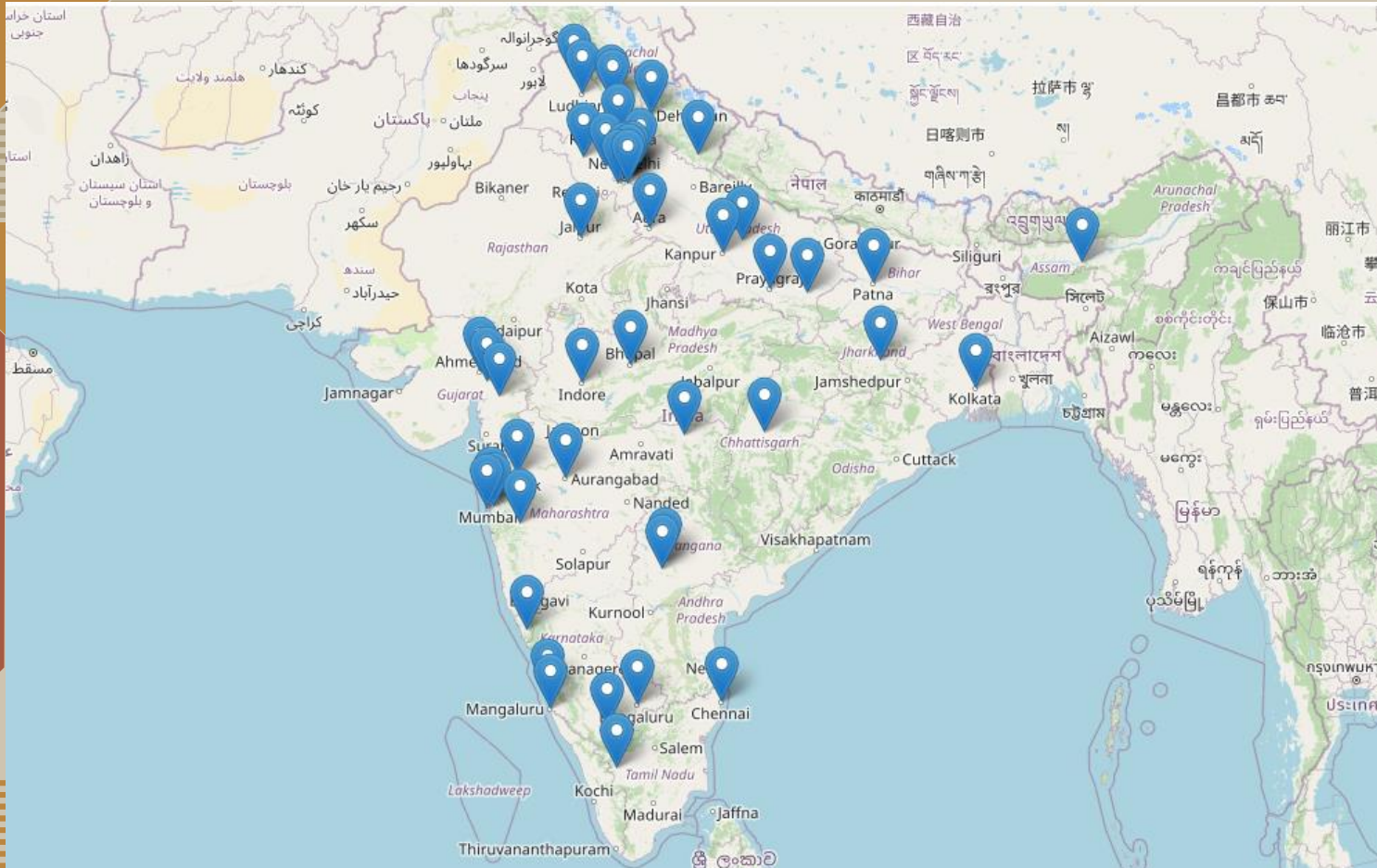
Fuel Types: Petrol, Diesel, CNG, Hybrid, CNG Hybrid

DISTRIBUTION OF VEHICLE MAKES



GEOGRAPHIC DISTRIBUTION

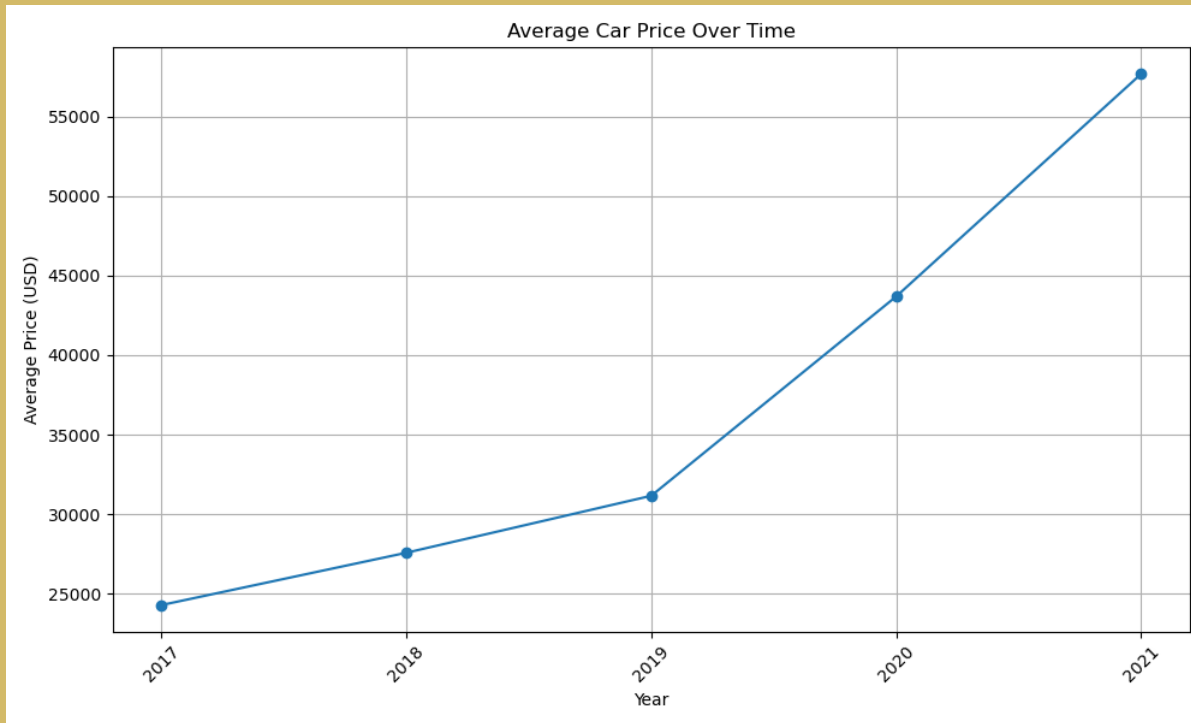
(75 COUNTRIES)



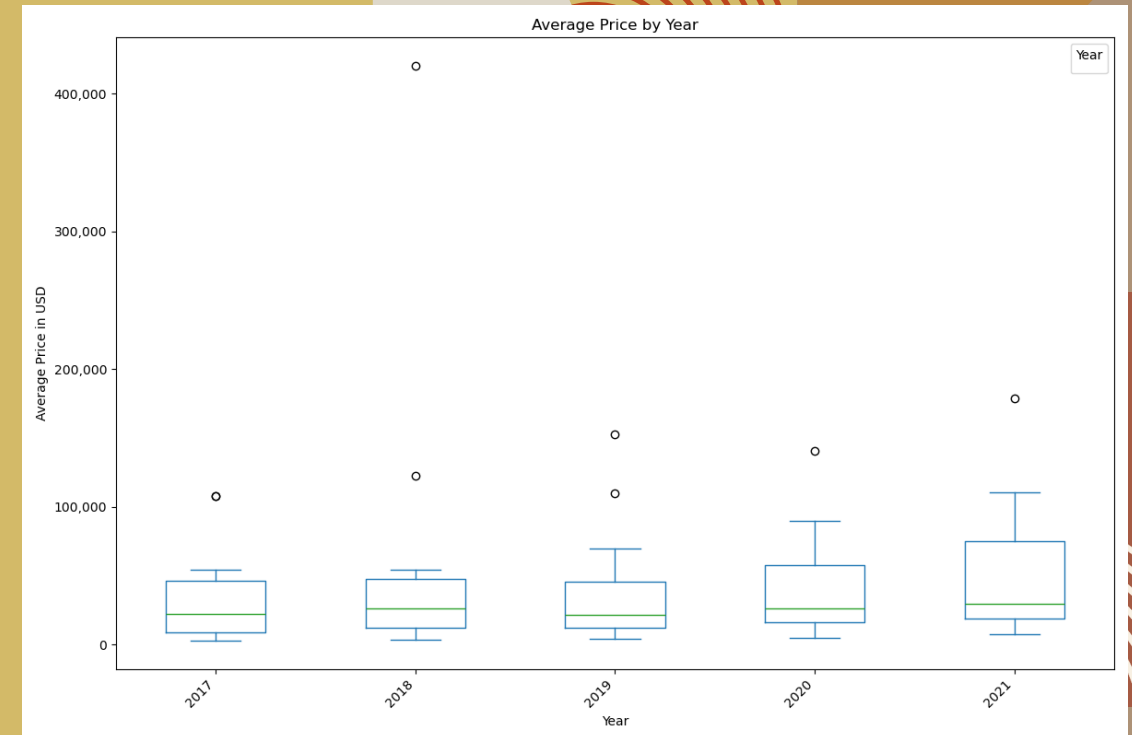
- Agra
- Ahmedabad
- Allahabad
- Ambala Cantt
- Amritsar
- Aurangabad
- Bangalore
- Bhopal
- Bhubaneswar
- Bulandshahar
- Chandigarh
- Chennai
- Coimbatore
- Dak. Kannada
- Dehradun
- Delhi
- Deoghar
- Dharwad
- Ernakulam
- Faizabad
- Faridabad
- Ghaziabad
- Goa
- Gorakhpur
- Gurgaon
- Guwahati
- Haldwani
- Hyderabad
- Indore
- Jaipur
- Jalandhar
- Jamshedpur
- Kanpur
- Karnal
- Kharar
- Kheda
- Kolkata
- Kollam
- Kota
- Lucknow
- Ludhiana
- Mangalore
- Meerut
- Mirzapur
- Mohali
- Mumbai
- Muzaffarpur
- Mysore
- Nagpur
- Nashik
- Navi Mumbai
- Noida
- Panchkula
- Panvel
- Patna
- Pimpri-Chinchwad
- Pune
- Purnea
- Raipur
- Ranchi
- Ranga Reddy
- Rohtak
- Roorkee
- Rudrapur
- Salem
- Samastipur
- Surat
- Thane
- Udupi
- Vadodra
- Valsad
- Varanasi
- Warangal
- Yamunanagar
- Zirakpur

VEHICLE PRICE DISTRIBUTION OVER TIME

- The largest increase occurs between 2020 and 2021, indicating a significant jump in vehicle prices during that period.
- The smallest increase is observed from 2018 to 2019.

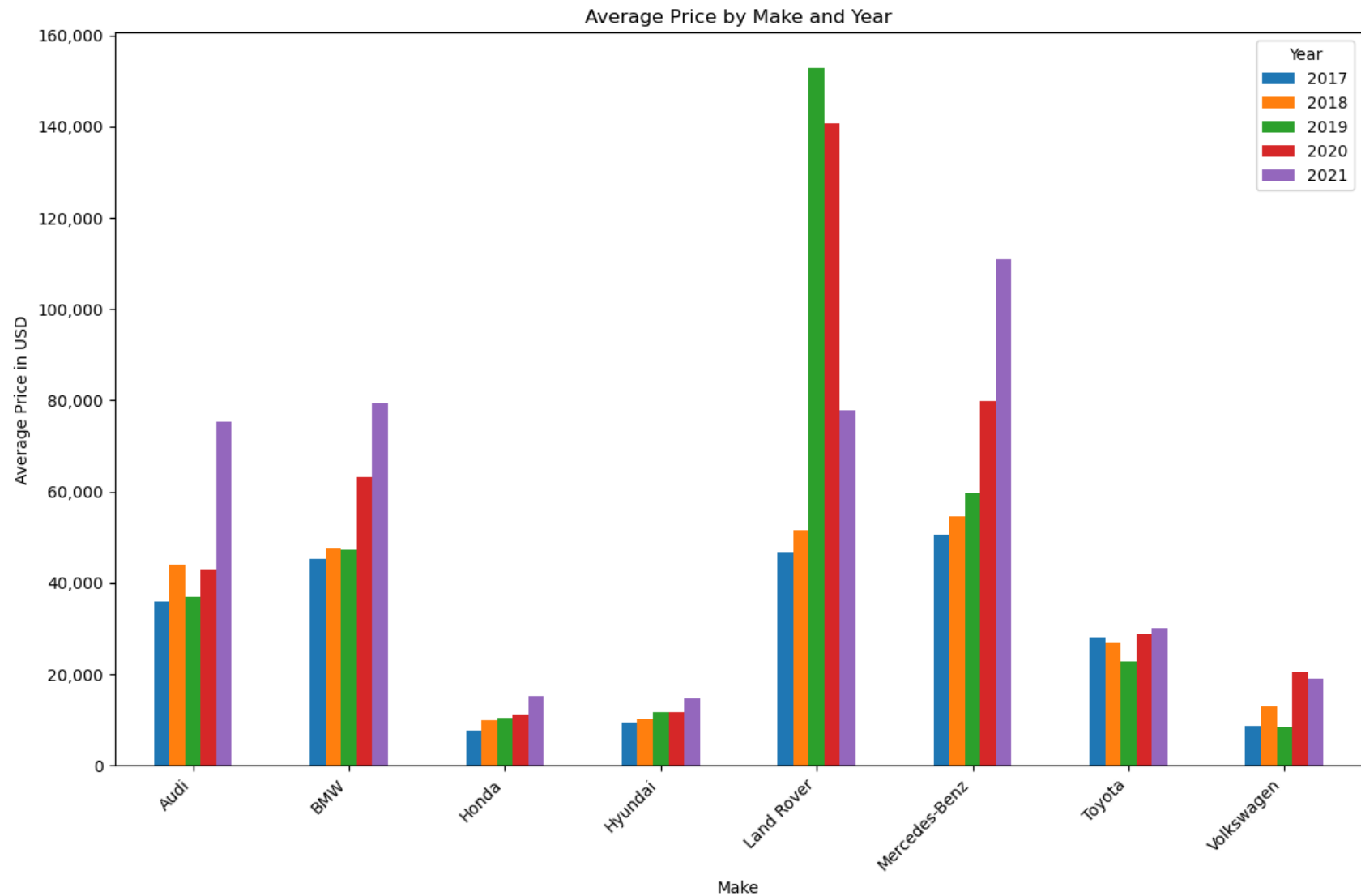


- The box plot analysis revealed significant variations in average vehicle prices across different years.



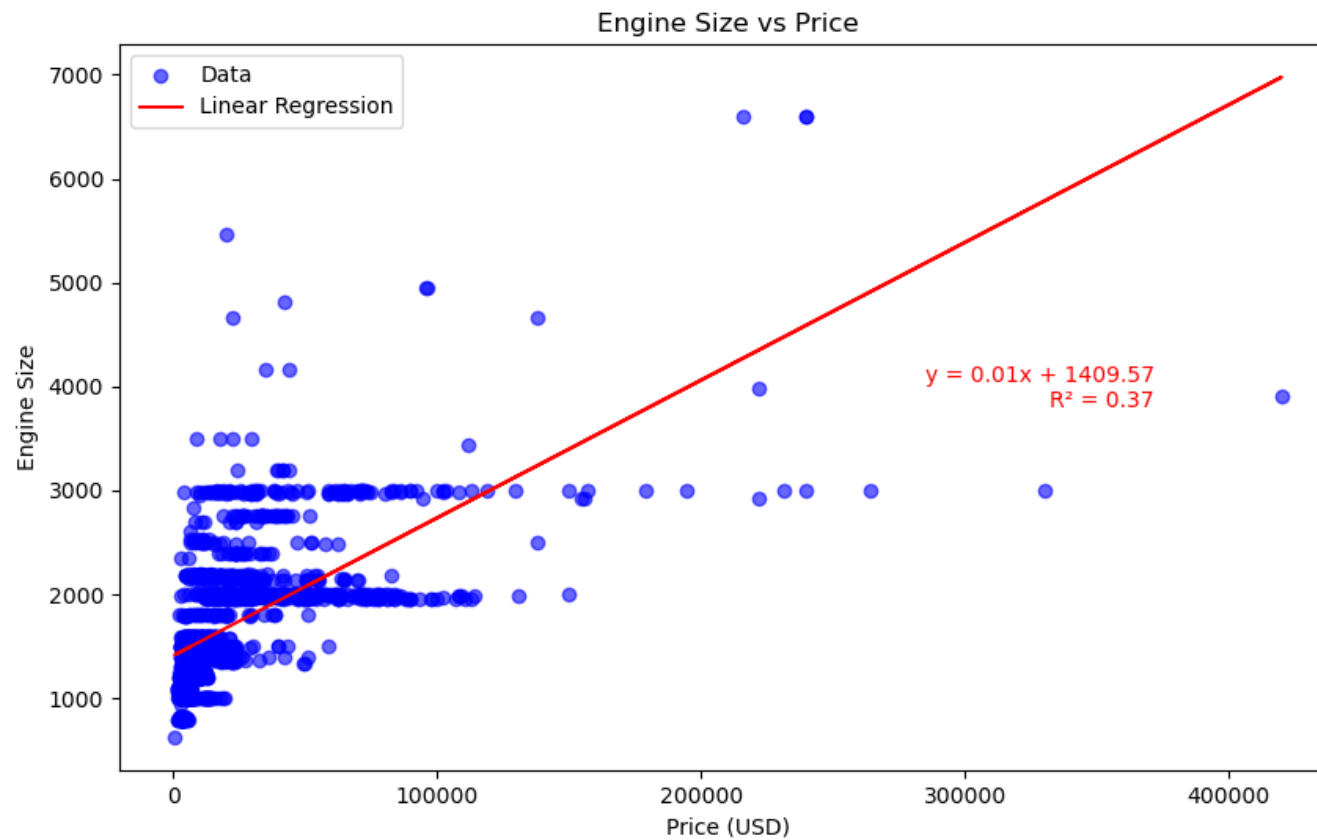
AVERAGE PRICE BY MAKE AND YEAR

- Honda , Hyundai, and Toyota show more stable pricing trends over the years, while Volkswagen exhibits more significant fluctuations.
- Luxury brands like Audi, BMW, Mercedes-Benz, and Land Rover tend to have higher average prices



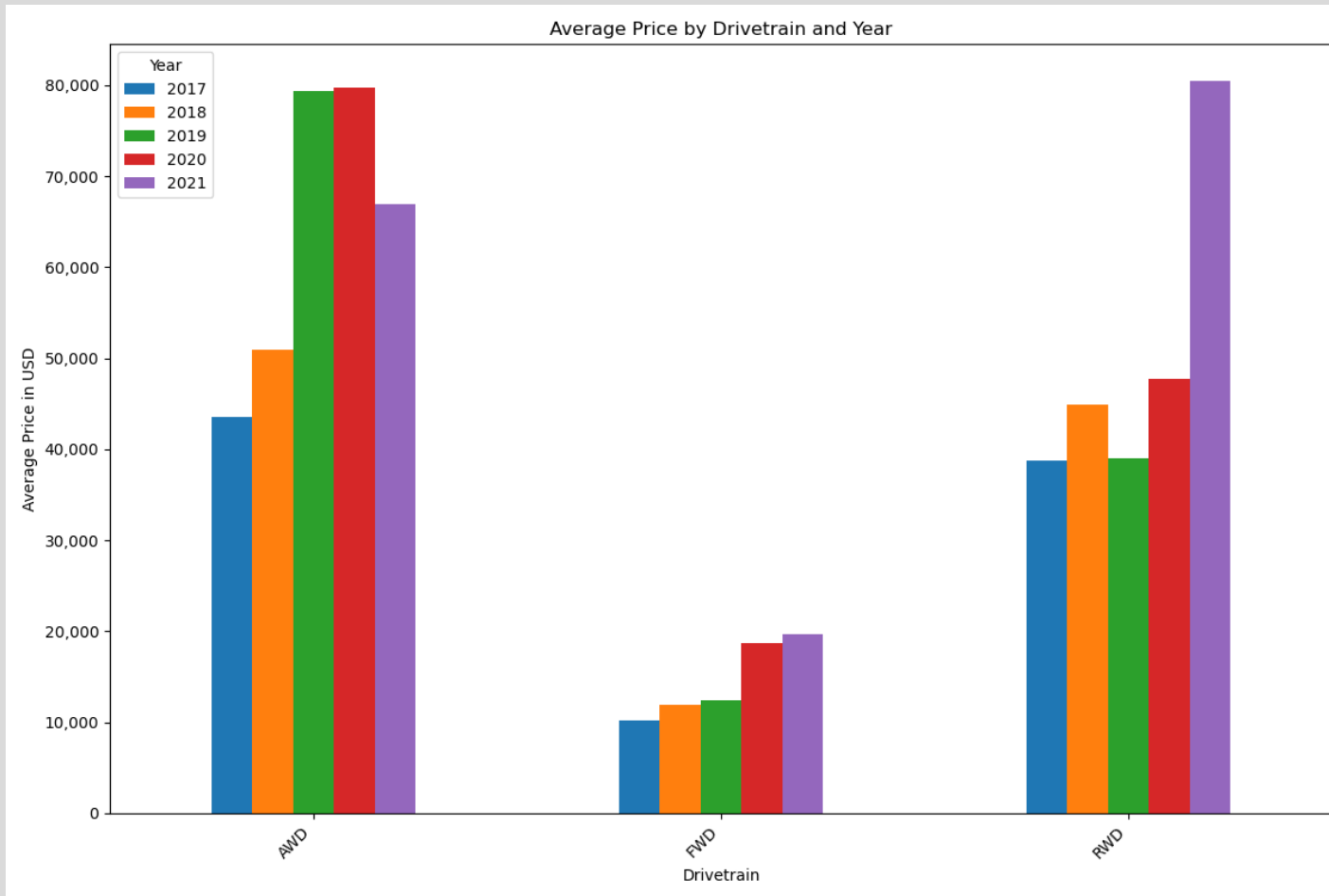
ENGINE SIZE VS. PRICE

- The linear regression map indicates a positive relationship between engine size and price. As engine size increases, there's a tendency for the price of cars to also increase.
- This suggests that larger engine sizes are often associated with higher-priced vehicles.



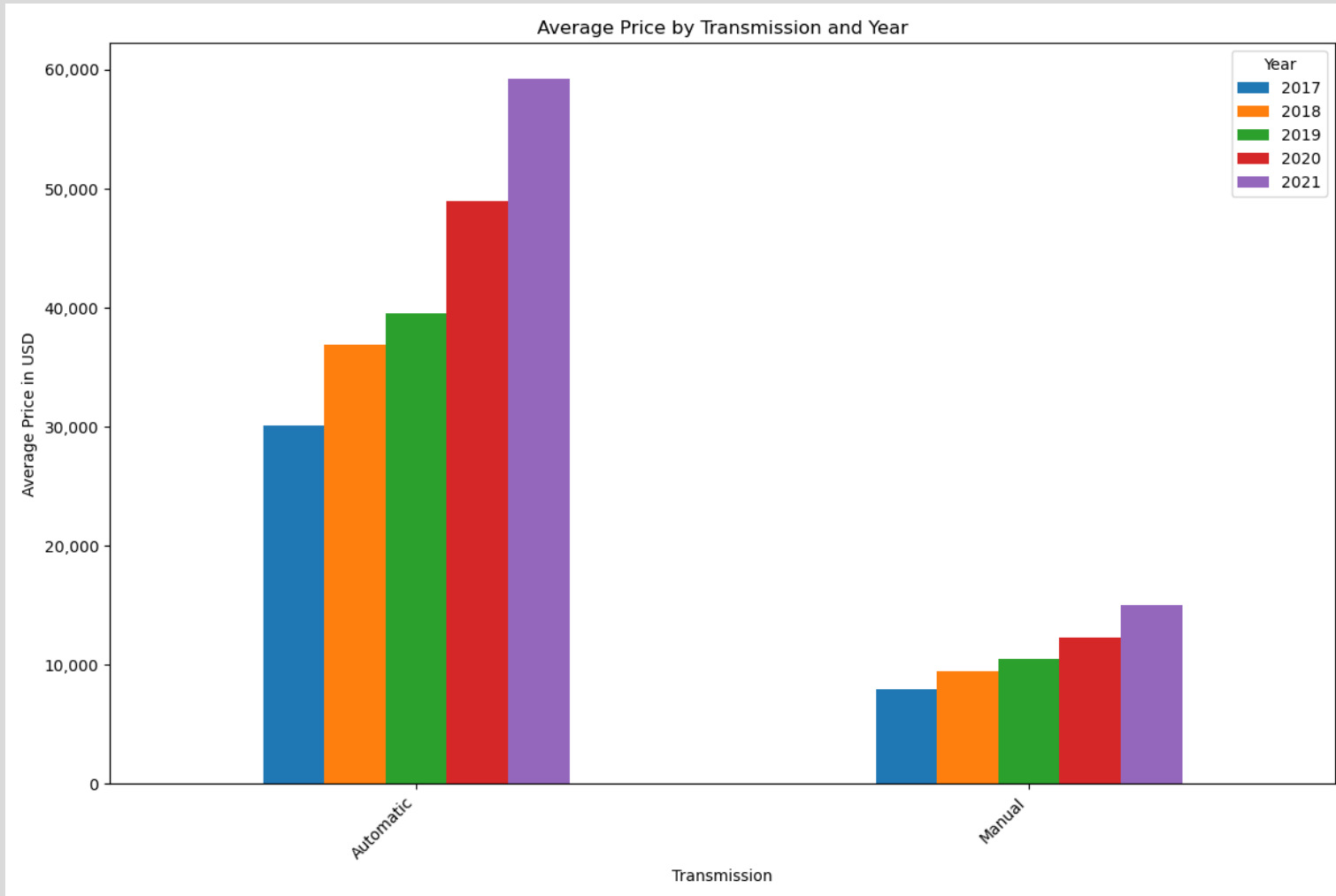
- The R-squared value in the regression model shows how much of the price change can be explained by variations in engine size.
- The R^2 value indicates a moderate relationship between the variables.

PRICE BY DRIVETRAIN AND YEAR



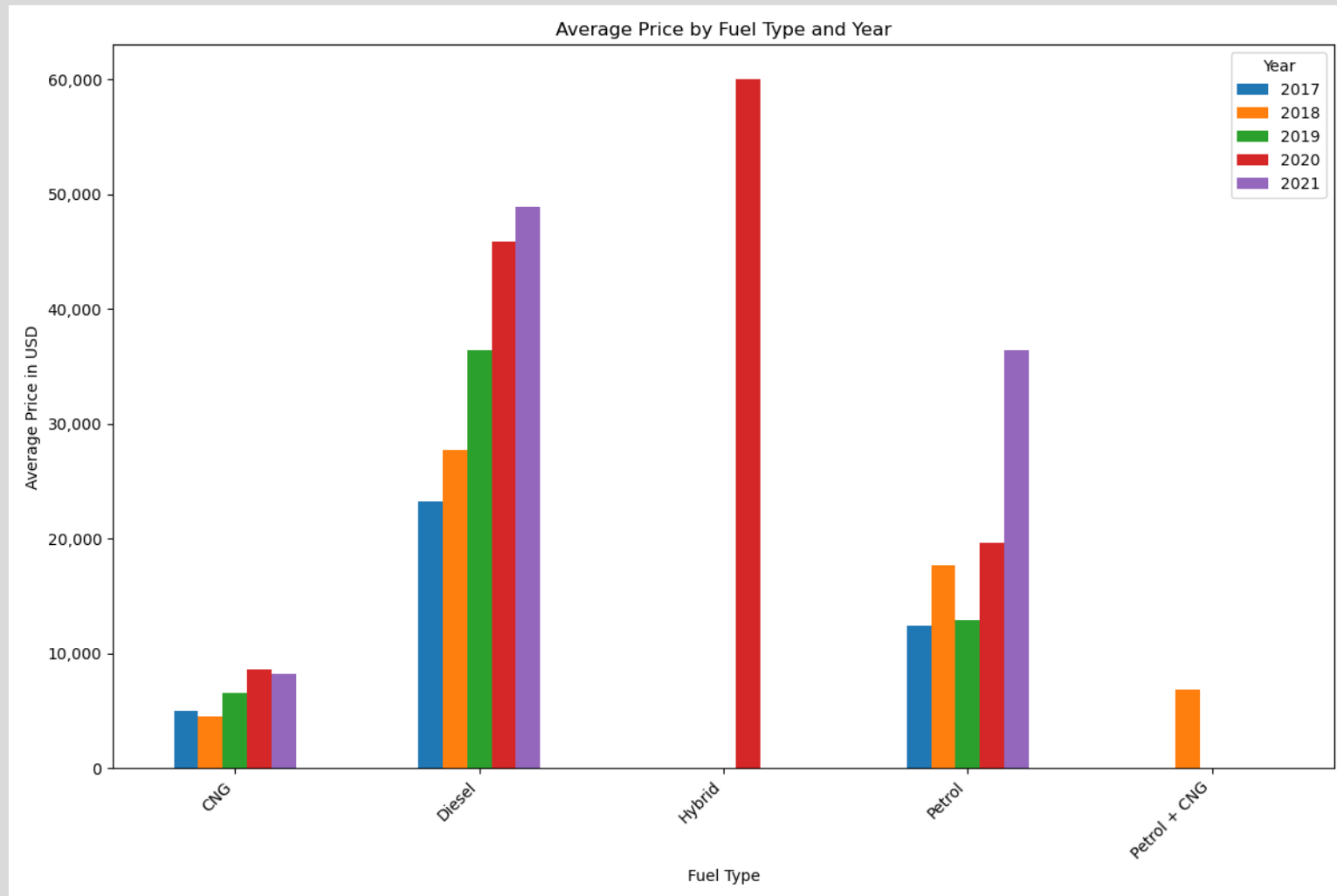
- AWD vehicles consistently commanded higher prices compared to FWD and RWD vehicles, indicating perceived value and market demand for AWD systems.
- Prices of AWD and RWD vehicles generally increased over the years, possibly due to technological advancements or changes in consumer preferences.

TRANSMISSION VS. PRICE



- Automatic cars cost more than manual cars most likely because people prefer them and find them more convenient.
- Prices for both automatic and manual cars went up over the years, likely because of inflation and changes in the market.

FUEL TYPE VS. PRICE



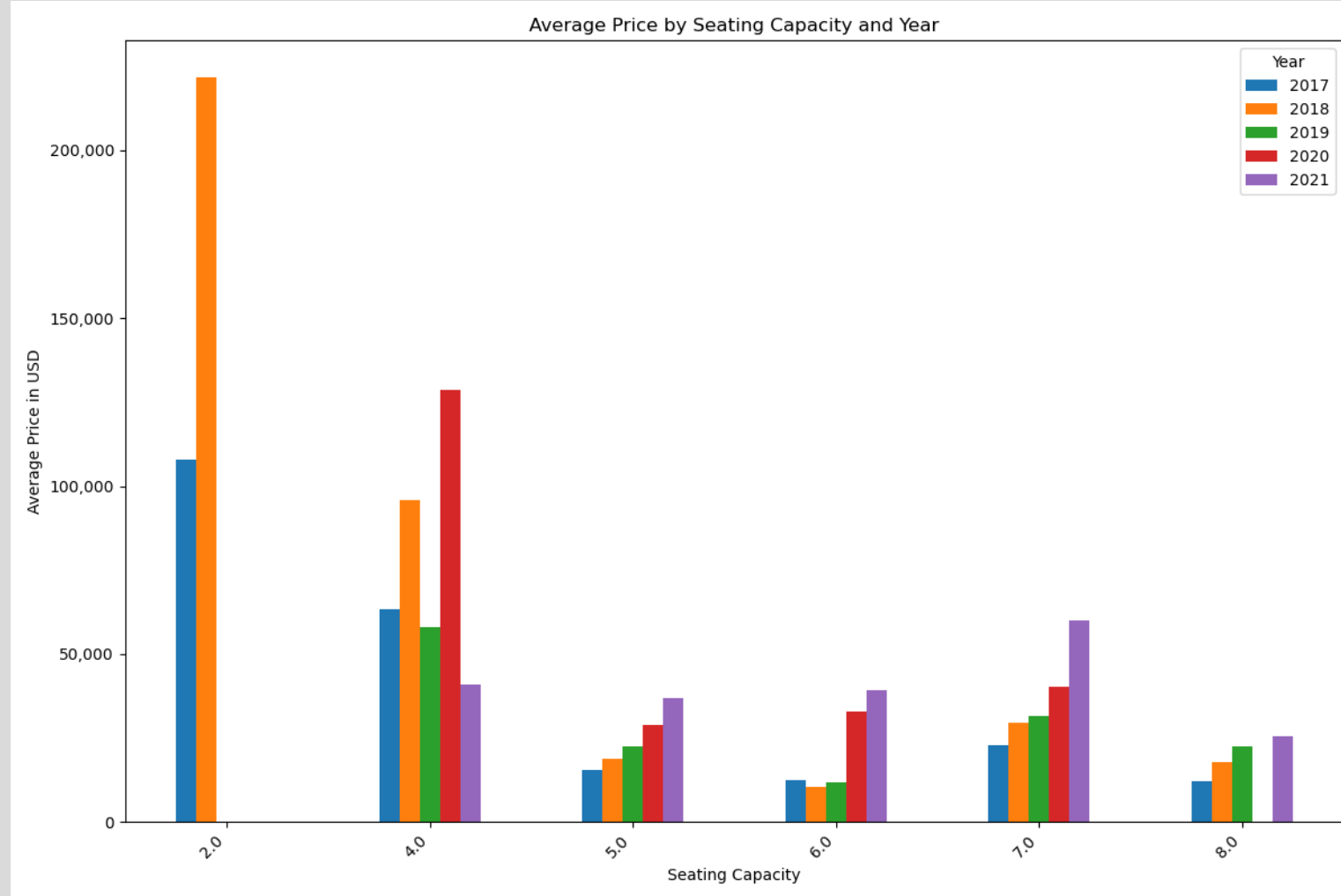
- Diesel vehicles exhibited higher average prices compared to gas and alternative fuel vehicles, likely due to factors such as fuel efficiency and market demand.

- **CNG Pricing Stability:** Compared to petrol, diesel, and hybrid fuels, compressed natural gas (CNG) prices appear to be relatively stable over the years.

- This stability might be due to factors such as abundant natural gas reserves, consistent supply chains, or government pricing policies.

SEATING CAPACITY VS. PRICE

- Vehicles with less seats, like 2-seaters and 4-seaters, usually cost more on average, showing that smaller vehicles are seen as more valuable.
- Prices of 7-seater vehicles showed a significant increase over the years, possibly driven by market demand for SUVs and family-oriented vehicles.





CONCLUSION AND KEY INSIGHTS

Price Variation: Significant price variations exist between makes, with premium brands commanding higher prices.

Drivetrain Impact: All-wheel-drive vehicles consistently fetch higher prices, reflecting market demand.

Engine Size vs. Price: A positive relationship exists between engine size and price, indicating a preference for larger engines.

Transmission Trends: Automatic transmissions correlate with higher prices, with an overall increasing price trend.

Fuel Type Dynamics: Diesel vehicles generally have higher prices.

Seating Capacity Influence: Smaller seating capacities correlate with higher prices, especially for 2- and 4-seater vehicles.

Overall, the study highlights various factors affecting vehicle prices, including brand reputation, preferred drivetrains, and demand for seating capacity. This knowledge should help consumers navigate the market, adjust strategies, and take advantage of new trends, ensuring ongoing success in the changing automotive industry.

Q & A'S

THANK YOU

Anna Ramer

annaramer@yahoo.com

Benjamin Fish

benjamin.fish426@gmail.com