Unveiling the Pakistani Used Car Market

I've just completed an in-depth analysis of the used cars listed for sale on PakWheels.com and train multiple models to predict the best asking price for car on sale. This dataset was sourced from Kaggle, providing valuable insights into the Pakistani used car market. Following is some of the interesting findings from the dataset.

- The majority of the cars listed on PakWheels are from capital cities, with over 50% of them coming from the Punjab region.
- There are twice as many locally assembled cars as there are imported ones.
- Locally assembled cars are cheaper than imported ones.
- Sedan, hatchback and SUV are the most popular body types.
- Toyota, Suzuki, and Honda collectively dominate the market, accounting for 84% of the cars listed for sale on PakWheels
- There is a positive correlation between the manufacturing year and the number of ads. Fewer cars listed on PakWheels have older manufacturing years.
- People show a preference for automatic hybrid cars over manual hybrid cars.
- White remains the most popular car colour followed by silver, black and grey.
- More than 75% car have values under 5 million PKR. The count of cars decrease as the price goes up.
- It appears that the price is directly proportional to the car's manufacturing year, with newer cars having higher prices.
- The majority of cars have engines ranging from 600 CC to 2000 CC.
- the most recent years, i.e., 2020-2024, have the lowest mileage whereas years before 2010 have significantly higher mileage. Therefore, it implies that old cars have more mileage than new ones.
- Engine capacity impacts the most on car price followed by manufacturing year
- I employed a range of models, including regression and tree-based models, to predict best ask prices. In this specific scenario, Random Forest emerged as the top performers, delivering the highest R-squared (R2) score of 94.22, with XGBoost closely following with 93.5. Polynomial regression exhibits really bad performance.

Made By: **Ahmad Shafique**