What Drives the Price of a Car?

The below chart displays the top 20 features influencing the (scaled) sales price of used cars. Each bar represents the coefficient value from a regression model, showing the direction (positive or negative) and importance of each feature's impact on car prices.

Key Findings and Suggestions:

1. Cars with larger engines (higher cylinder counts i.e. ‘cylinder\_code’) significantly increase the sale price.
   * **Suggestion**: Include vehicles with 6, 8, or more cylinders in your inventory, as they are highly valued by buyers, especially for performance or utility purposes.
2. Higher odometer readings (mileage) combined with the car’s age have a strong negative impact on price (‘odometer car\_age’). Higher mileage is consistently associated with a decrease in price (‘odometer’).

* **Suggestion**: Prioritize acquiring cars with low mileage, especially for older models, to maintain higher resale values.

1. Older cars see a notable decline in value, even without factoring in mileage or other features (‘car\_age’).
   * **Suggestion**: Focus on stocking newer models whenever possible. Highlight the condition and features of older vehicles to mitigate price reductions.
2. Certain combinations of transmission type and car age positively influence price (‘car\_age transmission\_code’). Vehicles with popular colors, specific transmission types, and drivetrain configurations tend to attract higher prices (is\_popular\_color transmission\_code drive\_code’).
   * **Suggestion**: Acquire cars with automatic transmissions, especially those paired with desirable colors or AWD/4WD configurations.
3. Popular exterior colors marginally increase sale price (‘is\_popular\_color’). Luxury vehicles or configurations positively influence pricing (‘is\_luxury’)
   * **Suggestion**: Stock luxury brands and highlight popular colors to attract buyers willing to pay a premium.

Link to notebook: <https://github.com/carl-rossi13/ML-AI-Course/blob/main/prompt_II-Final.ipynb>