

# Effects of Identity Signaling in the EV Purchasing Decision

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Convened by:

# Impediments to Selecting an EV Over a Gasoline Vehicle

1. **Price premium:** higher up-front outlay for EV (thousands of dollars)
2. **Inconvenience:** additional time and anxiety associated with EV charging



# Self-Identity Affects EV Purchase Choice



**“I will choose the EV because we need to save the planet”**

**Environmentally concerned**

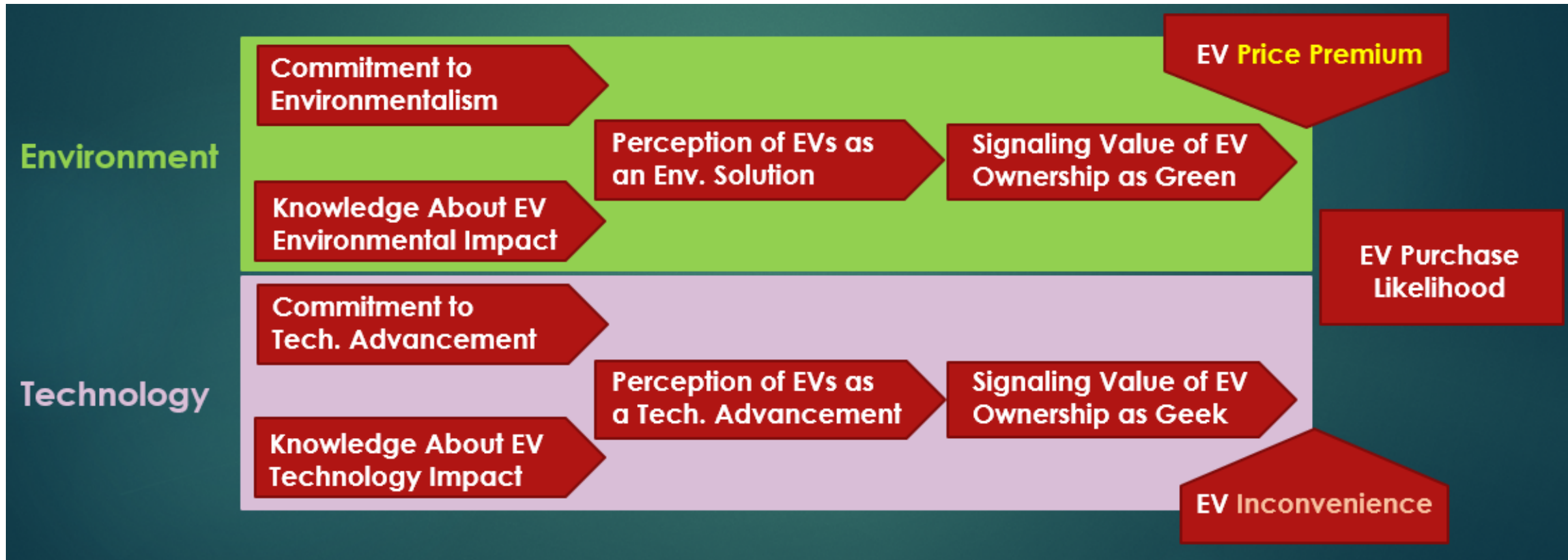


**“I will choose the EV because the technology is cool”**

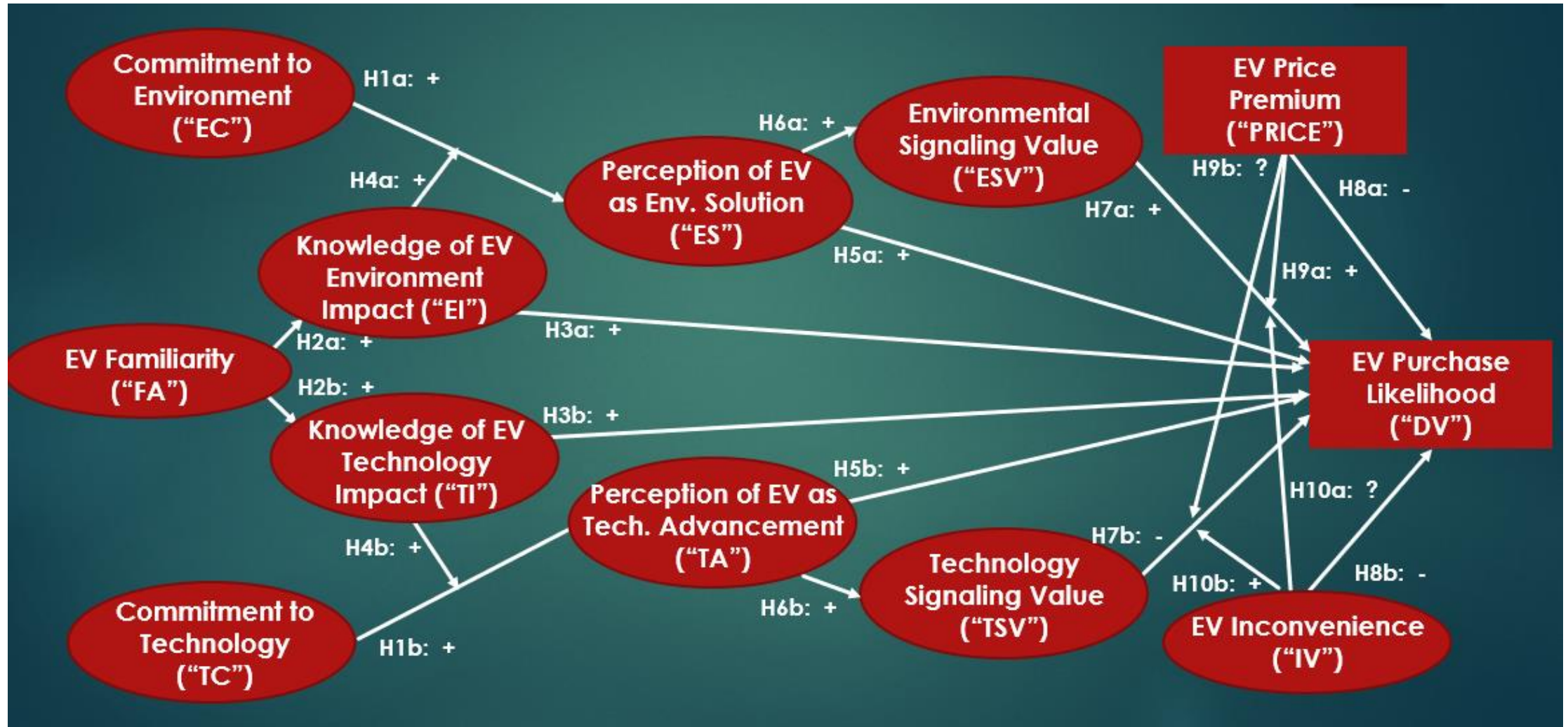
**Technology enthusiast**

**Both may prefer EV purchase, but for different reasons, which in turn may be subject to different influences**

# Factors Affecting EV Purchase Likelihood



# Conceptual Model and Hypotheses

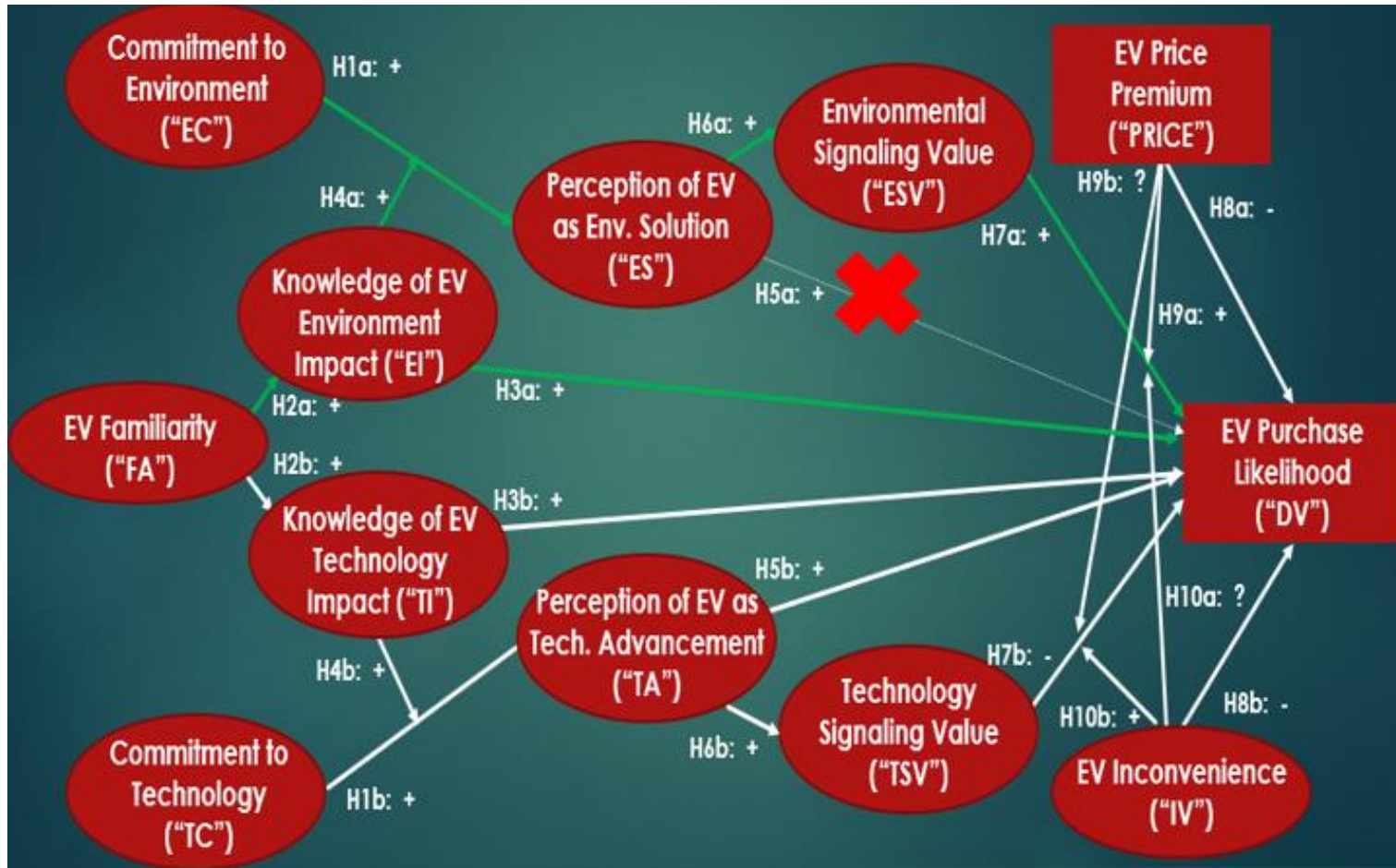


# Research Methodology

- Between-subjects experimental study via online Qualtrics survey (Feb. 6-7, 2023)
  - Participants recruited by Prolific: US residents aged 30-45, >\$50K household income, owning a conventional non-EV car
  - 304 respondents, 21 discarded for attention check failures → N=283
- Premise: Survey participant facing new car purchase, budget of \$38,000. Having selected a car model, participant must choose between EV and gasoline version.
  - Dependent variable: EV purchase likelihood (1 = unlikely, 7 = likely)
  - 2 randomly-assigned conditions on EV price premium (low = \$1,000, high = \$5,000)
  - Panels of items to elicit self-reported perspectives on key model constructs (e.g., environmental issues, technology advancement, electric vehicles)
- STATA analysis of survey data: structural equation modeling with measurement model

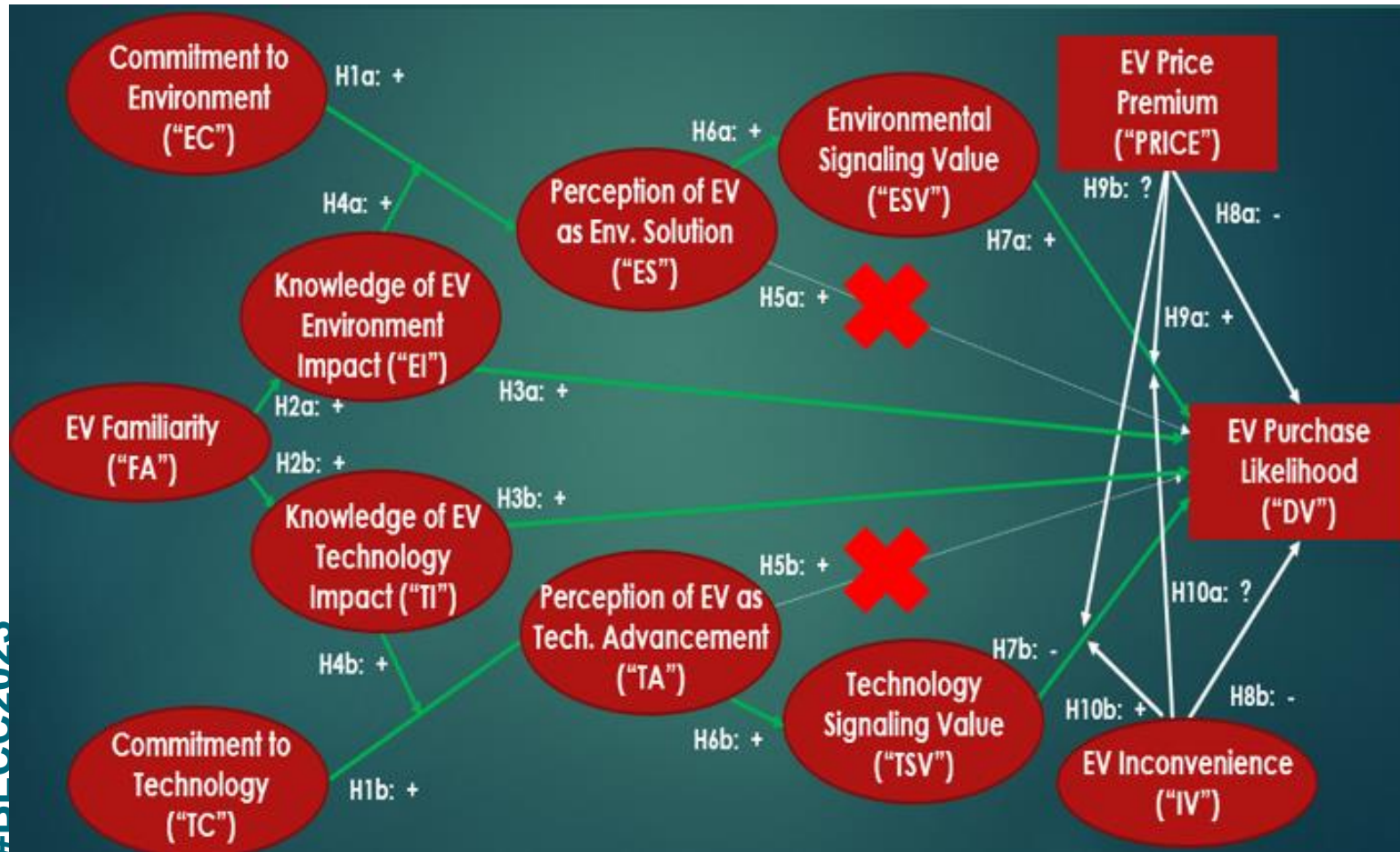


# Findings: Environmental Pathways



	Hypothesis	Finding
H1a	Positive	Supported (when considered jointly with H4a)
H2a	Positive	Supported (p=0.044)
H3a	Positive	Supported (p=0.021)
H4a	Positive	Strongly supported (p<0.001)
H5a	Positive	Not supported (p=0.399)
H6a	Positive	Strongly supported (p<0.001)
H7a	Positive	Supported (p=0.035)

# Findings: Technology Pathways



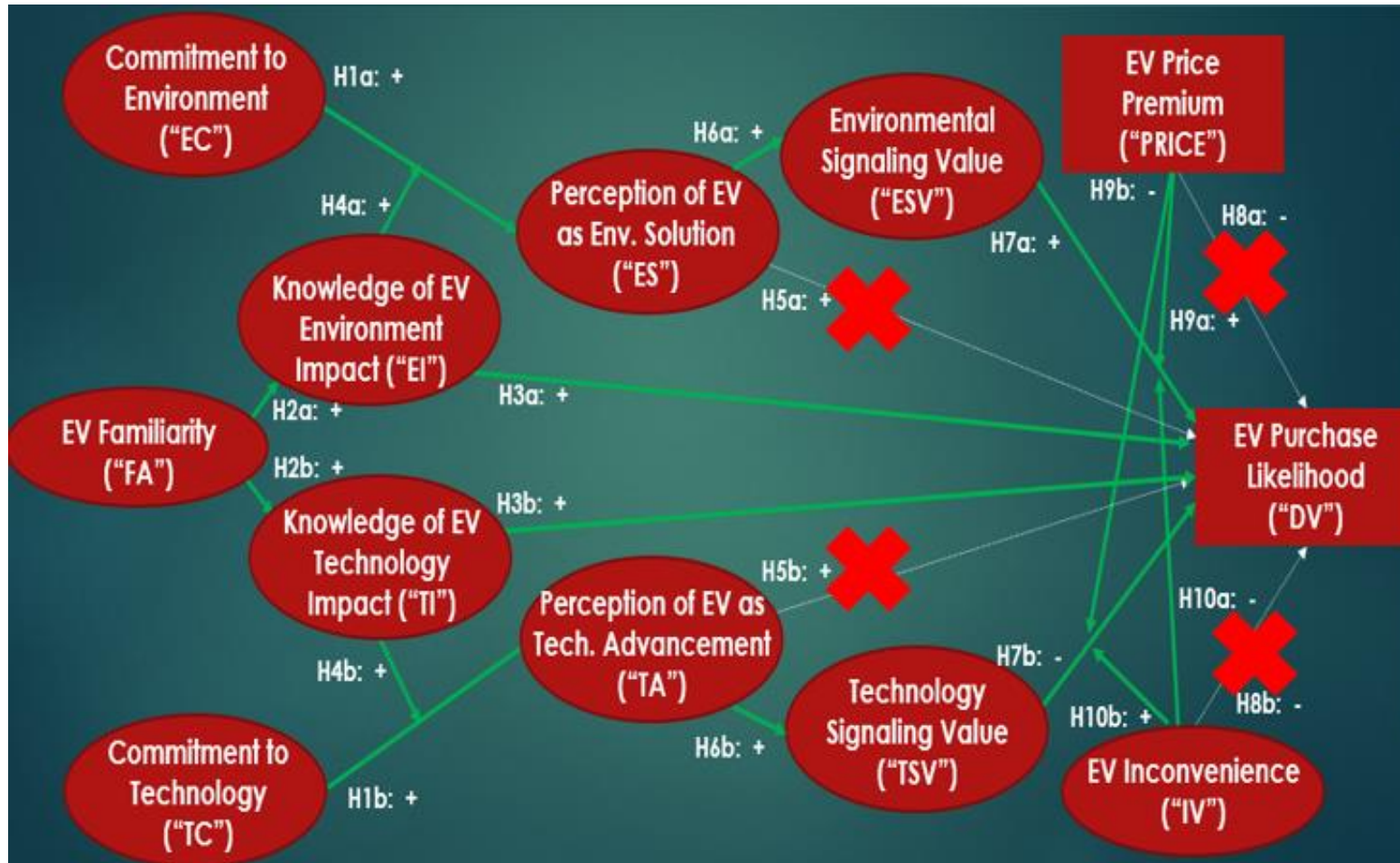
	Hypothesis	Finding
H1b	Positive	Supported (when considered jointly with H4b)*
H2b	Positive	Supported (p=0.007)
H3b	Positive	Supported (p=0.013)
H4b	Positive	Strongly supported (p<0.001)*
H5b	Positive	Not supported (p=0.368)
H6b	Positive	Strongly supported (p<0.001)
H7b	Negative	Marginally supported (p=0.052)

\* Results obtained from independent SEM analysis



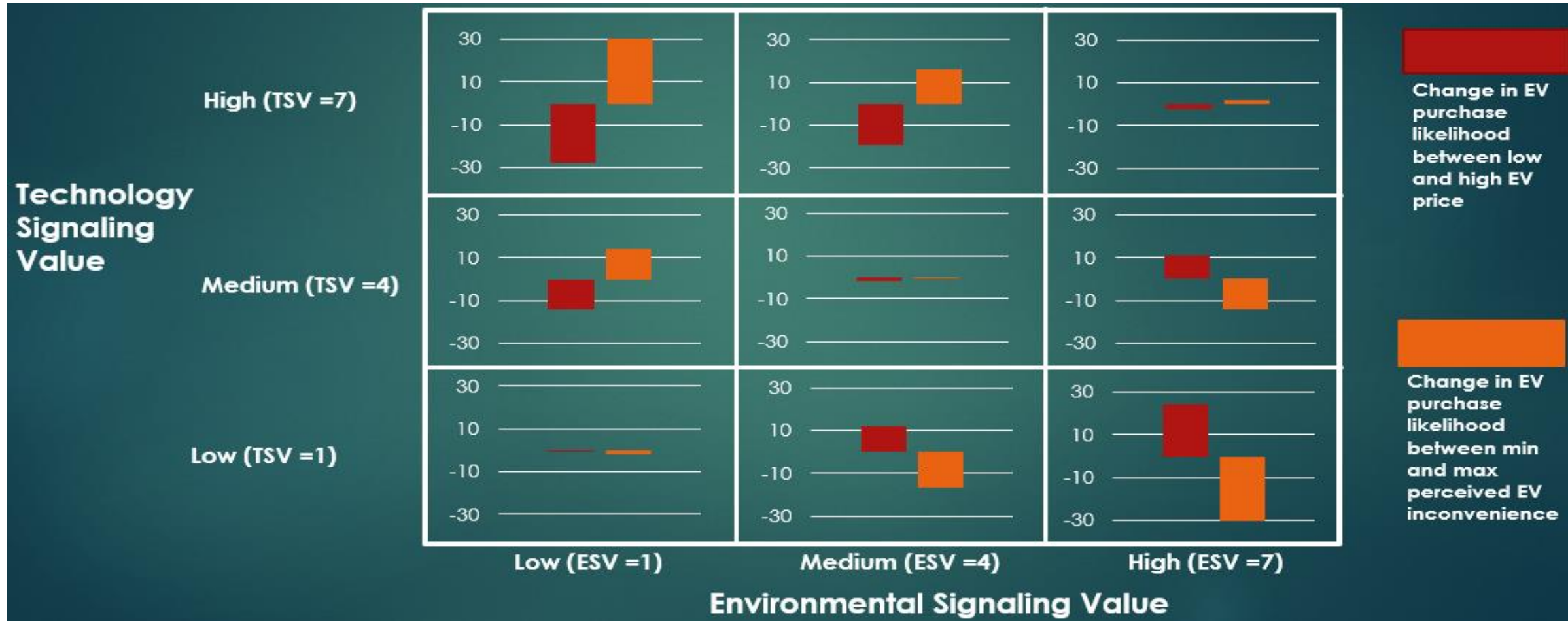


# Findings: Price & Inconvenience



	Hypothesis	Finding
H8a	Negative	Not supported (p=0.967)
H8b	Negative	Not supported (p=0.136)
H9a	Positive	Supported (p=0.047)
H9b	?	Marginally negative (p=0.055)
H10a	?	Negative (p=0.040)
H10b	Positive	Supported (p=0.027)

# Impacts of Price & Inconvenience Affected By Signaling Value



# Interpretation of Findings



# Signaling “Green” vs. “Geek”



## Signaling “greenness”

- Perceptions of EV as an environmental advancement are fully mediated through environmental signaling, resulting in a positive effect on EV purchase likelihood → it's good to be seen as “green”
- A higher EV price premium accentuates the positive effect of environmental signaling on EV purchase likelihood → it's even better if I pay more



## Signaling “geekiness”

- Perceptions of EV as a technological advancement are fully mediated through technology signaling, resulting in a negative effect on EV purchase likelihood → it's bad to be seen as a “geek”
- Greater EV inconvenience weakens the negative effect of technology signaling on EV purchase likelihood → it's less bad if I incur more inconvenience

# Summary of Findings

- Both commitment to a cause (environment or technology) and **specific** knowledge about EV impacts on that cause are necessary in forming perceptions of EVs as a solution, e.g.
  - Environmental commitment alone without specific knowledge about EV impacts on the environment reduces confidence (increases skepticism?) about EVs as a solution
  - Technology enthusiasm together with specific knowledge about EV impacts on technology advancement increases perceptions of EVs as a solution
- The impact of perceptions about EVs as an advancement (environmental or technology) on EV purchase likelihood is fully mediated through the signaling value of EV ownership
- Strong and asymmetric identity-signaling effects associated with EV purchase:
  - The signaling value of EV ownership is positive for **environment** and negative for **technology**
  - Counterintuitively:
    - A high EV **price premium** increases purchase likelihood when environmental signaling value is high
    - Greater EV **inconvenience** increases purchase likelihood when technology signaling value is high



# Future Research: Self vs. External Signaling



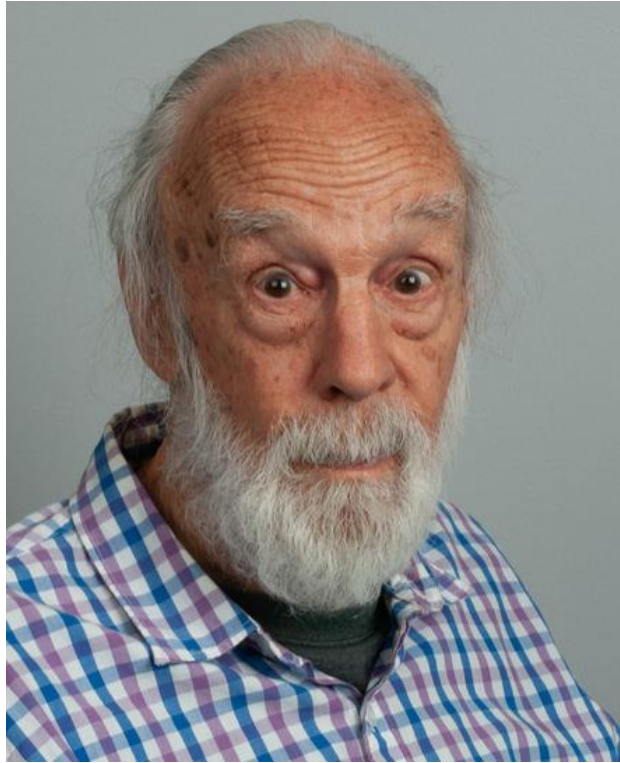
**EV ownership can be viewed as a signal to the self or to others. Or to both!**

**How do these differentially affect antecedents of EV purchase likelihood?**

# Acknowledgements



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# Questions or Comments?



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