

Insights

1. Fuel Type Trends

- **Regular and Premium Unleaded** remain dominant, but **Electric and Alternative Fuels** are growing in presence.
- **Flex-fuel** vehicles are less popular and declining.

2. Vehicle Style & Pricing

- **SUVs and Sedans** dominate sales volume.
- **Luxury SUVs/Sedans with Premium fuel** show **high MSRP** and strong profitability margins.

3. Consumer Preference Patterns

- Most consumers prefer cars with **4 doors, 4–6 cylinders**, and **moderate horsepower (150–250 HP)**.
- **Higher Avg MPG** correlates positively with MSRP in eco-friendly vehicles, especially hybrids/electrics.

4. Regression & Clustering Findings

- MSRP is most influenced by **Engine HP, Fuel Type**, and **Vehicle Style**.
- Clusters reveal **3 main buyer segments**:
 - Budget daily-use cars
 - Mid-range family cars
 - High-end luxury/tech-focused vehicles







Outcomes

- The model helps predict car pricing based on selected features with reasonable accuracy (using RMSE).
- Market segmentation reveals which combinations of features correlate with **high profit** and **strong demand**.

- Visualization clarifies which features and categories align with **growing consumer interest** (e.g., electrification, fuel efficiency).
-

Recommended Car for the Manufacturer

Based on analysis, the **ideal car** to focus on would be:

-  **A mid-sized Premium SUV**
 -  **Plug-in Hybrid or Electric**
 -  **200–250 HP with 4–6 cylinders**
 -  **High Avg MPG or electric range**
 -  **4-door, 5-seater configuration**
 -  **Priced in the \$30,000–\$45,000 MSRP range**
-

Why This Works

- Balances **fuel efficiency**, **power**, and **market demand**.
- Taps into the **growing interest in electric/hybrid vehicles**.
- SUV category meets the needs of **families**, **urban drivers**, and **premium buyers**.
- Positioned well for both **profitability** and **environmental standards**.