

Recommendations to the dealer

Used vehicle market involves many factors when it comes to predicting the prices. Colors, vehicle type, manufacturer, model, price, transmission and vehicle ages are some of the significant factors we had a chance to analyze that affect the time a used vehicle stays in the lot. Few characteristics that are highly desirable among used vehicles that may help the dealer in determining the overall price.

1. Cars between 1980 and 2000 cost much lower compared to the cars from 2000.
2. Based on the data, the top 5 cars in the dataset are Chevrolet suv, ford truck, ford suv, jeep suv and ford pickup.
3. CA, NY and FL are the states where cars sales are more compared to the other states implying that price might be higher due to high demand.
4. Electric cars are expensive compared to gas, hybrid and diesel.
5. The price of cylinders is not directly correlated to the price of car.
6. Cars with color white, black, silver and grey are sold more compared to the other cars.
7. Cars with condition excellent are sold more compared to the cars good, new and like new.
8. SUVs and sedan-type vehicles are sold faster than Economy vehicles
9. Dealers should prefer to buy cars with low age with color black, while, or silver.
10. The top priced cars are tesla, Ferrari, ram and Porsche.

Model Prediction

Based on the research performed, Linear Regression with K-Fold with 9 features gave an optimal Root Mean Square result. Using this model, we can predict the prices of the used cars with subsequent data.

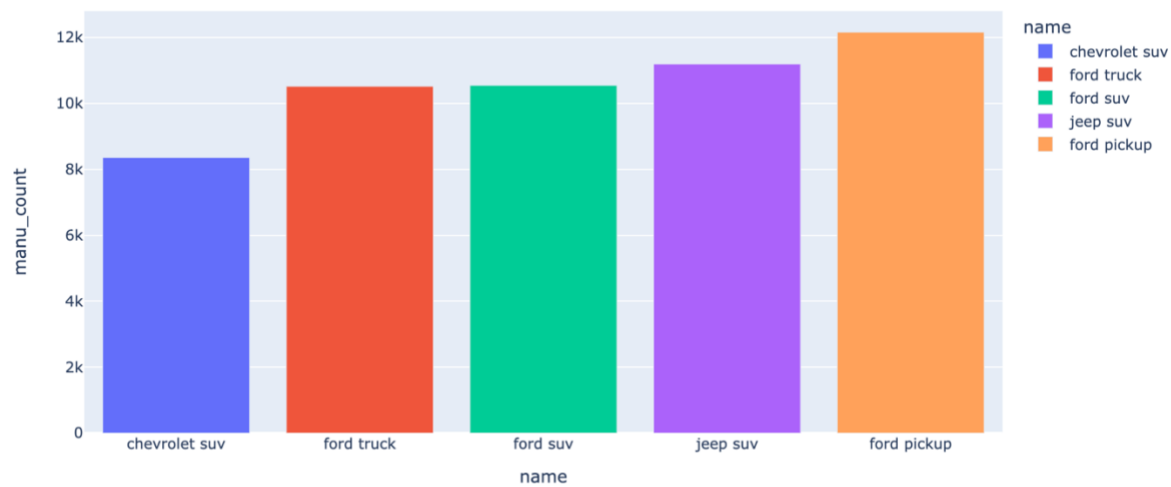
Next Steps

Future research is recommended to explore other factors that influence the sales period of a used vehicle. For example, the level of fuel-efficiency, level of discount from the original price. Incorporating these factors in the analysis can improve the accuracy to choose non-overage vehicles and have a positive impact on profit.

Details

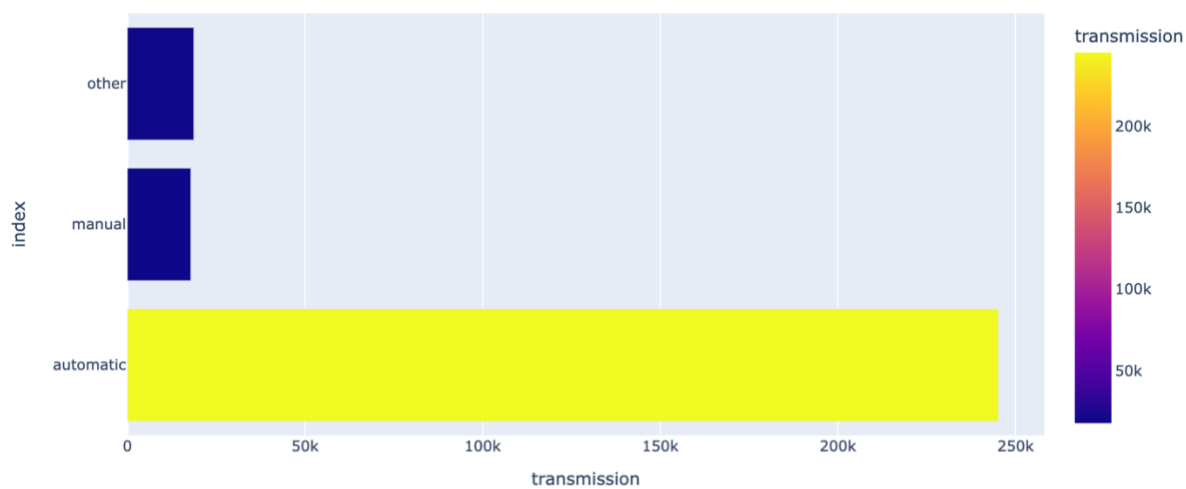
Below are the some of the details related to the above findings.

Top 5 used cars



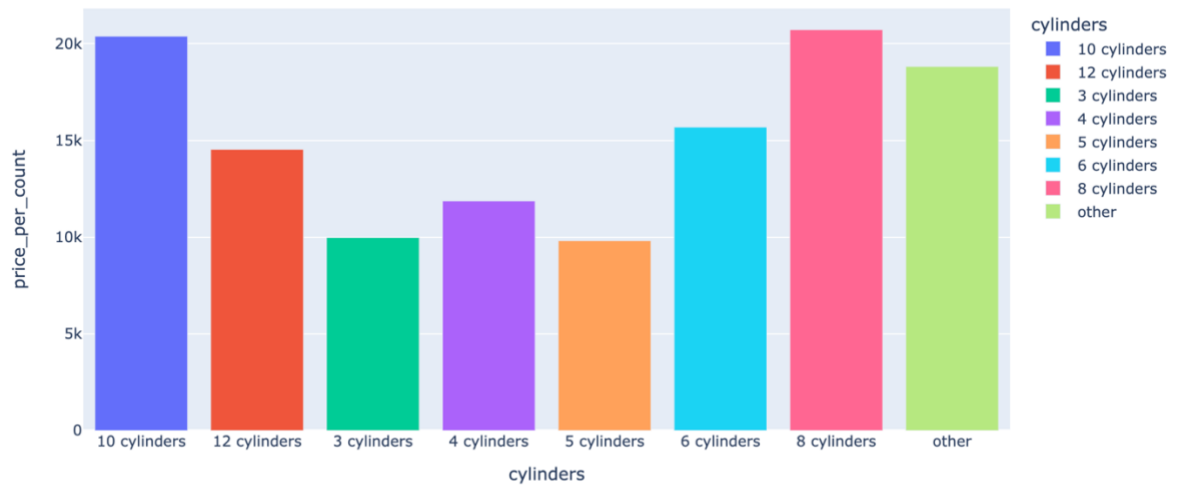
From the above, it is pretty clear that ford pick up is the most sold car.

Most sold used car by transmission

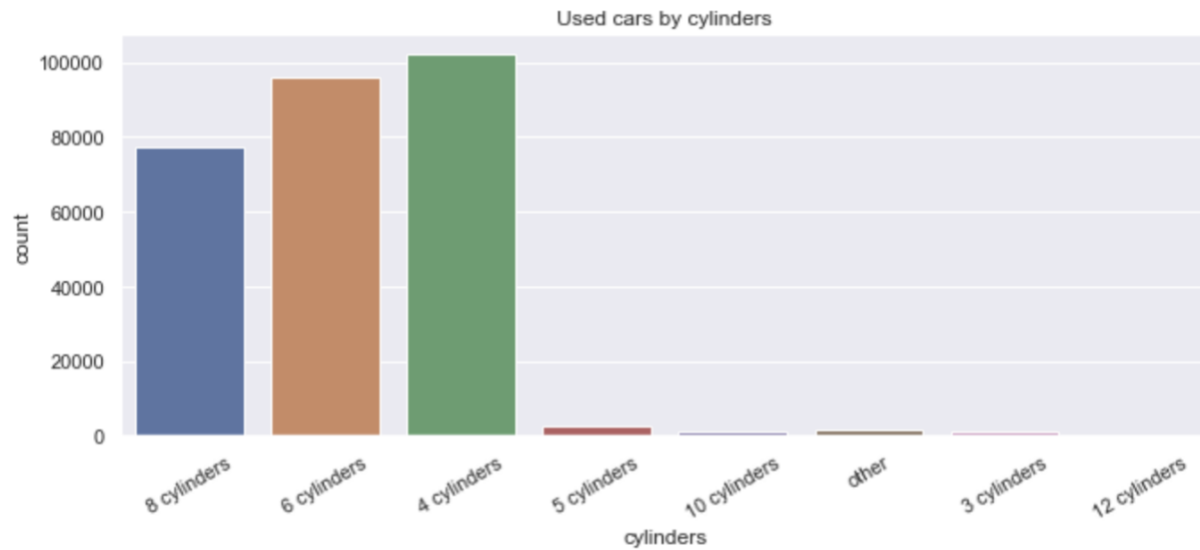


From the above plot, it is pretty clear that automatic transmission is the most sold among used cars.

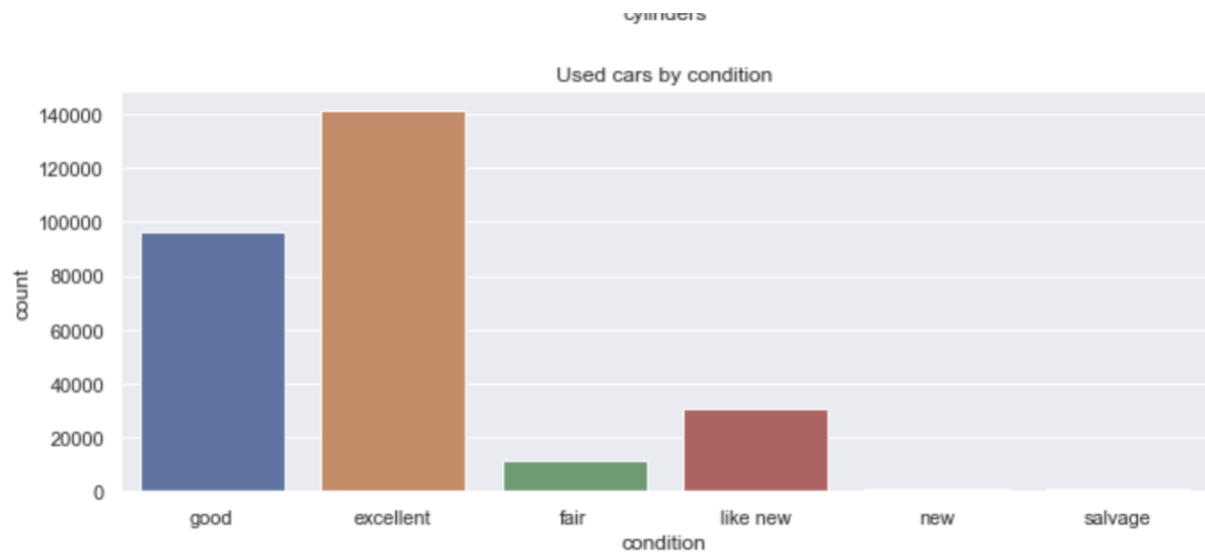
Total Price by cylinders



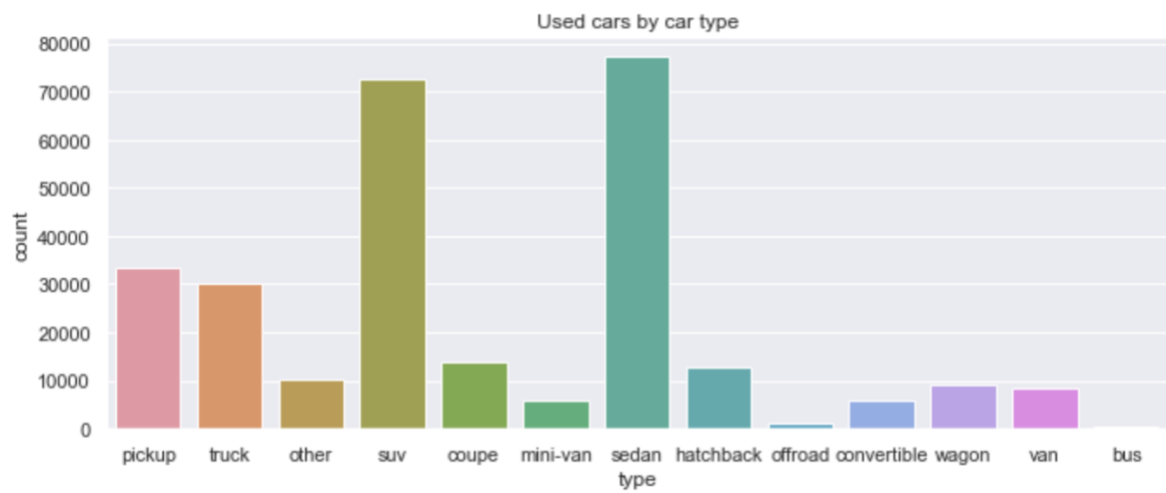
Based on the information provided and from the above plot, it is pretty clear that the cost of cylinder does not increase with increase in number of cylinders.



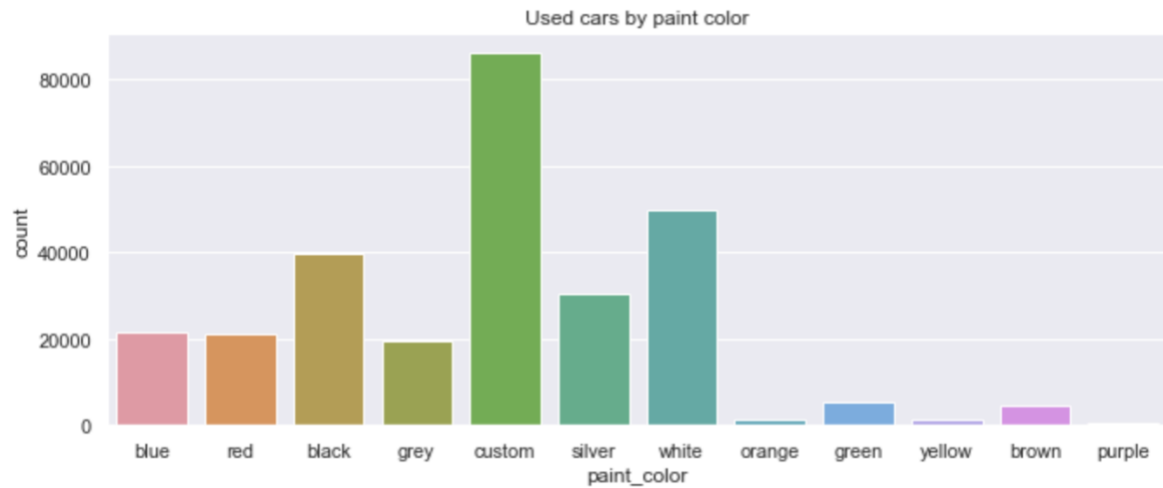
Cylinders do not have a direct. Correlation in determining the price.



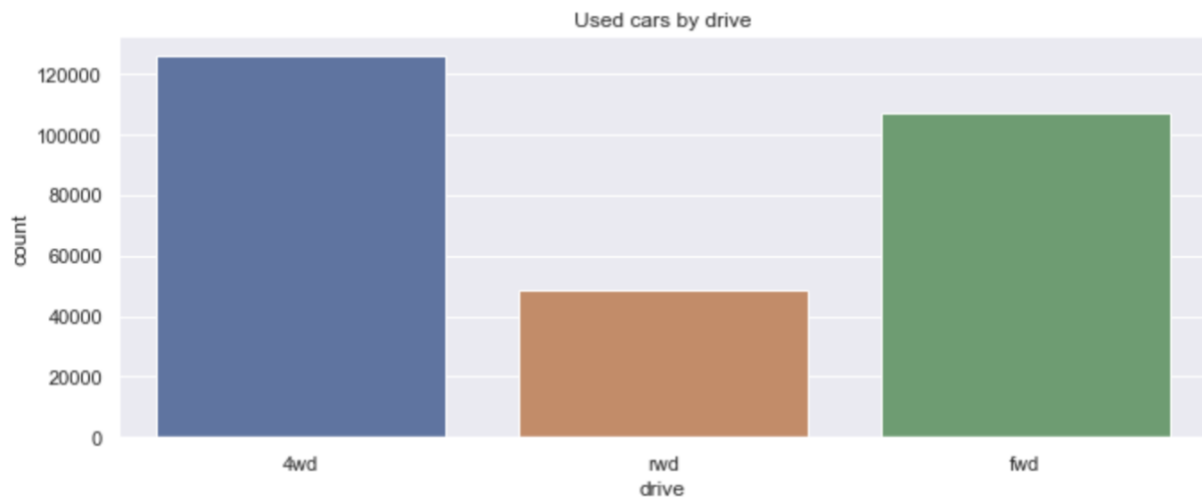
Cars with excellent condition cost more compared to other cars.



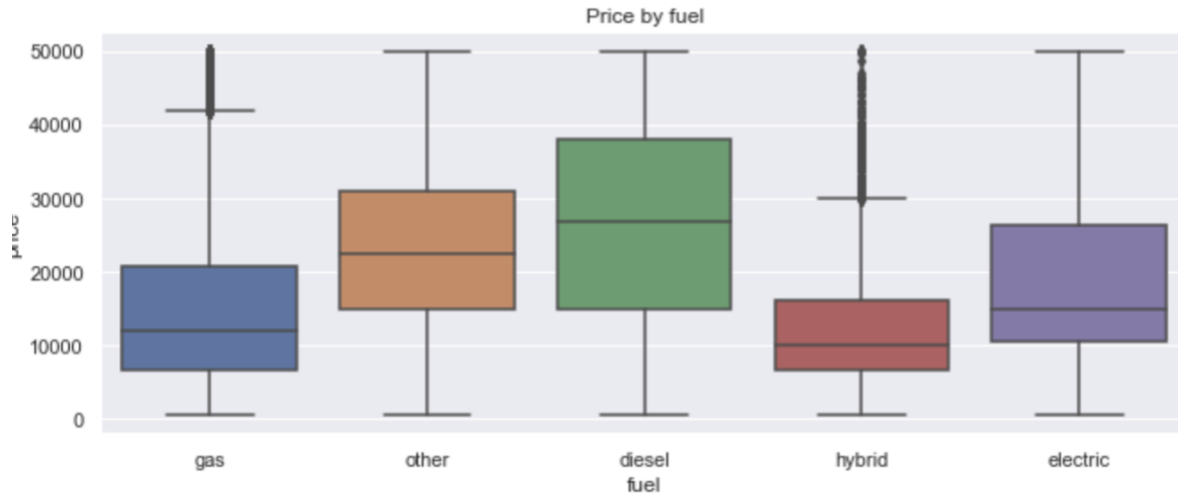
Cars of type SUV and sedan are sold more compared to other cars. The prices of these cars are driven by supply and demand.



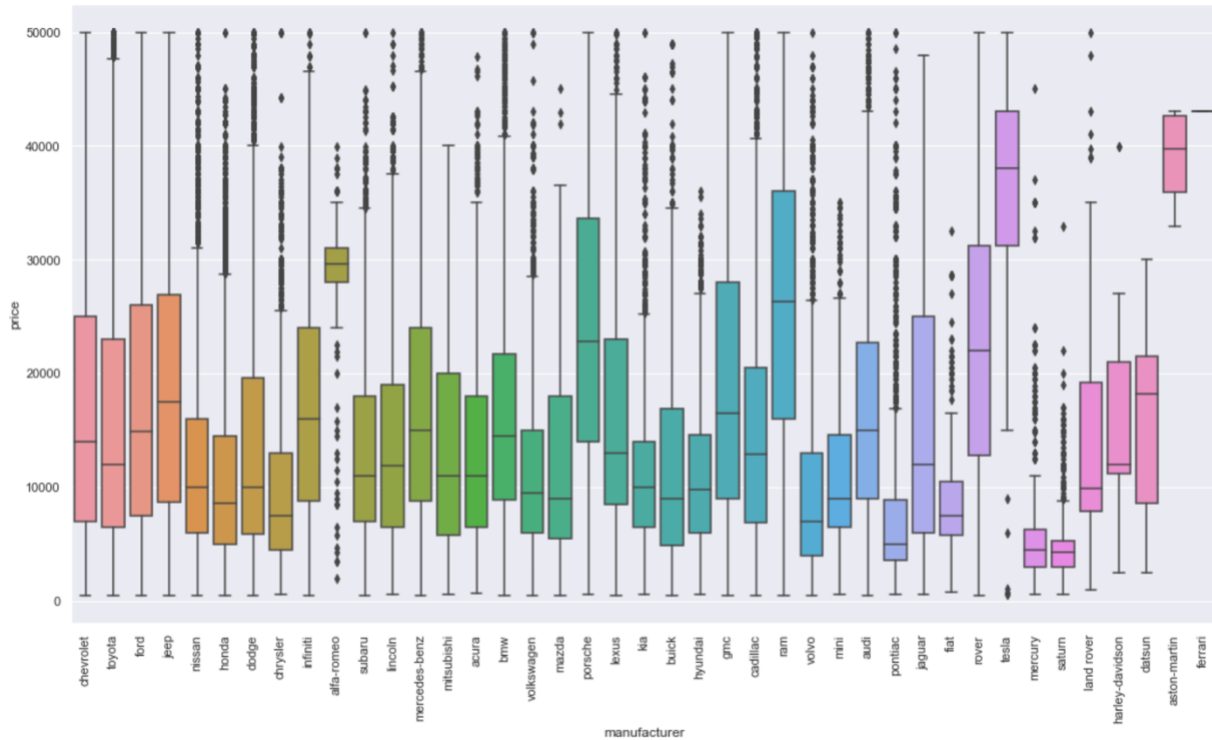
Cars with white, black and silver are sold more compared to the other car types. The custom column in the above may involve Nan values too.



Cars with 4wd are priced higher compared to the other cars.

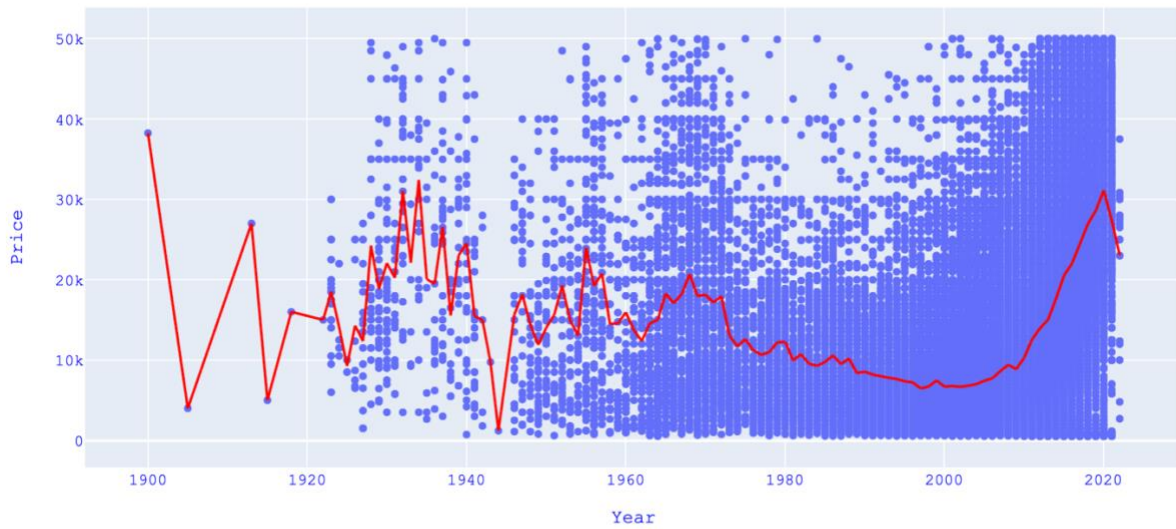


Cars with fuel type diesel are priced higher compared to the other car types.



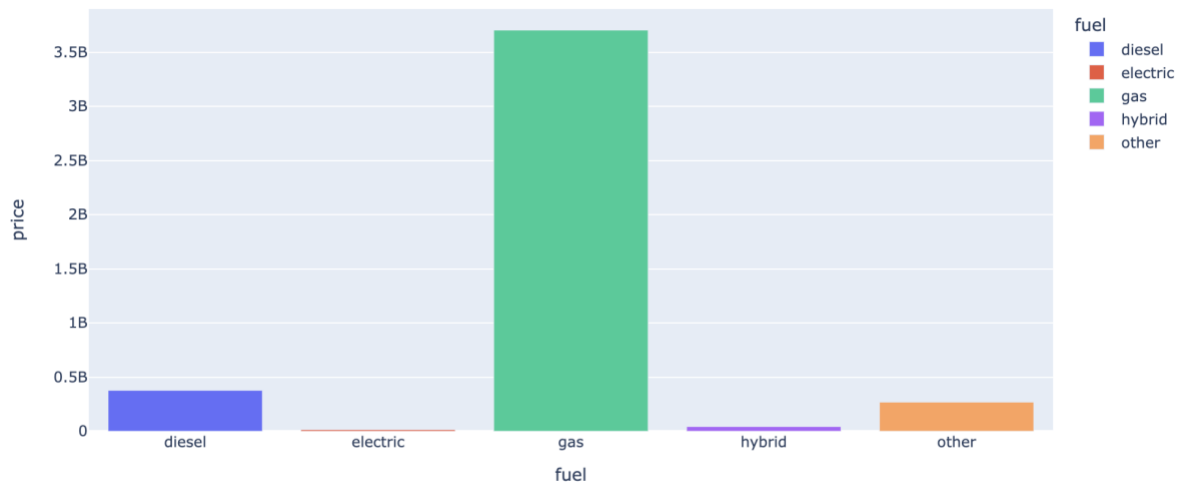
Tesla, Ferrari, Porsche and RAM are priced higher compared to other manufacturers.

Price of used cars by age



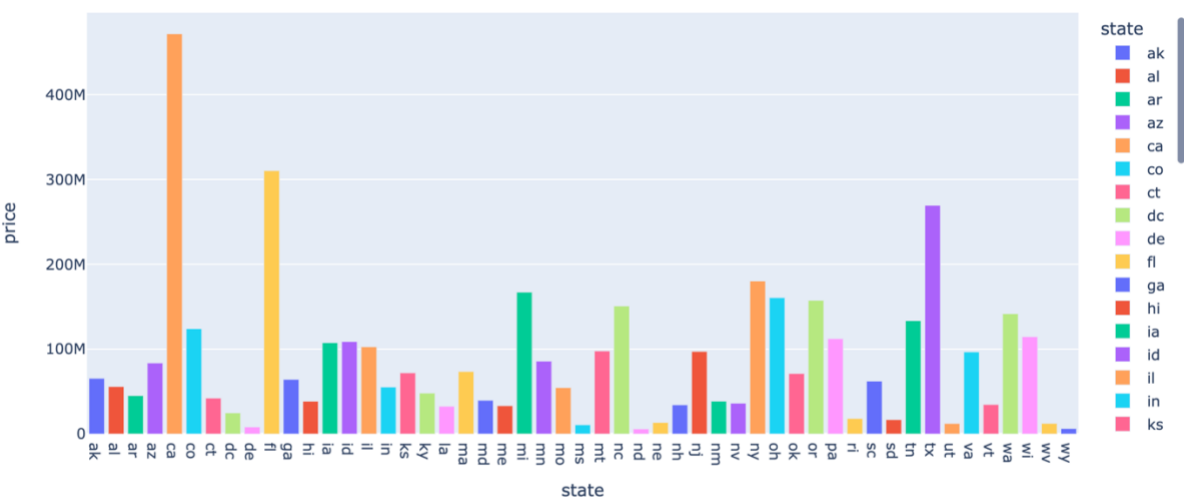
From the year 2000, we clearly see that the price of cars increases as age of the used car decreases.

Fuel consumption of used cars



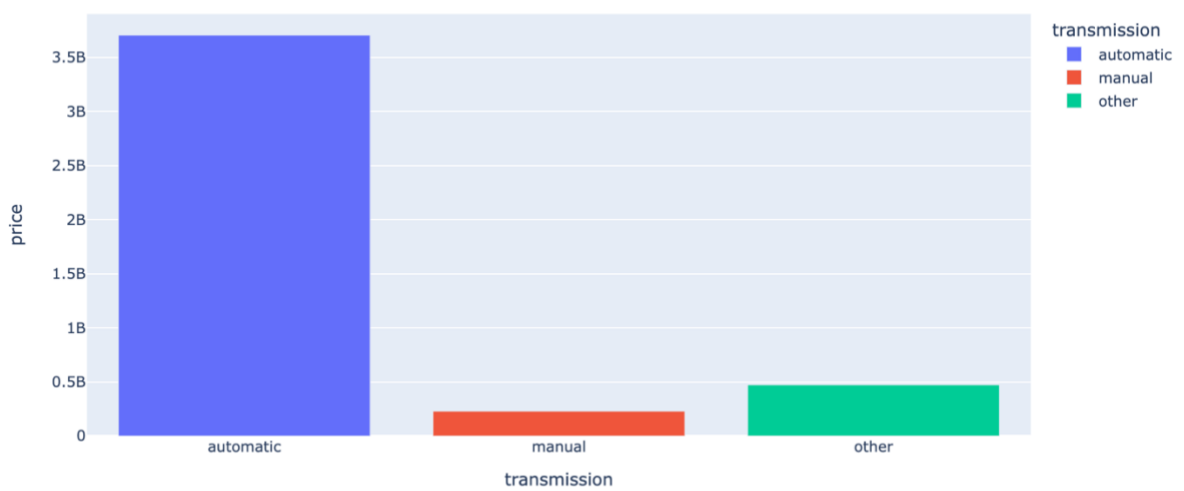
Based on the above plot, it is clear that used cars with fuel type gas are more sold compared to the other car types.

Used cars total price by state

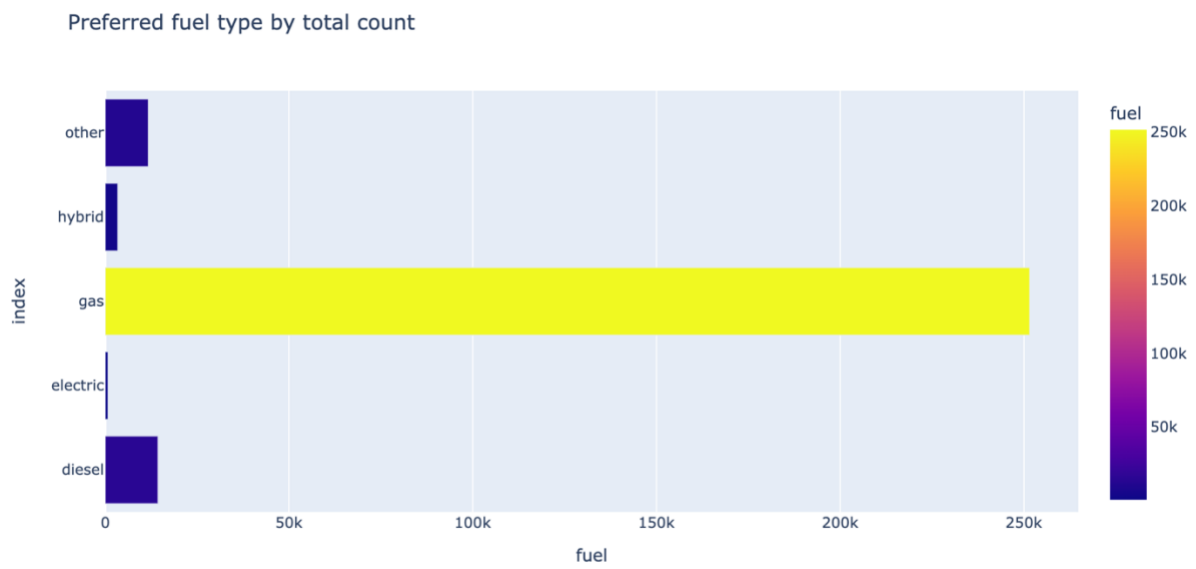


Based on the above plot, we can clearly see th top 5 states by total price. CA, FL, TX, NY and MI

Total Price by transmission



Based on the above plot, it clearly shows us that automatic transmission costs much more than manual and other transmissions.



From the above plot, we can see that the gas is most preferred fuel type compared to other fuel types.