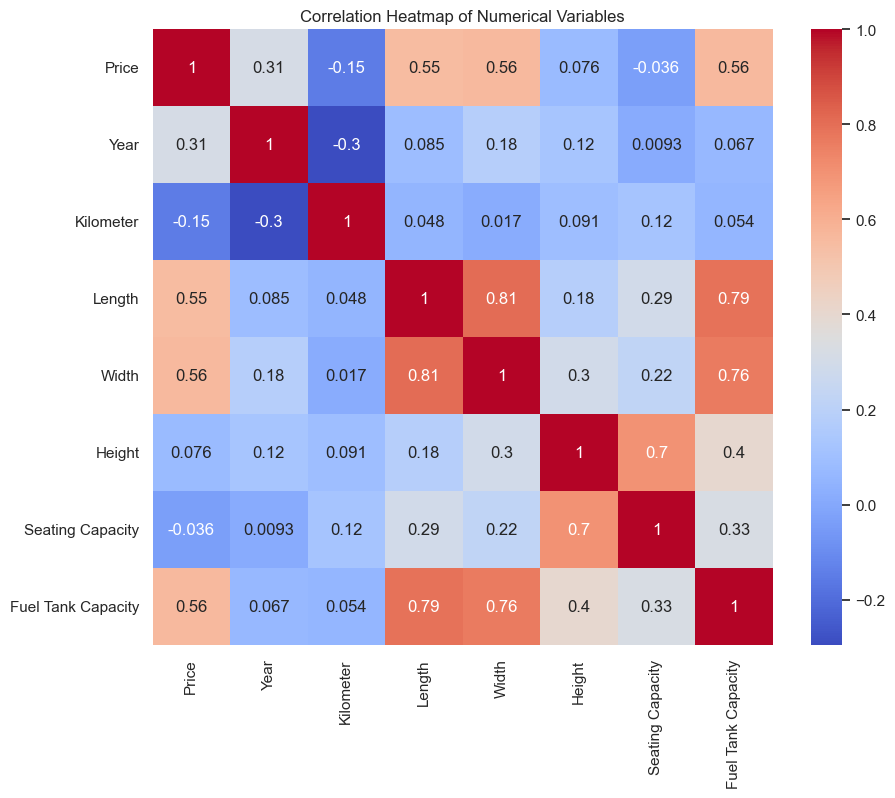
**Analyzing the Pre-Owned Car Market Using Data**

Overview   
The used car market is characterized by a wide range of vehicles and intricate dynamics. Using data from multiple transactions, we analyze the inner workings of the used car sales industry, revealing the factors that influence pricing, popularity, and consumer preferences.   
  
An overview of the dataset   
The journey commences with a dataset containing comprehensive information on more than 2,000 car sales. This dataset encompasses a wide range of attributes, including make, model, engine power, and fuel type. The oldest automobile recorded in the dataset is in 1988, providing a historical context spanning up to 2022.

Analysis of Pricing

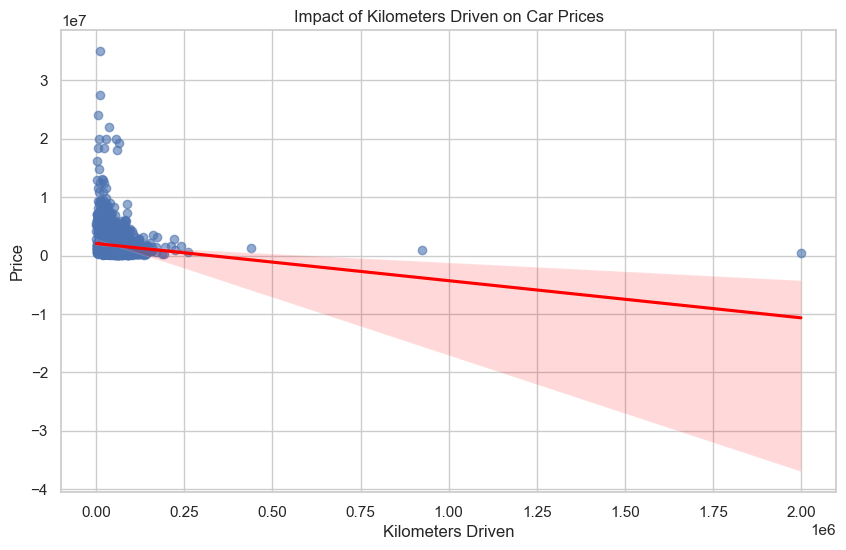
The dataset exhibits a wide range of prices, which serves as a comprehensive measure of value. The correlation matrix below shows the factors that have a significant impact on how buyers’ approach and evaluate used cars.

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Price and Vehicle Size: The length (0.55) and width (0.56) of vehicles have a strong positive relationship with their prices. This suggests that larger cars are generally more expensive. This could be attributed to rising material costs, higher performance standards, and more opulent features normally associated with larger models.

A significant correlation (r = 0.56) was found between vehicle price and fuel tank capacity. This implies that cars with larger fuel tanks, which are designed to provide a longer driving range, are typically more expensive. This correlation could be attributed to these vehicles' improved features and increased utility.

**Do More Kilometers Reduce the Price?**

The distance traveled is of great importance. The relationship between price and kilometers driven is depicted in a scatter plot (Figure 4), revealing depreciation or the amount of value cars retain as they age on the road.   
  


**Does Your Location Affect the Cost of a Car?**

Geographic Variation

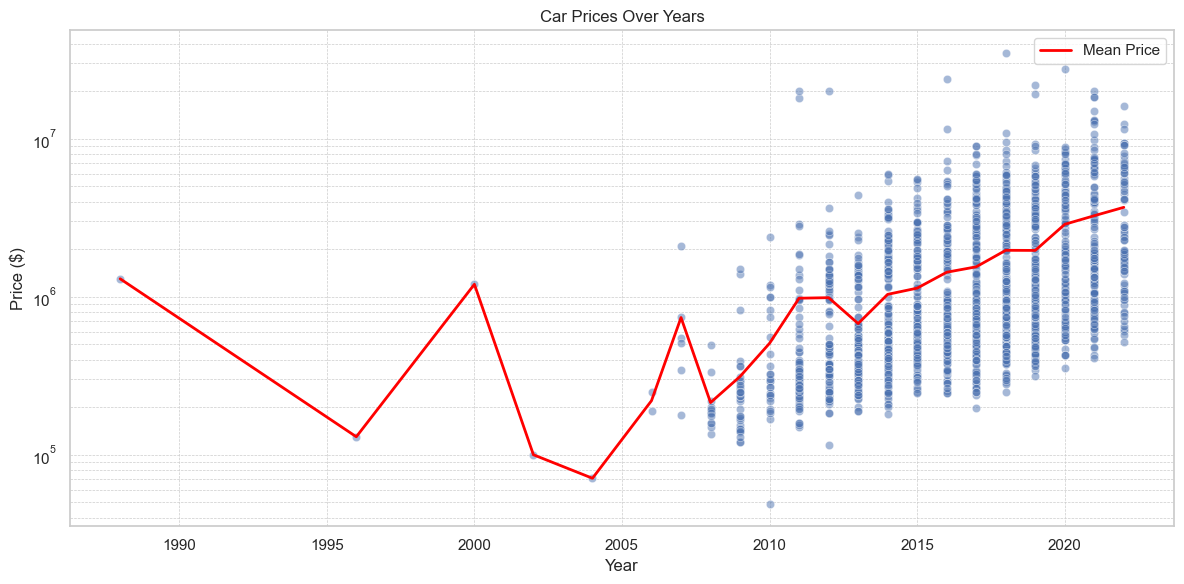
Delving further, we analyze the impact of location on pricing. The bar plot illustrating the average selling prices according to different locations. This plot reveals regional economic stories, potentially indicating differences in demand or the cost of living.

A graph of blue and black lines

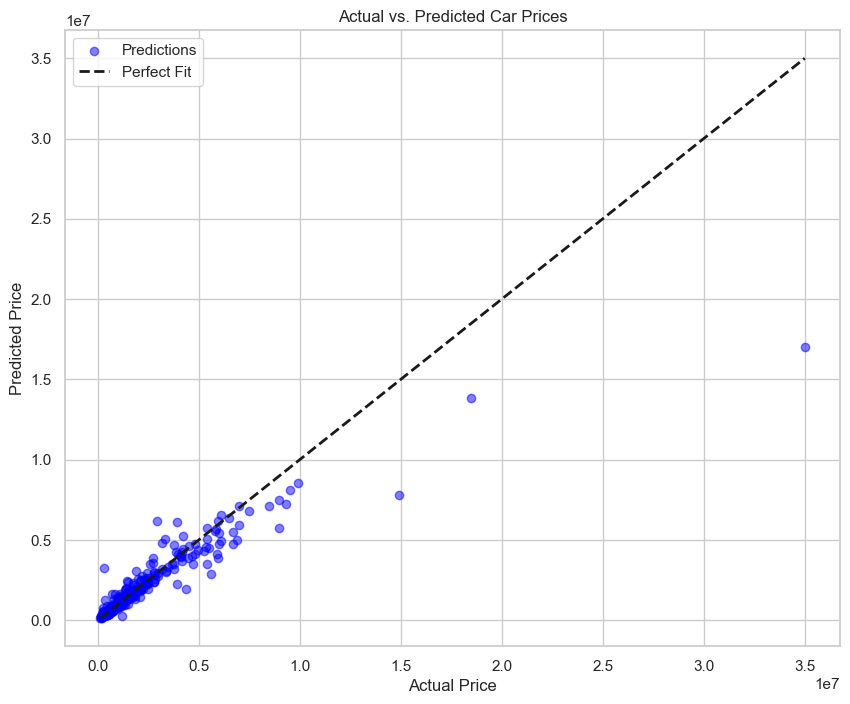
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Figure 5. Displays the average selling price categorized by location.

**Do Automobiles Get Any Cheaper?**

A scatter plot depicting the fluctuation of car prices over time, accompanied by a trend line representing the average price (Figure 6), effectively illustrates the progression of the market, showcasing the impact of technological advancements, inflation, and shifting consumer preferences.

  
Figure 6: Car Prices Over Time

**The Future of Used Car Market**



Many data points for cars under a million rupees are concentrated near the line of best fit. This suggests that the model accurately predicts car prices in this specific range.   
  
As actual prices rise, several data points deviate from the linear trend, particularly in the higher price ranges (above 1.5 million). These variations indicate that the model may have difficulty accurately forecasting cars with higher values.

**Conclusion**

The dataset leads us through narratives constructed by numbers, ranging from empirical evidence to anecdotal accounts. The text discusses a market that is affected by various factors, including economic, environmental, and temporal influences. These insights provide stakeholders in the automotive industry with the necessary information to make informed decisions, set strategic prices, and gain a deeper understanding of consumer preferences.