More charging infrastructure may not mean more people see it

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Introduction: Growth of EV charging Infrastructure and Sales

U.S Public and Private EV Charging Infrastructure and Sales

- Count of Station Locations
- Count of EV Sales

Source: Alternative Fuels Data Center
Does charging infrastructure have an impact on EV sales?

In this framework, EV charging infrastructure is a key facilitator for EV market growth.
First, we allow for the relationship between infrastructure to covary.
Model Framework

Then, we add people to the model, starting with the question, “Is more charging associated with more people seeing charging?”
Model Framework

We add further information about people and relationships between Seeing EVSE, BEV (PHEV) Consideration, and variation in charging and sales.
Measuring EV Purchase Consideration

- **Own or have owned**
  - PHEV: [Bar chart value]
  - BEV: [Bar chart value]

- **Actively shopped**
  - PHEV: [Bar chart value]
  - BEV: [Bar chart value]

- **Gathered info; nothing serious**
  - PHEV: [Bar chart value]
  - BEV: [Bar chart value]

- **Idea occurred; no action**
  - PHEV: [Bar chart value]
  - BEV: [Bar chart value]

- **Haven't; may**
  - PHEV: [Bar chart value]
  - BEV: [Bar chart value]

- **Haven't; won't**
  - PHEV: [Bar chart value]
  - BEV: [Bar chart value]
Do people see electric vehicle charging spots in the parking lots and facilities they use?

- Yes, I've seen them at several places
- Yes, I've seen them at a few places
- Yes, I've seen them at one place
- No, or not sure
Model Results

The impact of chargers per capita at the zip code level on seeing EVSE is not statistically different from zero.
Model Results

The impact of chargers per capita at the zip code level on BEV and PHEV purchase consideration is **not statistically different from zero**.
Model Results

EV sales per capita at the zip code level has a **significant** impact on seeing EVSE
The relationship between BEV/PHEV purchase consideration and seeing EVSE is **not statistically different from zero**.
Model Results

Significant relationship between chargers and EV sales per capita at the zip code level
Model Results

Consumer knowledge, attitudes, and demographics have a **significant** impact on purchase consideration and seeing EVSE.
EV sales per capita at the zip code level has a **significant** impact on BEV purchase consideration.
The impact of EV sales per capita at the zip code level on BEV and PHEV purchase consideration is **not statistically different from zero**.
Final PHEV Model

Consumer knowledge, attitudes, and demographics → All chargers per capita → Seeing EVSE → PHEV purchase consideration → EV sales per capita
Conclusion

• Does living in a region with more chargers per capita positively correlate with people reporting seeing EV charging?
  • NO

• Does seeing charging infrastructure positively correlate with purchase consideration?
  • NO

• Does living in a region with more chargers per capita positively correlate with purchase consideration?
  • NO

• Prior interest in EVs, as well as demographic factors, are significant in determining whether consumers see the charging infrastructure around them
Thanks for listening

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