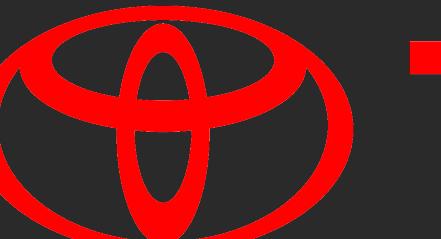


A photograph of a winding asphalt road through a dense forest. Sunlight filters through tall evergreen trees, creating bright highlights on the road and surrounding greenery. The road curves away from the viewer towards a bright horizon.

ACCELERATING OUR EV FUTURE

Increasing electric vehicle adoption
through machine learning

EV PROMISES BY 2030:

 TOYOTA

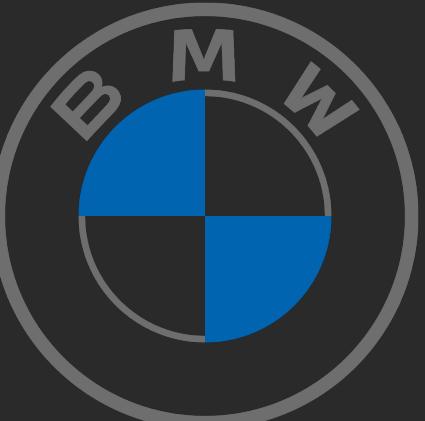
 KIA



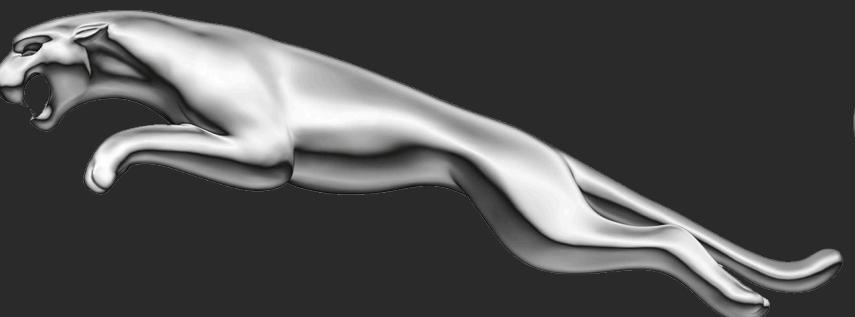
mazda



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.



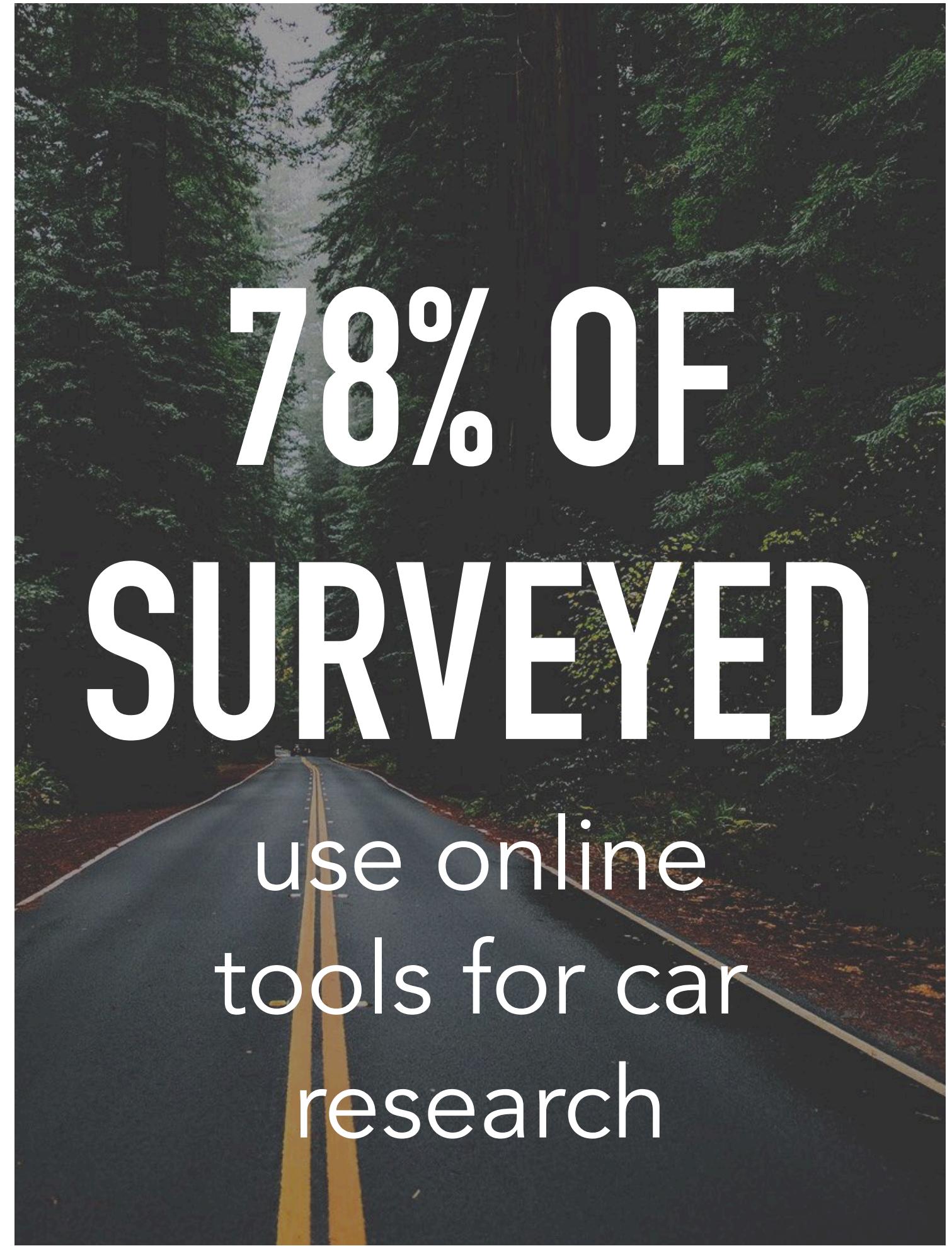
**2ND MOST
TRUSTED**

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

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](#)

Advertisement

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

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

Technology

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

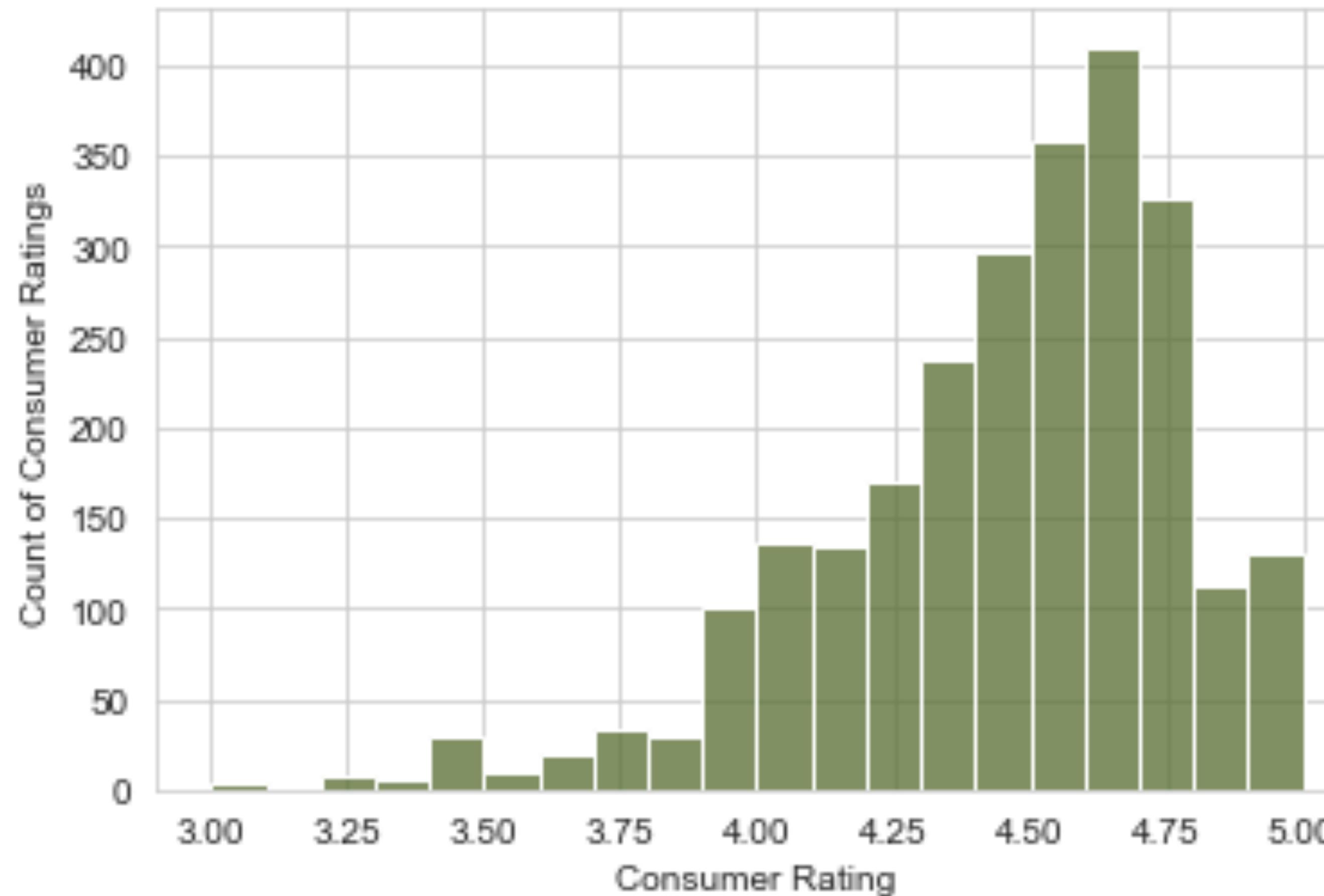
Fuel Economy

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

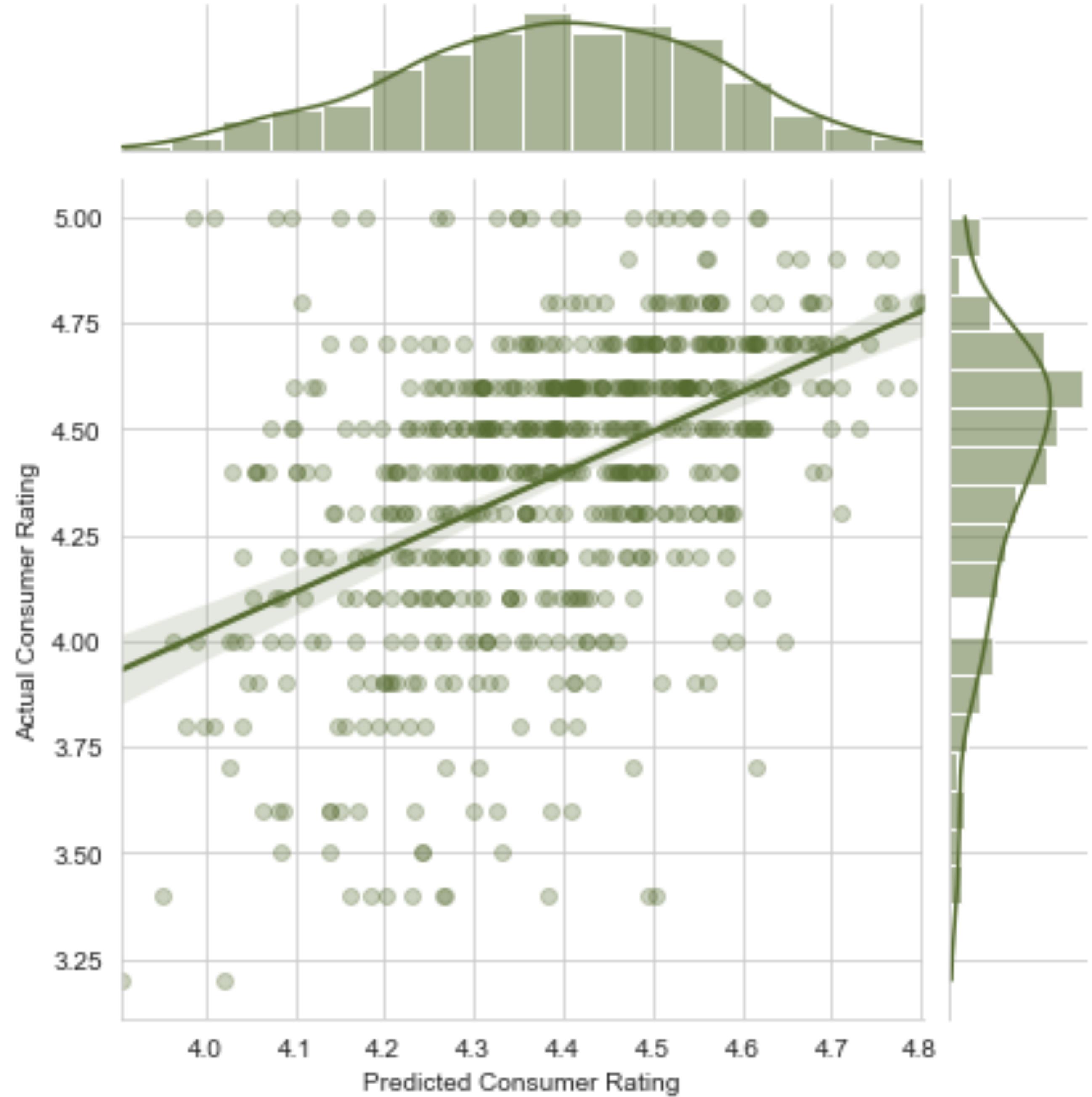


Strongest feature correlations:

- 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

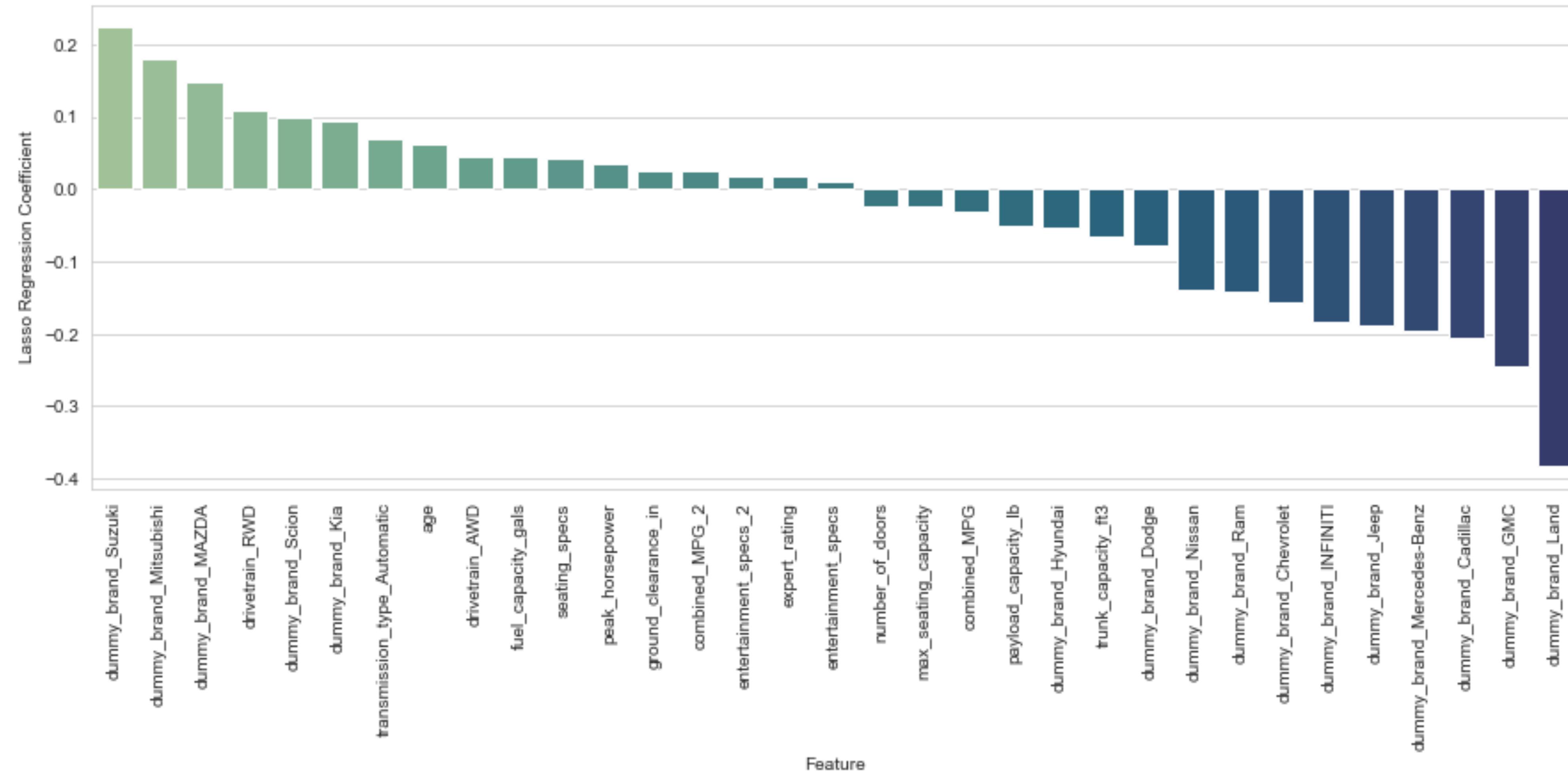
Predicted: 4.4 Stars

2018 Cadillac Escalade

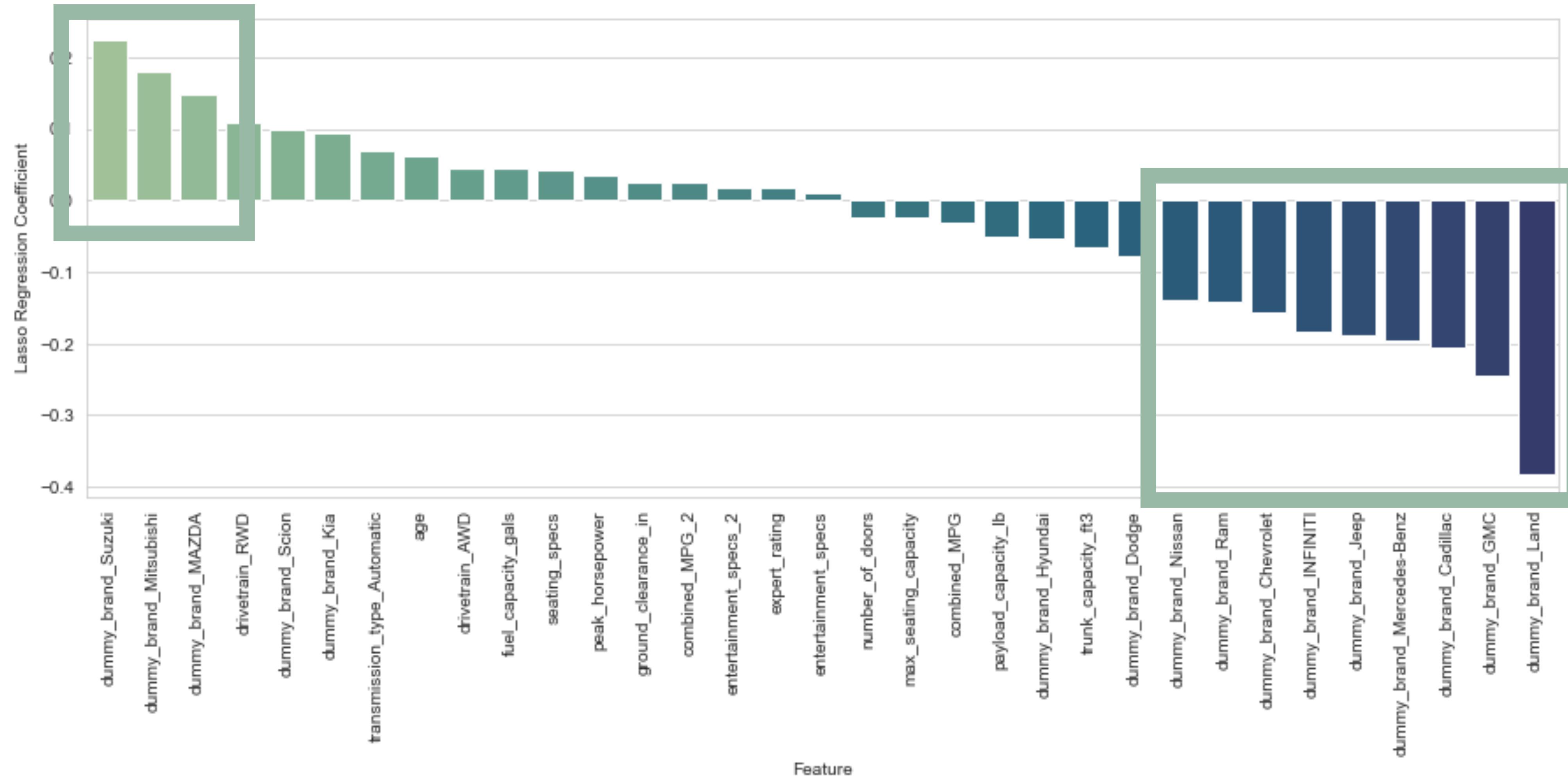
True Rating: 3.4 Stars

Predicted: 4.38 Stars

USING COEFFICIENTS FOR EV DEVELOPMENT



USING COEFFICIENTS FOR EV DEVELOPMENT: BRAND



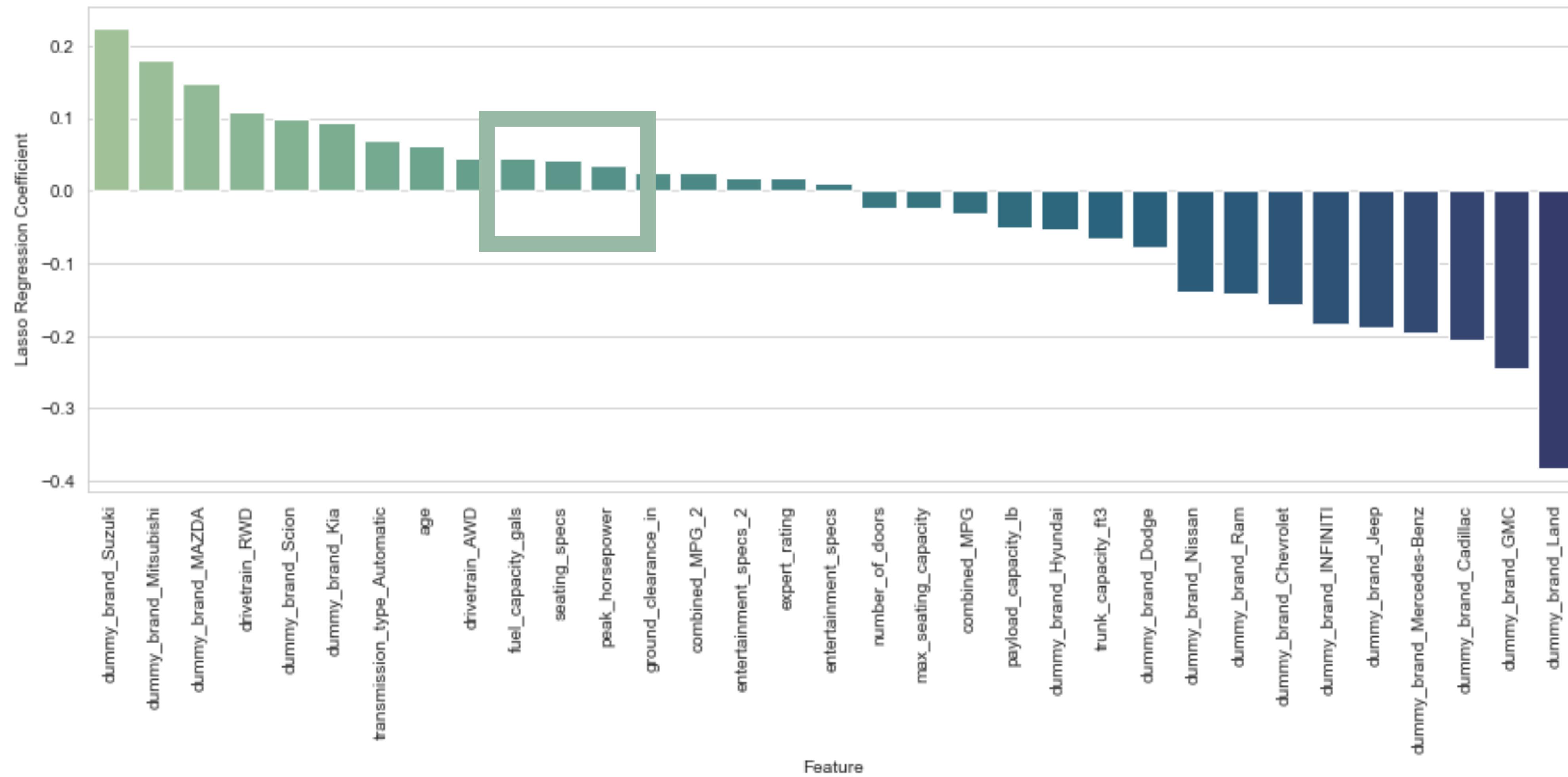
RECOMMENDATION 1:

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

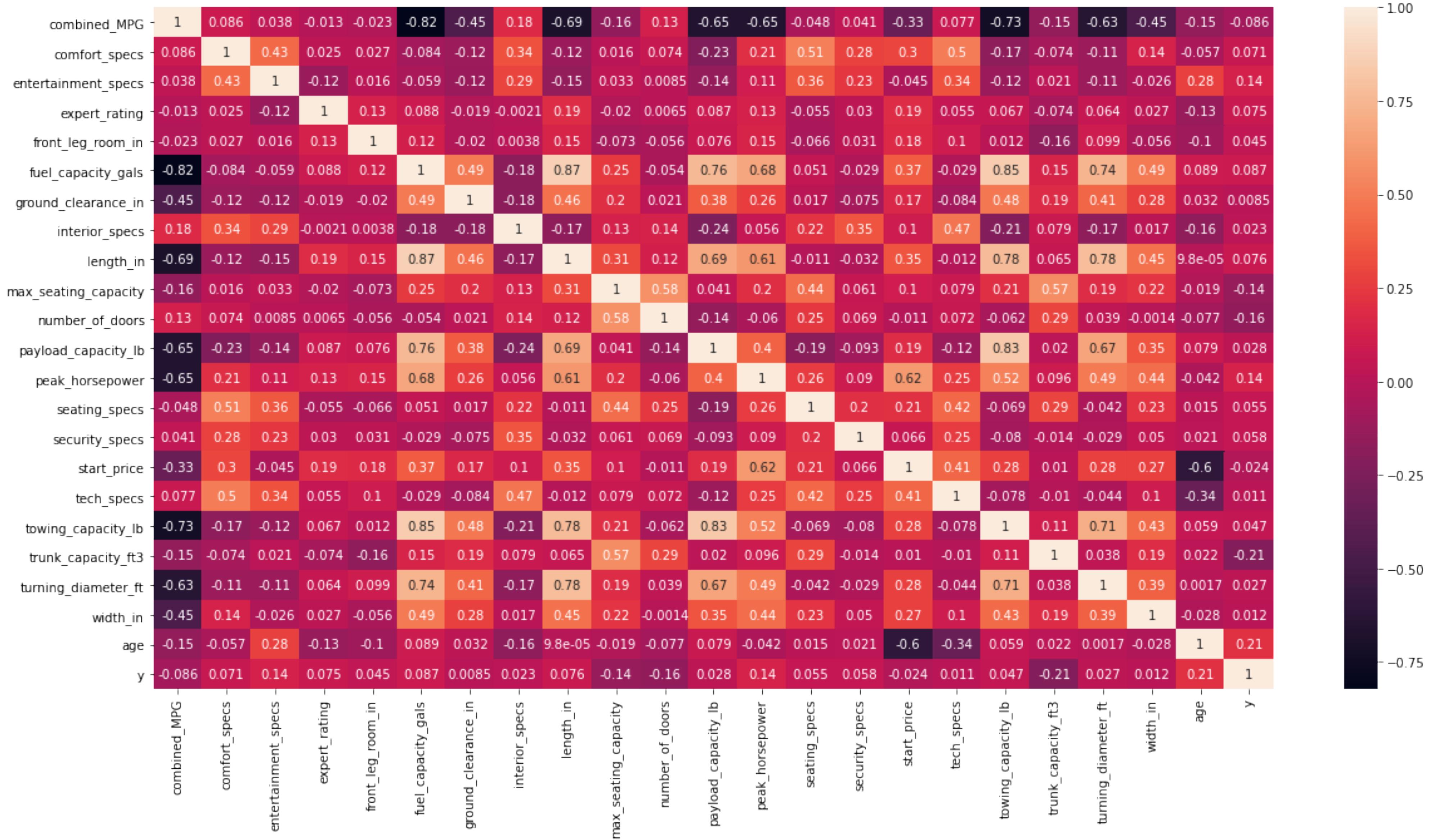


FUTURE WORK

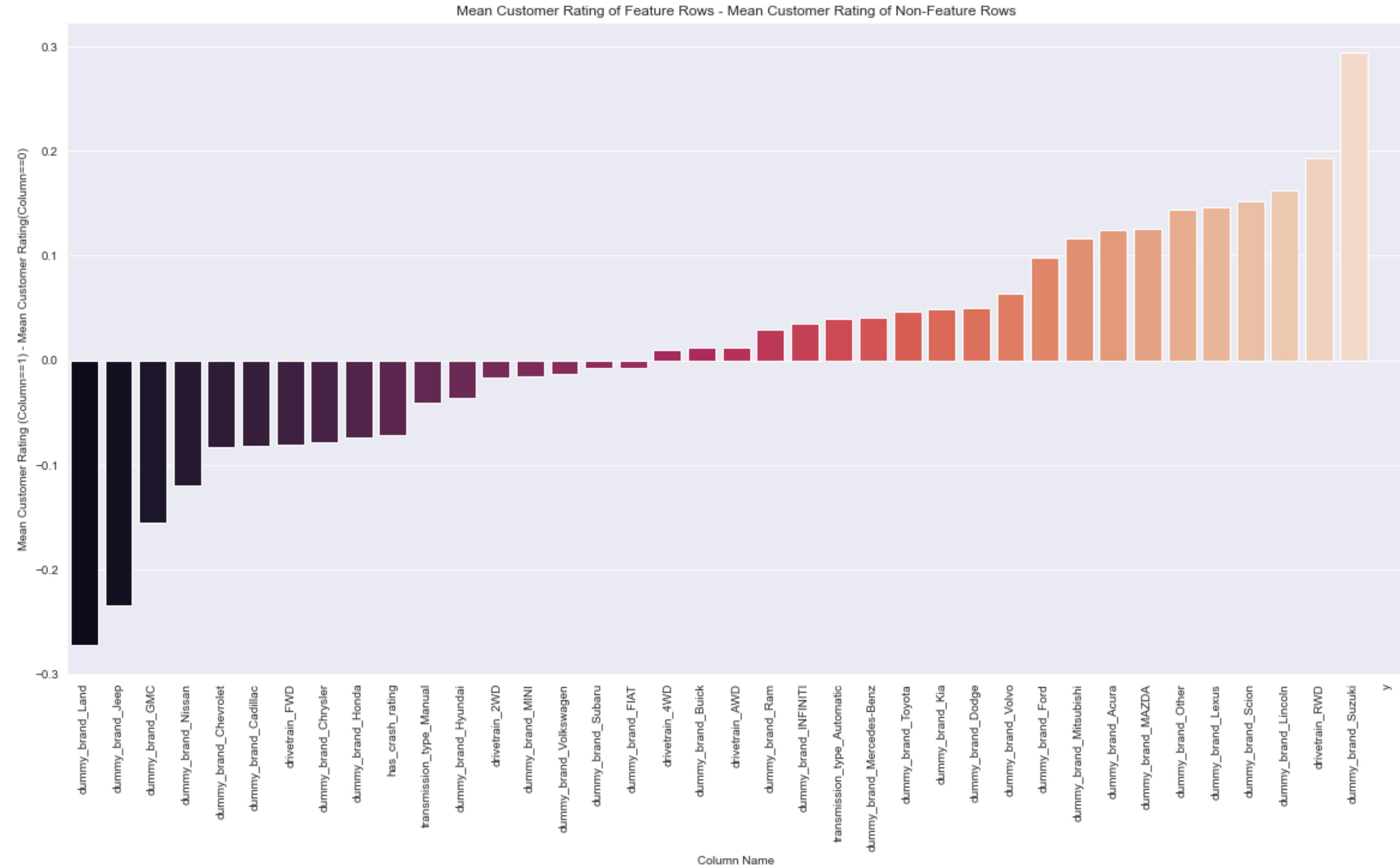
- Use NLP to identify key themes of reviews
- Aggregate reviews from a variety of sites
- Incorporate sales data

APPENDIX

CORRELATION HEATMAP



CATEGORICAL VARIABLE IMPORTANCE



FINAL MODEL RESIDUALS

