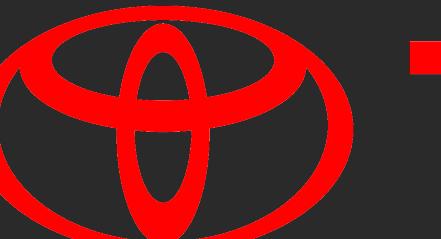


A photograph of a winding asphalt road through a dense forest. Sunlight filters through tall evergreen trees, creating bright highlights on the road and surrounding greenery. The road curves away from the viewer towards a bright horizon.

# ACCELERATING OUR EV FUTURE

Increasing electric vehicle adoption  
through machine learning

# EV PROMISES BY 2030:

 TOYOTA

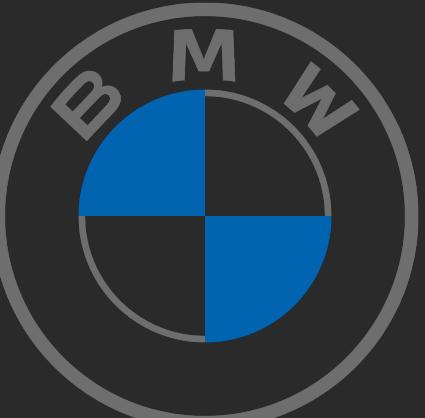
 KIA



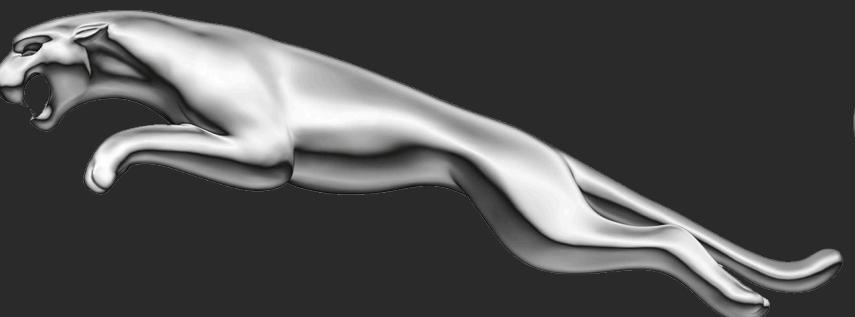
mazda



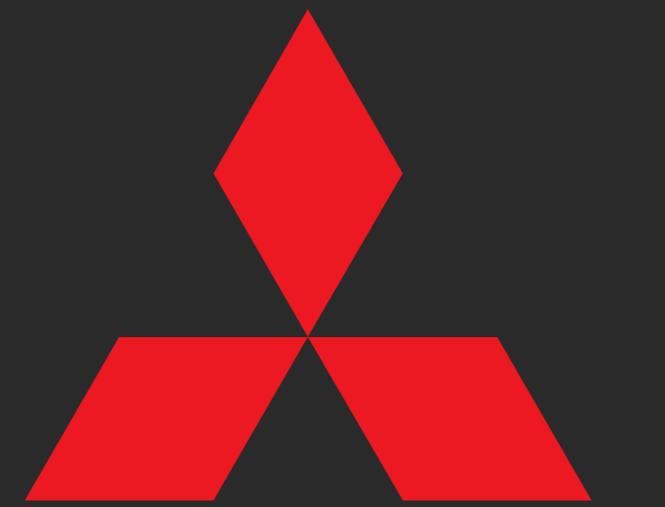
HYUNDAI



 Ford



JAGUAR



MITSUBISHI



VOLVO



A silver Tesla Model S is shown from a side-front angle, driving along a winding asphalt road. The road cuts through a landscape of rolling hills and mountains, with a vibrant sunset or sunrise painting the sky in shades of orange, yellow, and blue. The car's sleek lines and modern design are highlighted against the natural beauty of the surroundings.

HOWEVER...

EVs represented

**2.6%**

of global car  
sales in 2019

# PROJECT GOAL :

Identify car features that predict **high consumer ratings** to guide future EV manufacturers' design decisions.

**AREN'T CONSUMER STAR REVIEWS  
NOTORIOUSLY BIASED?**

# YES. BUT THEY MATTER.



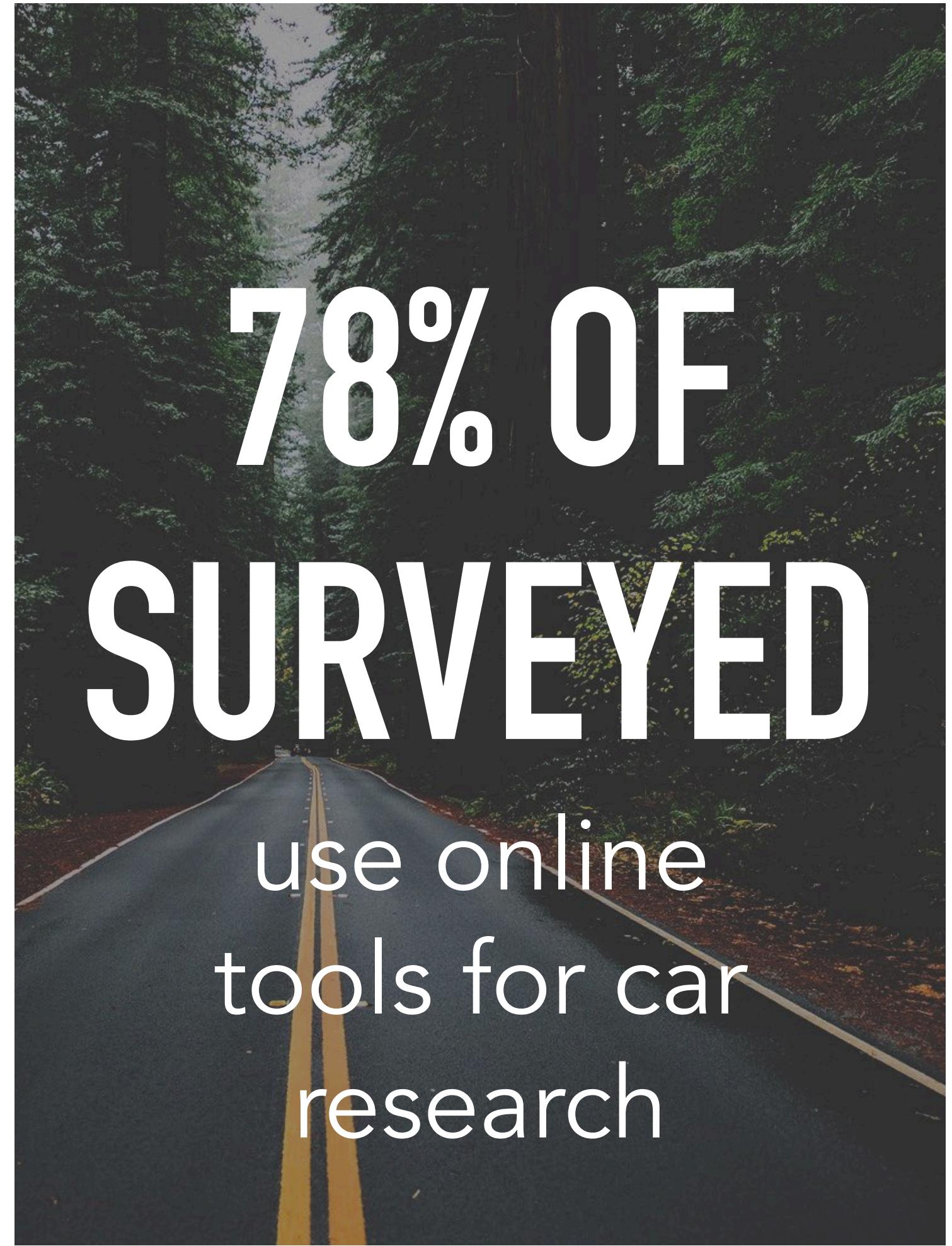
**2ND MOST  
TRUSTED**

source of  
brand info



**92% OF  
BUYERS**

trust earned  
media



**78% OF  
SURVEYED**

use online  
tools for car  
research

# THE DATA

Kelley Blue Book THE TRUSTED RESOURCE

Home / Car Finder

## Car Finder

Simply filter and sort by the features most important to you and you'll find a huge selection of vehicles that meet your needs. With this handy car finder, your next car is a click away.

Sort By Best Match

Refine Your Search

4,922 matches [Reset all](#)

Price Range: Min price \$0 to Max price No limit

Condition: New  Used  Certified Pre-Owned

Model Years: 2010 - 2022 [Reset all](#)

Fuel Economy (MPG Combined): Any  20+

**Sedan**  Compare

**2022 Hyundai Elantra**



\$20,855 Starting Price [See cars for sale](#)

4.8 ★ Expert 3.8 ★ Consumer

37 MPG Combined Fuel Economy

The spacious and safe 2022 Hyundai Elantra has shaken up the compact sedan class with bold styling, generous equipment, and affordability. [See Details](#)

**SUV**  Compare

**2022 Kia Seltos**



\$23,665 Starting Price [See cars for sale](#)

4.8 ★ Expert 4.2 ★ Consumer

29 MPG Combined Fuel Economy

With some newly standard safety tech and a stylish Nightfall model, the Kia Seltos subcompact SUV has become even more competitive for 2022. [See Details](#)

Kelley Blue Book THE TRUSTED RESOURCE

Home / Hyundai / Elantra / 2022

Year 2022 [Change Vehicle](#)

## 2022 Hyundai Elantra

Washington, DC 20001 [Change Vehicle](#)

4.8 ★ Expert 3.8 ★ Consumer [Write a Review](#)

[Build & Price](#) [See Cars for Sale](#) [View Gallery](#)

[Reviews](#) [Cars For Sale](#) [Photos](#) [Specs & Features](#) [Safety](#) [Styles](#)

## 2022 Hyundai Elantra Review

By Colin Ryan Updated September 13, 2021

**Pros**

- Well-equipped base model
- Spacious interior
- Spirited exterior
- Hybrid & sporty versions
- New Elantra N has 276 horsepower, manual gearbox

**Cons**

- So-so base engine
- Smaller trunk than the class best

**What's New?**

More Research Tools [2022 Hyundai ELANTRA](#)



[Build & Price](#) [Incentives](#) [Inventory](#) [Learn More](#)

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# 2022 HYUNDAI ELANTRA



## Dimensions, Weights & Capacities

Curb Weight	2868 pounds
EPA Passenger	99.4 cubic feet
EPA Total Interior	113.6 cubic feet
Fuel Capacity	12.4 gallons
Front Head Room	40.6 inches
Front Leg Room	42.3 inches
Max Seating Capacity	5

## 2022 Hyundai Elantra KBB.com Consumer Reviews

**3.8** Consumer Rating Based on 17 Reviews

**70%** Recommend this vehicle

## Technology

- Bluetooth Wireless Technology
- Cruise Control
- Hands Free Phone
- Remote Keyless Entry
- Smartphone Interface
- Touch Screen Monitor
- USB Port
- Voice Recognition System

## Specifications

Fuel Economy  
City 33/Hwy 43/Comb 37 MPG

Max Seating  
N/A

Fuel Type  
Gas

Horsepower  
147 @ 6200 RPM

Basic Warranty  
5 years or 60000 miles

Cargo Space  
14.2 cubic feet

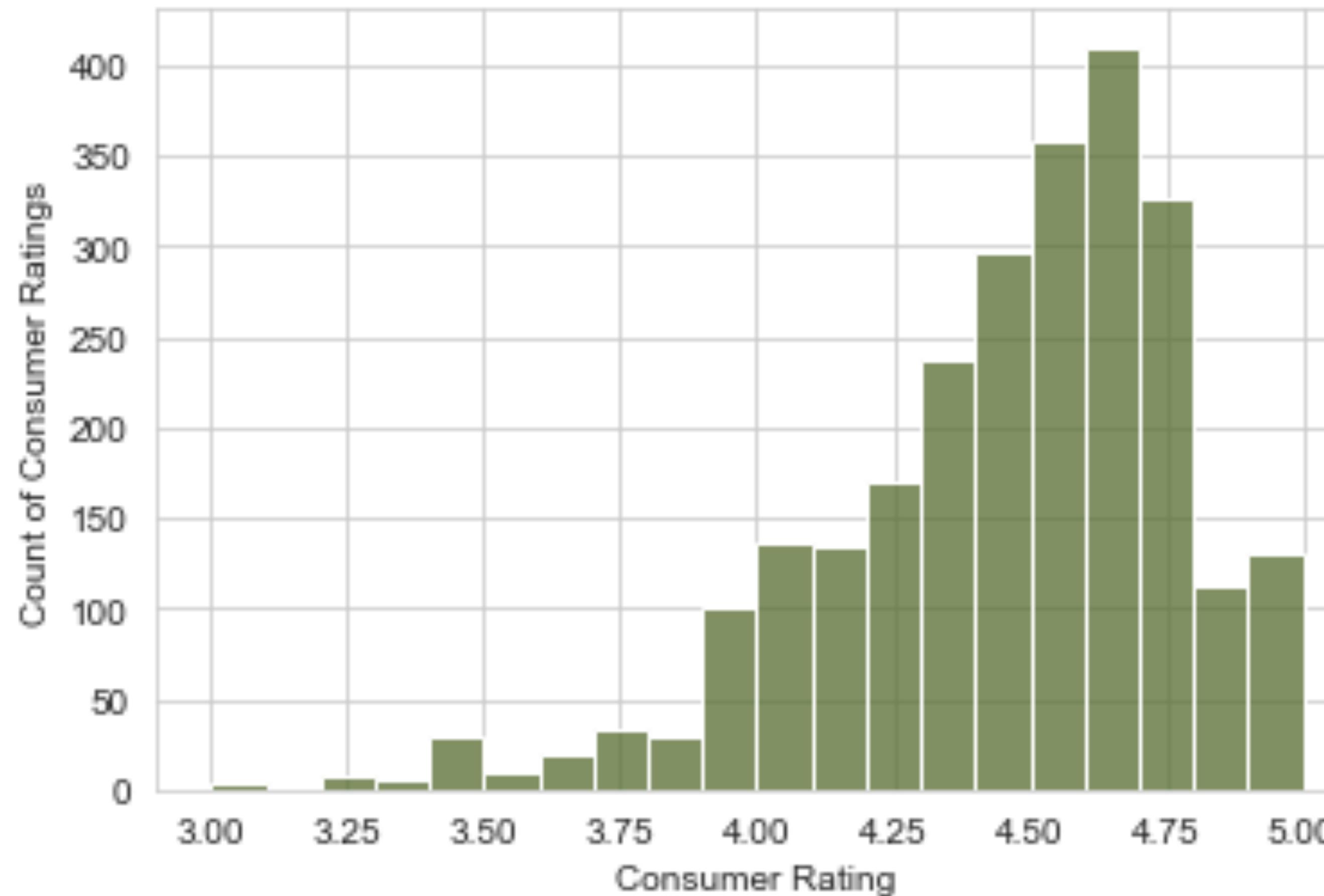
## Fuel Economy

City	33 MPG
Highway	43 MPG
Combined	37 MPG

## Mechanical

Drivetrain	FWD
Transmission Type	Automatic
Recommended Fuel	Regular
Hill Start Assist	Available

# DISTRIBUTION OF TARGET: CONSUMER RATINGS

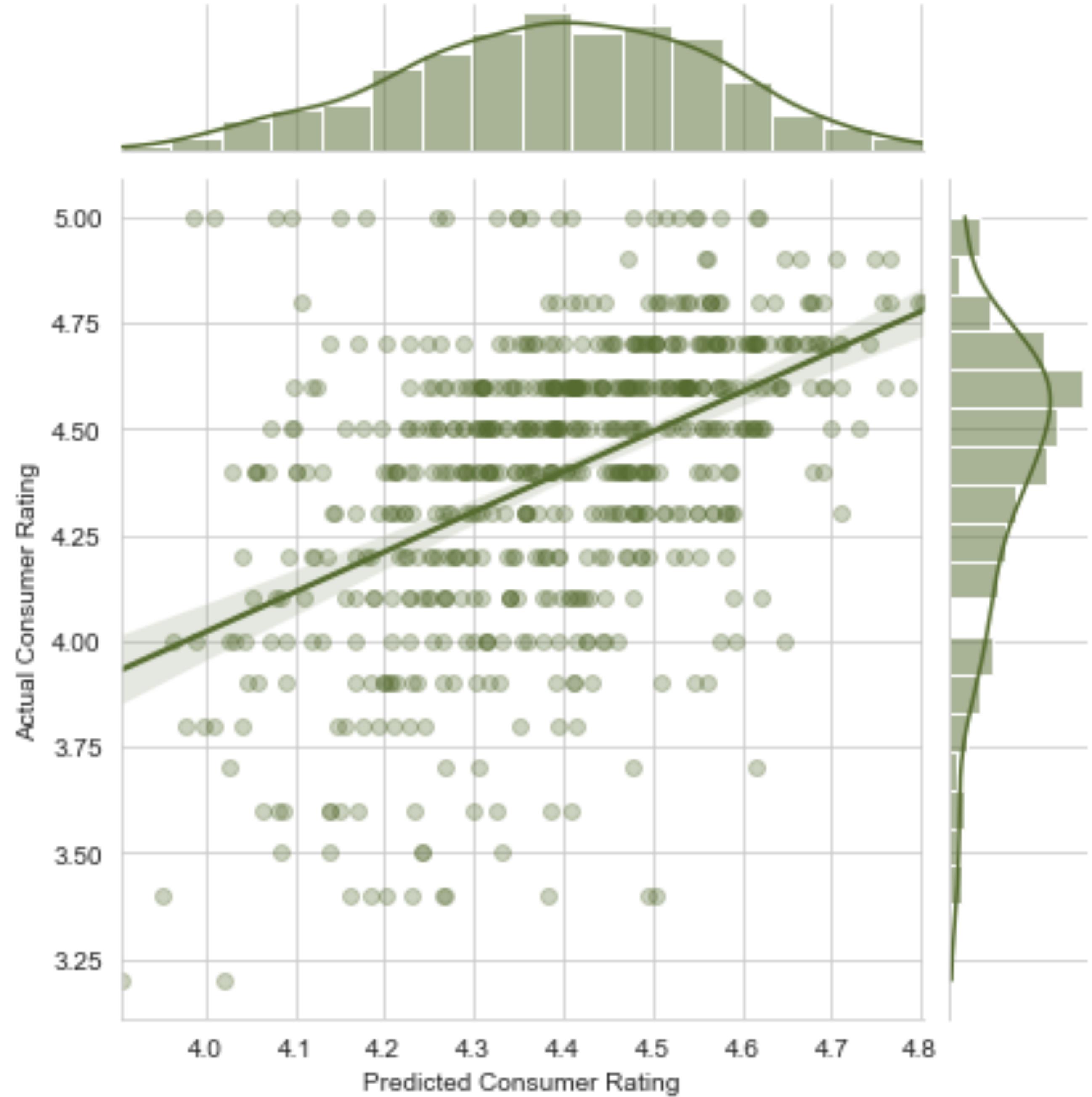


Strongest feature correlations:

- 0.21** - age
- 0.21** - trunk capacity
- 0.14** - peak horsepower
- 0.14** - entertainment features
- 0.14** - seating capacity

# FINAL MODEL PERFORMANCE:

Lasso Regression  
 $R^2 = 0.218$   
 $MAE = 0.23$  stars



# PREDICTION SAMPLES

2022 Ram 1500 Classic Quad Cab

**True Rating: 4.4 Stars**

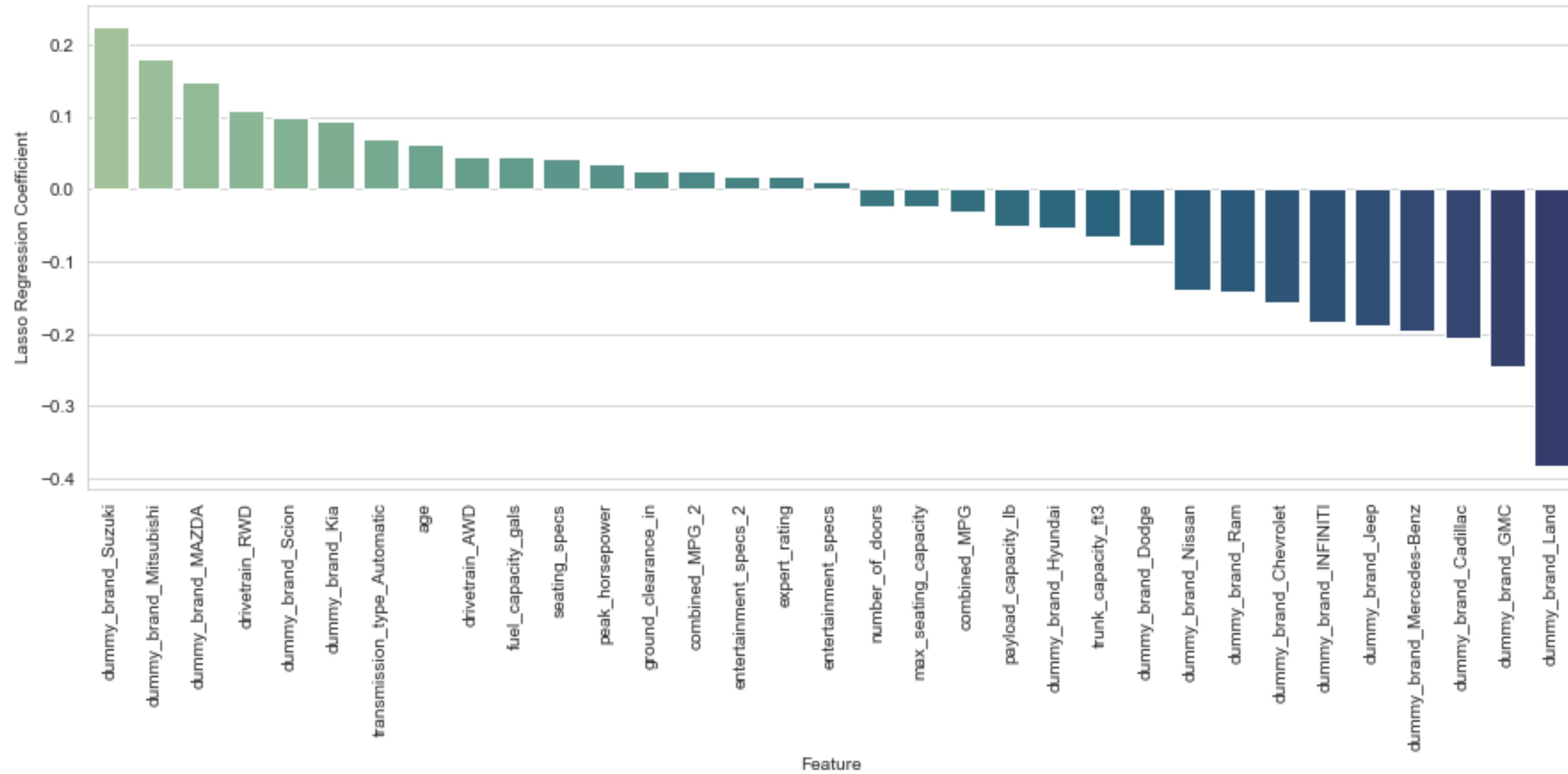
**Predicted: 4.4 Stars**

2018 Cadillac Escalade

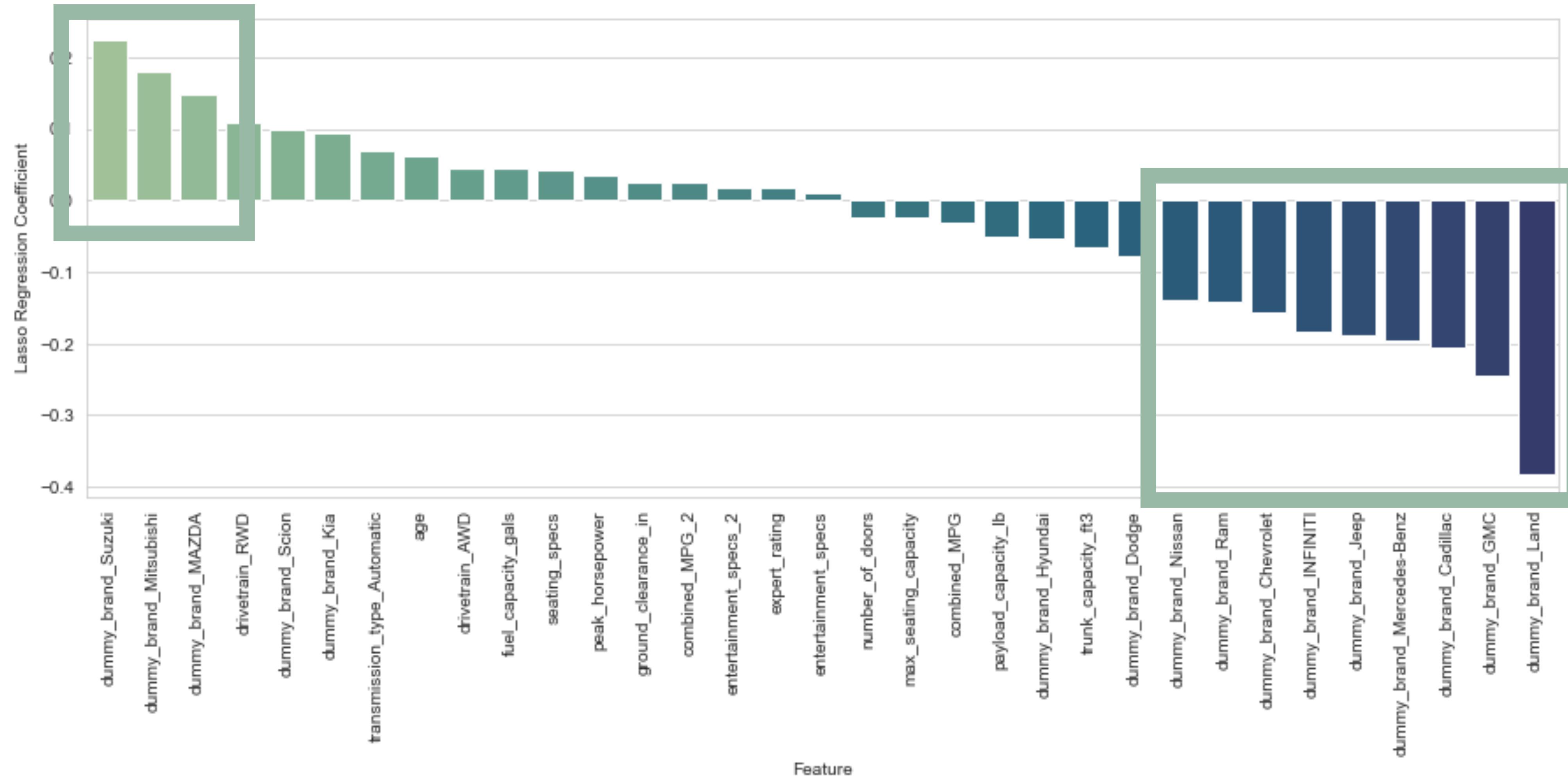
**True Rating: 3.4 Stars**

**Predicted: 4.38 Stars**

# USING COEFFICIENTS FOR EV DEVELOPMENT



# USING COEFFICIENTS FOR EV DEVELOPMENT: BRAND



# RECOMMENDATION 1:

Brand-specific research -  
best and worst practices

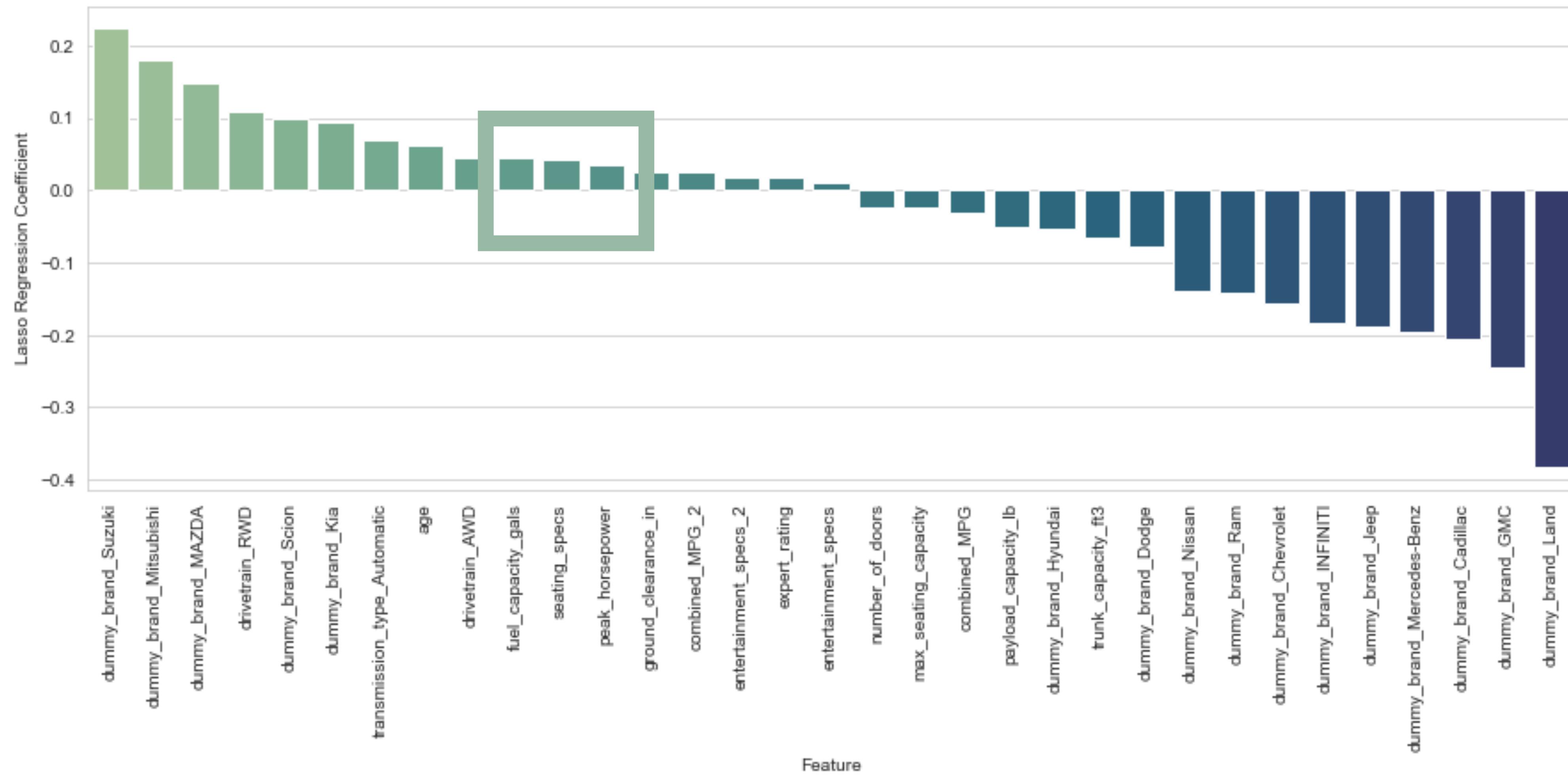


MOST POSITIVE: SUZUKI, MITSUBISHI

MOST NEGATIVE: LAND ROVER, GMC



# USING COEFFICIENTS FOR EV DEVELOPMENT: FEATURES



## RECOMMENDATION 2:

Feature prioritization in car design

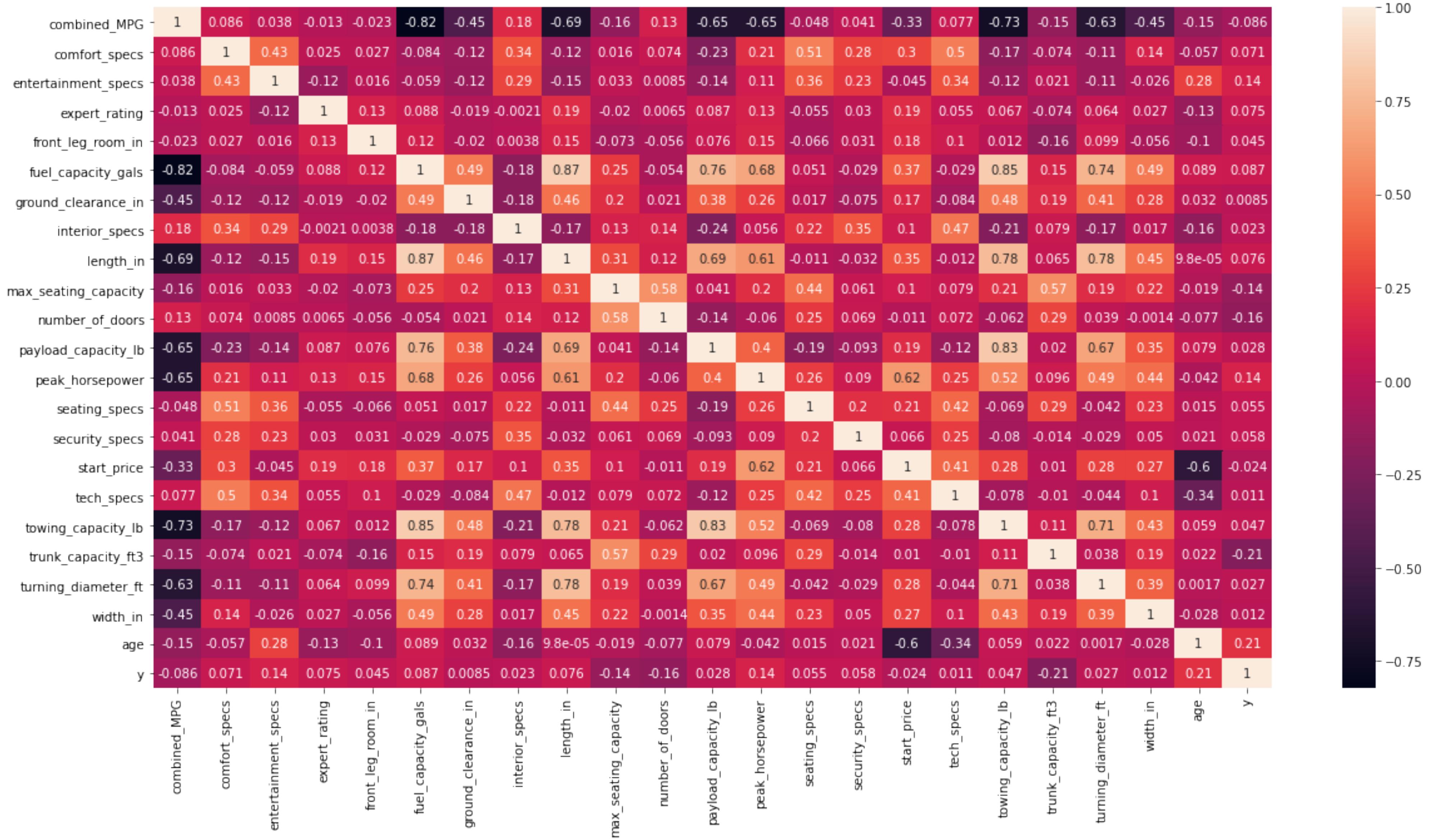


# FUTURE WORK

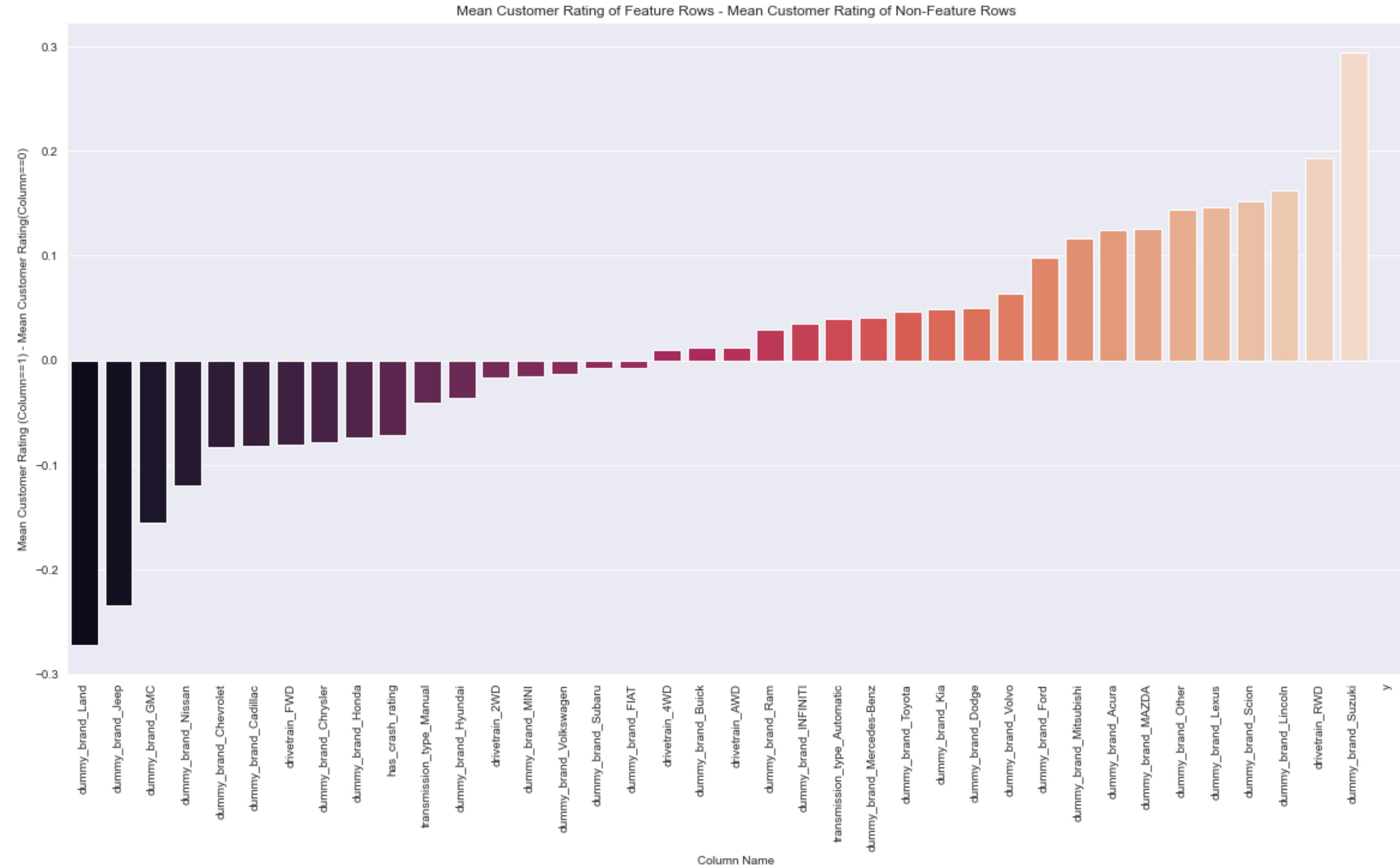
- Use NLP to identify key themes of reviews
- Aggregate reviews from a variety of sites
- Incorporate sales data

# APPENDIX

# CORRELATION HEATMAP



# CATEGORICAL VARIABLE IMPORTANCE



# FINAL MODEL RESIDUALS

