

StatPack

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1. Motivation

This analysis provides geographical insight on how customers on Edmunds.com shop. In particular, how far were people traveling to acquire their cars and how much money were they paying for a specific car relative to corresponding cars sold in other states? Were people missing out on good deals a long distance away after they bought their cars? To address these questions in a focused and controlled manner, we linked and analyzed the visitors and transaction data.

2. Methods

To determine whether people missed out on cheaper deals, we coded a dynamic app using R Shiny (Leaflet) that displays an interactive map of the difference between MSRP and retail price across continental states. We render a map that fills states by average savings (MSRP - selling price) for cars specified by one or more inputs (including body type, condition, etc.) from all 50 states. In addition, we tabulated distances between dealer and buyer location using R (zipcode). To visualize actual user trends, we overlaid a plot of the linkages. When taking both the deals and linkages in conjunction, we determined if customers make cost-effective decisions about where they purchased cars from Edmunds.

3. Results

Our analysis allows us to discover findings that:

Help us understand how customers behave:

- Ex. **93%** of the people in Texas bought their vehicle in state while **7%** of the people went out of state.

Assist customers in finding the best deals:

- Ex. The cheapest Honda Civic purchased was in Indiana for an average price of **\$12,700**.

Identify top dealer markets:

- The top 5 states that have the most sales:
CA(23.706%), MA(8.815%), NY(8.025%), FL(7.162%%), NJ (6.929%).
- The top 5 states that have the most savings (median):
AL(11.675%), TN(10.498%), LA(10.475%), MS(9.694%), KS(9.671%)
- Surprisingly, the top 5 states that has the most car sales were not the states offering the best price, using this data we can better help customers to find their matching deals.

Find out how far customers will go to acquire a specific car:

- Median of people travelling to get their car is **13 miles**.
- Top 3 popular brands that people are willing to travel distances to purchase
Mercedes (13.5 m), Ford (13.5 m), and Nissan (12.4 m).

4. Conclusion

Data from past transactions can be used as a resource tool for the customer when displayed intuitively. By designing a customizable application that will show where the best deals from prior transactions were located, customers can choose the car that they desire and determine where they should purchase the car based on this information. Our hope is that this method of displaying information can help customers make smart, data-driven decisions when car buying. Our methods also have allowed us to quantify and recognize what measures the customer will take to save money.