

Overcoming Present Bias to Increase the Adoption of Electric Vehicles

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URGENT NEED TO REDUCE CARBON EMISSIONS

4.25%

of total world population is the
US population

15%

of global CO2 emissions in
2020 **come from the US**

28%

of GHG emissions in the US
comes from the
Transportation sector

ELECTRIC VEHICLES (EVs)

Federal gov.

- Up to \$7,500 tax credits

State gov.

- Rebates, HOV lanes access, free parking, free charging

Low EV Adoption

- 2% in 2020
- 0% → 2% in 10 years

Car companies

- Huge investment
- Transforming

BEHAVIORAL BARRIER, BEHAVIORAL SOLUTION

High Front Cost

- Savings in long-term operational costs can offset the price premium

Present Bias

- Anchor the high cost premium
- Ignore the long-term savings

5-Year Fuel Cost Savings

- “5-year” → time frame?
- “Savings” → message framing?

Time Frame

- People like rewards issued with **less delay**

Message Framing

- **Loss-framed messaging** can make people less present-biased

HYPOTHESES

H1: Using loss-framed messaging can increase people's intention to purchase an EV more than using gain-framed messaging.

H2: Describing rewards in a shorter time frame can increase people's intention to purchase an EV more than in a longer time frame.

1. Recruiting participants offline
 - a. Why partner with Nissan and run the experiment in CA? Check the paper!
2. Online experiments
 - a. Preferred car type: a car or a SUV?
 - b. Read a scenario of Joe
 - i. CV *Rogue* vs. EV *Ariya* (SUV)
 - ii. CV *Altima* vs. EV *Leaf* (car)
 - c. Answer the question: *“On a scale of 1 to 5, how likely do you think Joe will purchase the electric vehicle?”*
 - d. Complete questionnaires
 - i. Pro-environmental attitudes, time preference, risk preference
 - ii. Age, gender, income, education, transportation habit

		Message Framing	
		Gain Frame <i>"Driving an EV will..."</i>	Loss Frame <i>"Driving a CV will..."</i>
Time Frame	Monthly	<i>"...make Joe save \$x every month"</i>	<i>"...make Joe lose \$x every month"</i>
	Annually	<i>"...make Joe save \$x every year"</i>	<i>"...make Joe lose \$x every year"</i>
	Five-Year	<i>"...make Joe save \$x every five years"</i>	<i>"...make Joe lose \$x every five years"</i>
	Ten-Year	<i>"...make Joe save \$x every ten years"</i>	<i>"...make Joe lose \$x every ten years"</i>

This study is valuable.

- Limitations? Go check the paper!
- Implication 1
 - contribute to the lacking research in studying solutions to present bias in the context of EV adoption
- Implication 2
 - stronger external validity than past studies
- Implication 3
 - provide valuable insights to Nissan and other automaking companies
 - explore the use of cheap and easy-to-implement message techniques