

What Drives Interest in Rooftop Solar?

Insights from the Field and Theory

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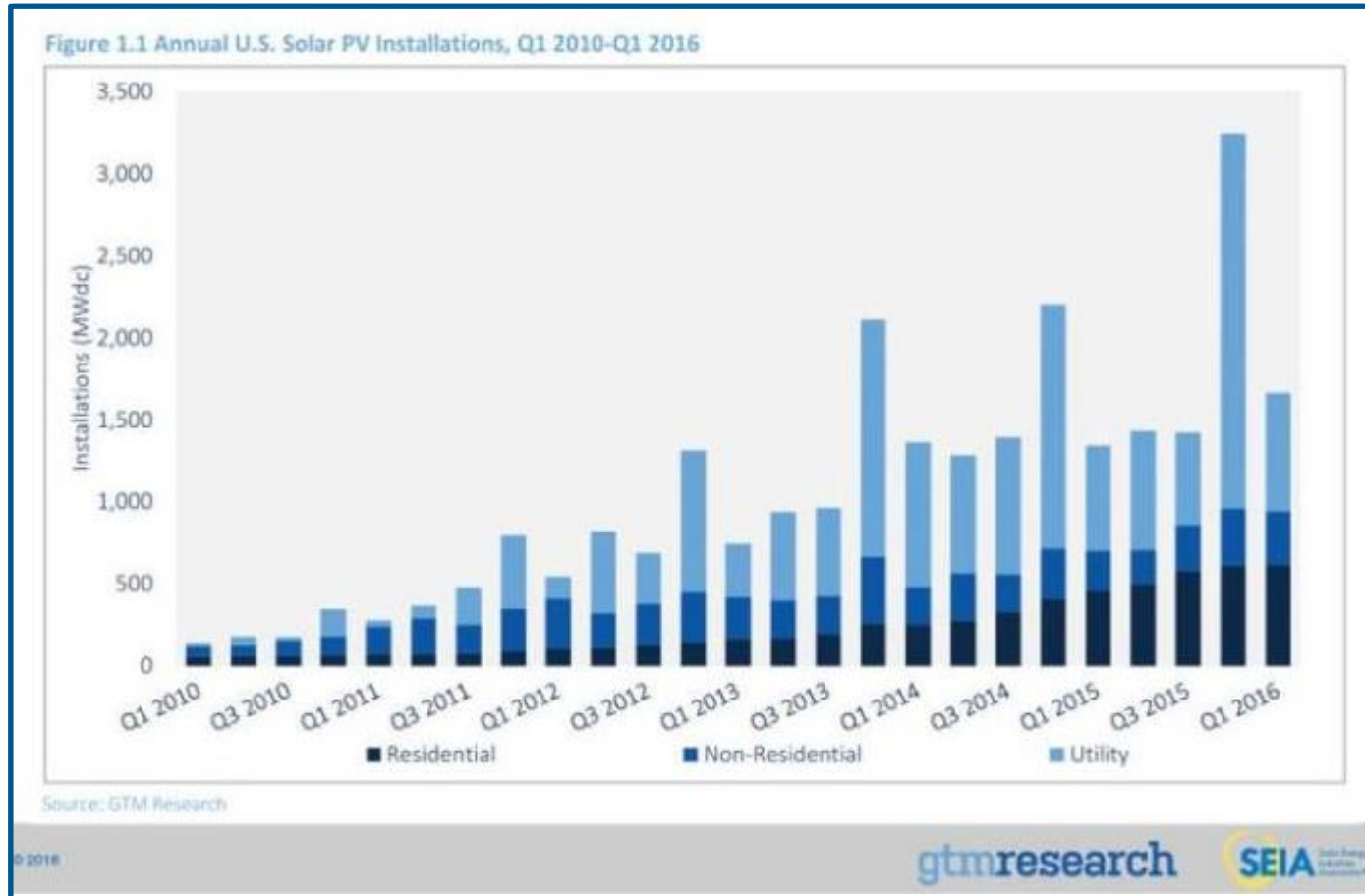
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Residential Solar Photovoltaics (PV) are becoming more popular



Source: GTM Research, U.S. Solar Market Insight Report 2016 Q2

BUT Customer acquisition costs remain high:

\$3,000 to acquire one new customer!

Online Survey of Consumer Perceptions

- **Sample**
 - Non-adopting homeowners in AZ, CA, NJ & NY
 - Quotas used to match sample to Census
 - 1,156 respondents with complete data
- **Objectives:**
 - Identify factors that influence interest in PV
 - Develop a framework to examine their relative importance

Examined two types of Interest in PV:

Social Curiosity



“If my neighbor [or friend] installed solar, I would be interested in learning about the costs and savings”

Interest in Talking to Installer



Intention to contact installer in next 6 months

“If I could get a no-cost assessment of what solar panels could do for my home, I would”

“If a company that sells solar... were in my neighborhood, I would be interested in talking with a representative.”

Why have people gone solar?

For the Planet.



To Save Money.



Because it's Cool.



Why have people gone solar?

For the Planet.



Value-Belief-Norm
theory
(Stern *et al*, 1999)

To Save Money.



Theory of Planned
Behavior
(Ajzen, 1991)

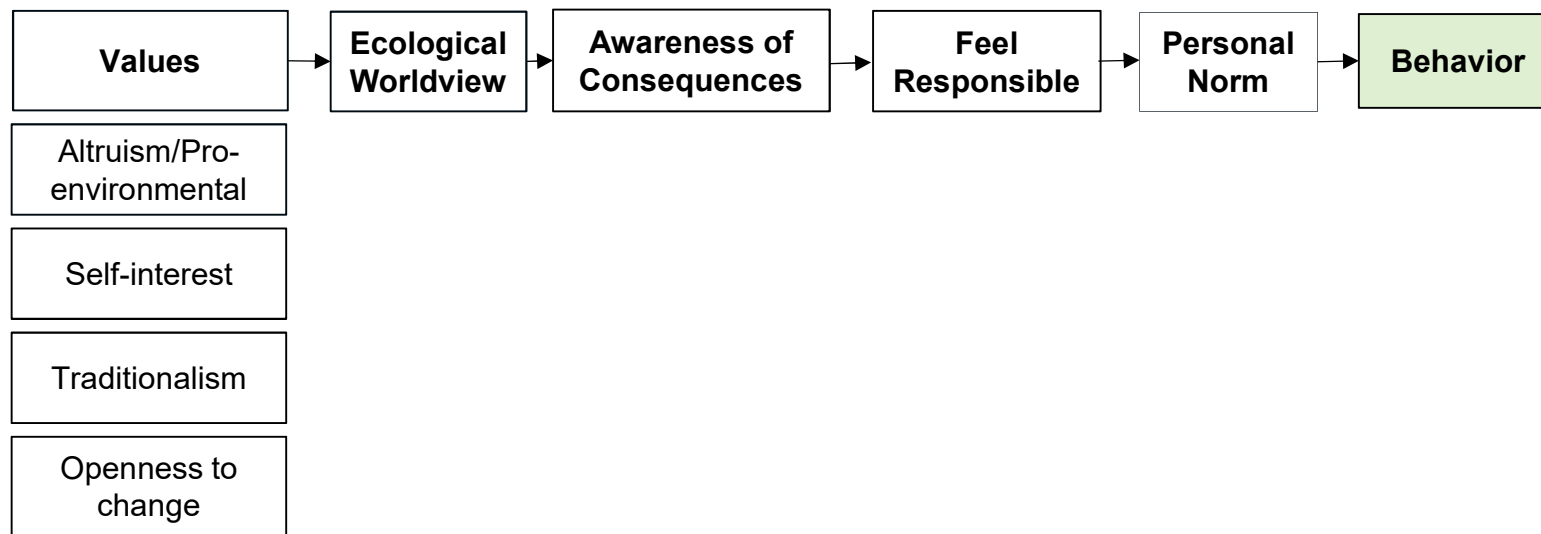
Because it's Cool.



Diffusion of Innovations
(Rogers 2003)

1) Solar as an eco-friendly behavior?

Value-Belief-Norm Model (Stern *et al.*, 1999)

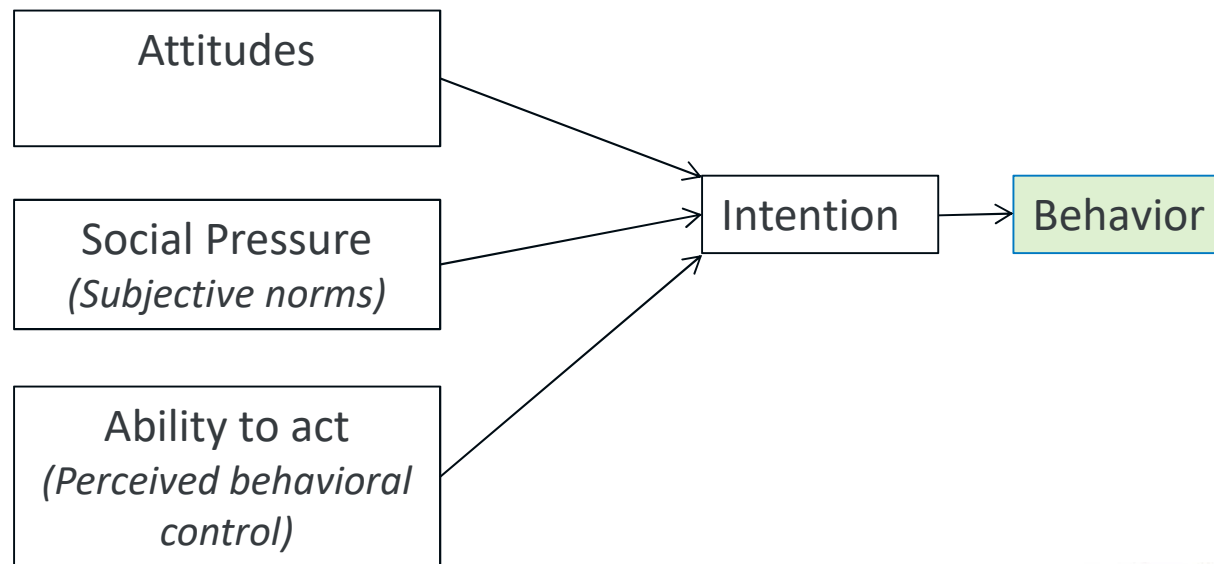


VBN: People who have strong altruistic and environmental values, believe the environment is threatened, and that they can do something to help, will feel a moral obligation to take action, and are more likely to pursue PV.



2) Solar as a consumer good?

Theory of Planned Behavior (Ajzen, 1991)

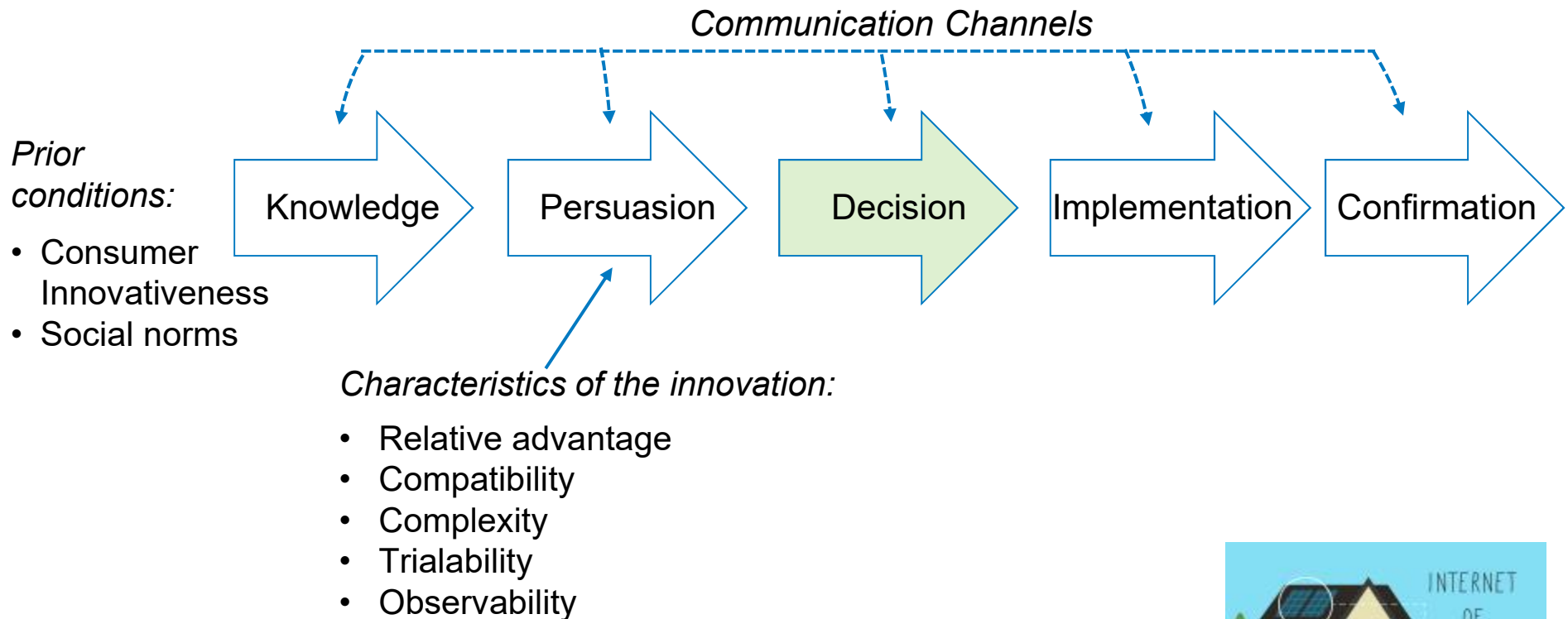


TPB: People decide whether to engage in a behavior after rationally weighing the pros and cons, taking into account their beliefs and attitudes about solar, social expectations and whether they think they're capable of getting PV.



3) Solar as an innovative technology?

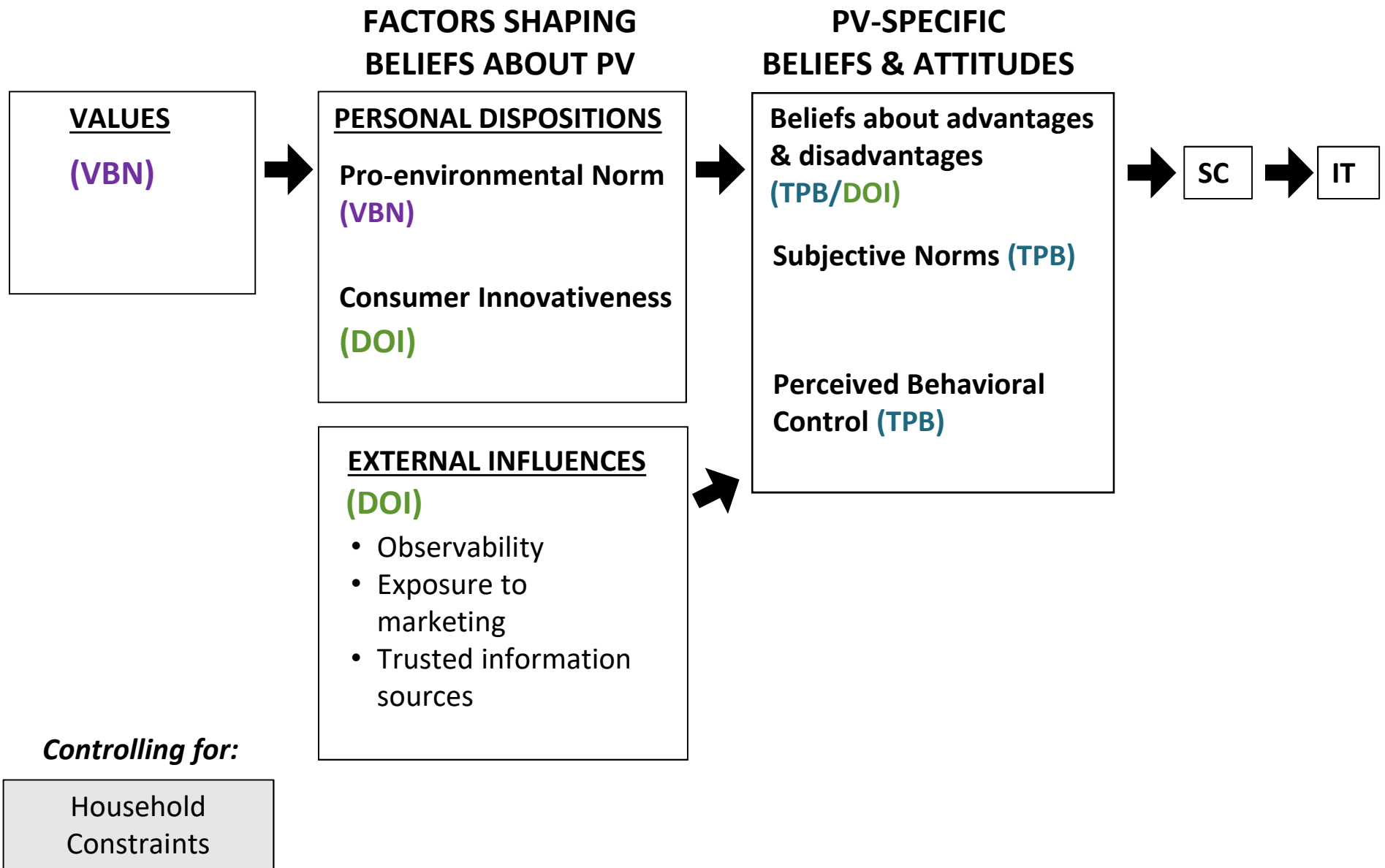
Diffusion of Innovations (Rogers, 2003)



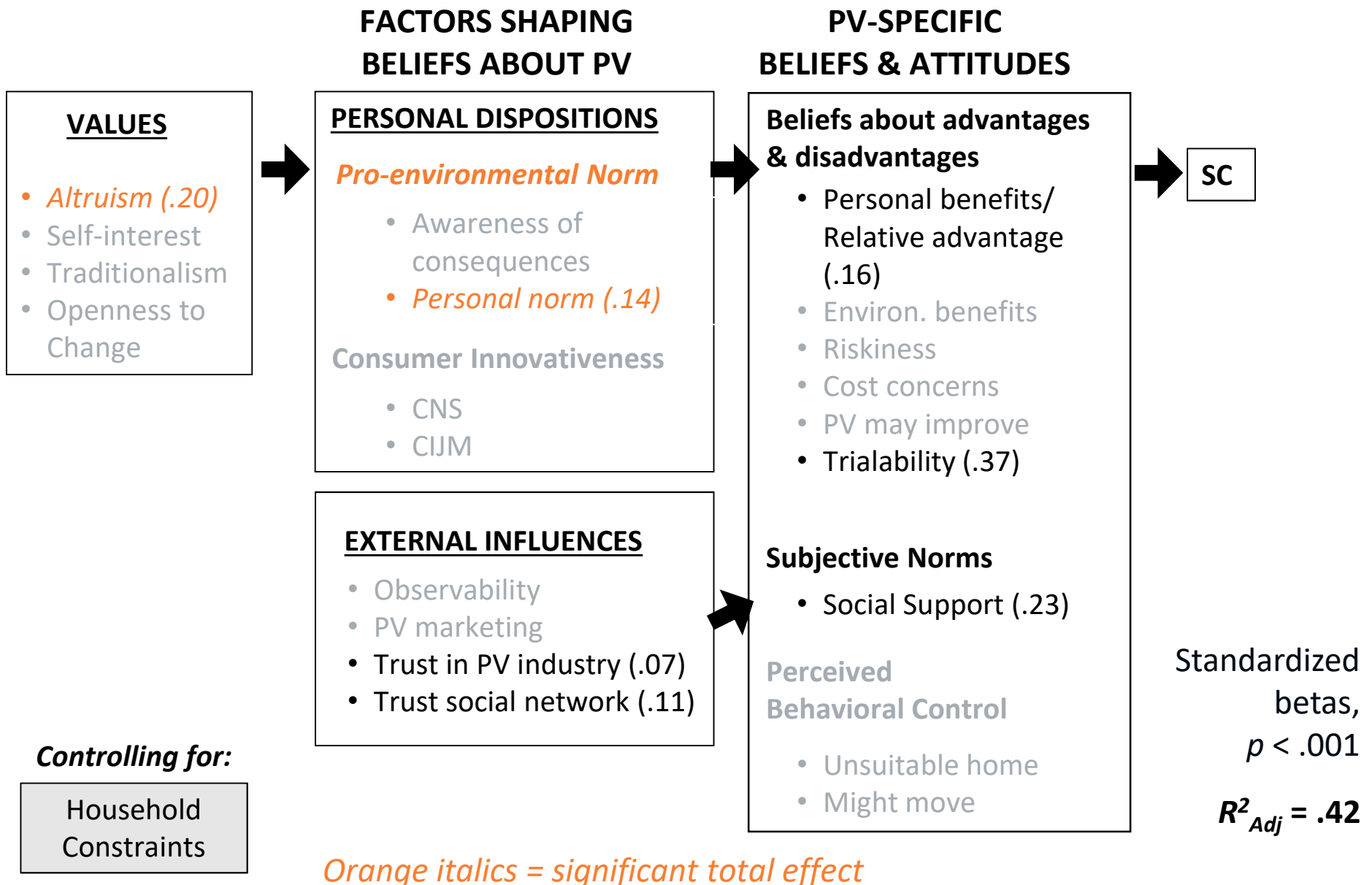
DOI describes the process by which new innovations are adopted. Innovative, novelty-seeking consumers are likely to adopt first. Adoption and diffusion occur more quickly when people hold favorable impressions of the innovation.



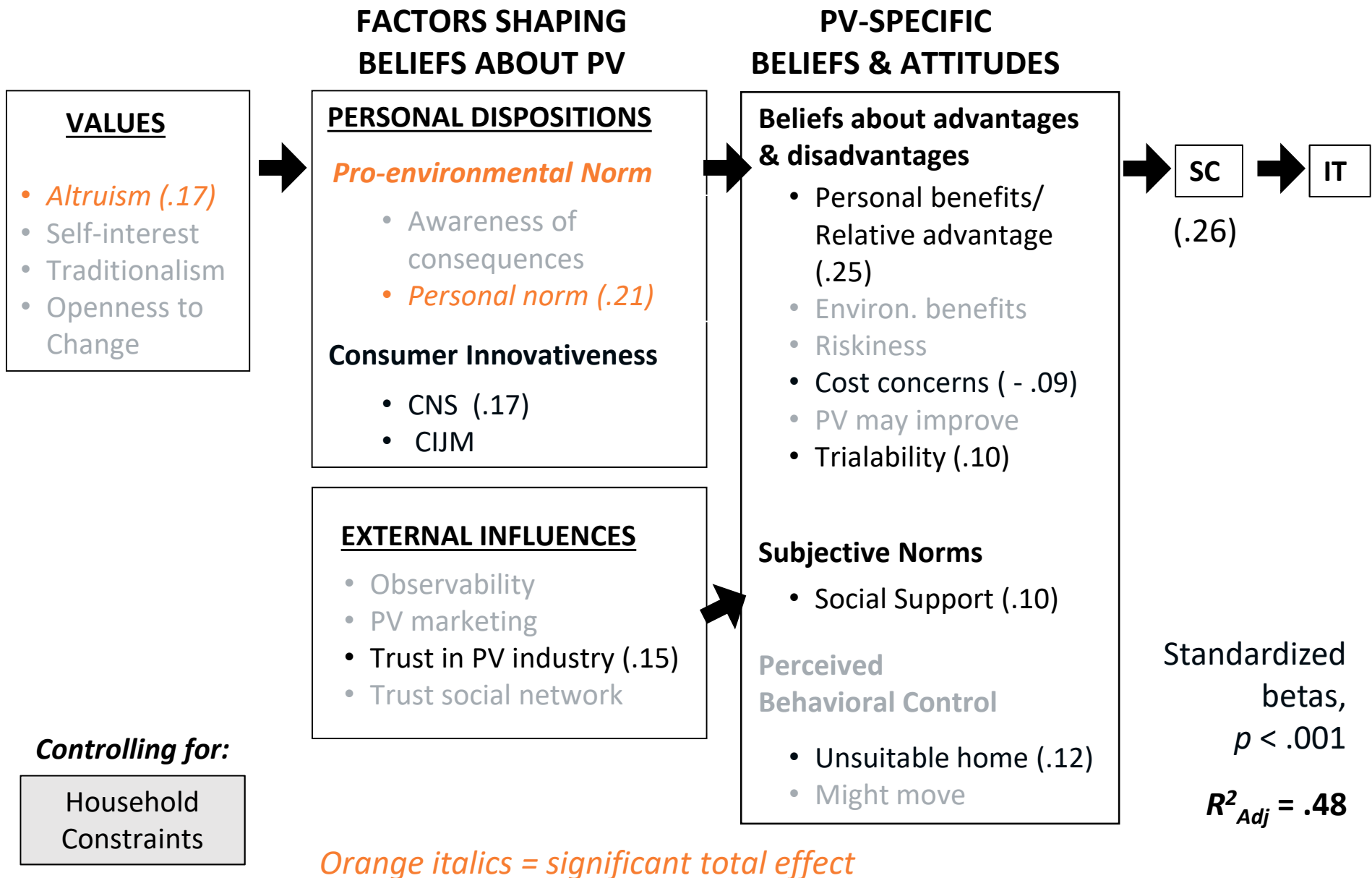
Proposed Integrated framework



Predictors of Social Curiosity



Predictors of Intent to Talk to Solar Installer



What this means for generating leads

WHO to target?

- Innovative consumers/early adopters of technology
- Environmentally conscious*

*Show how PV aligns with values but also demonstrate personal benefits

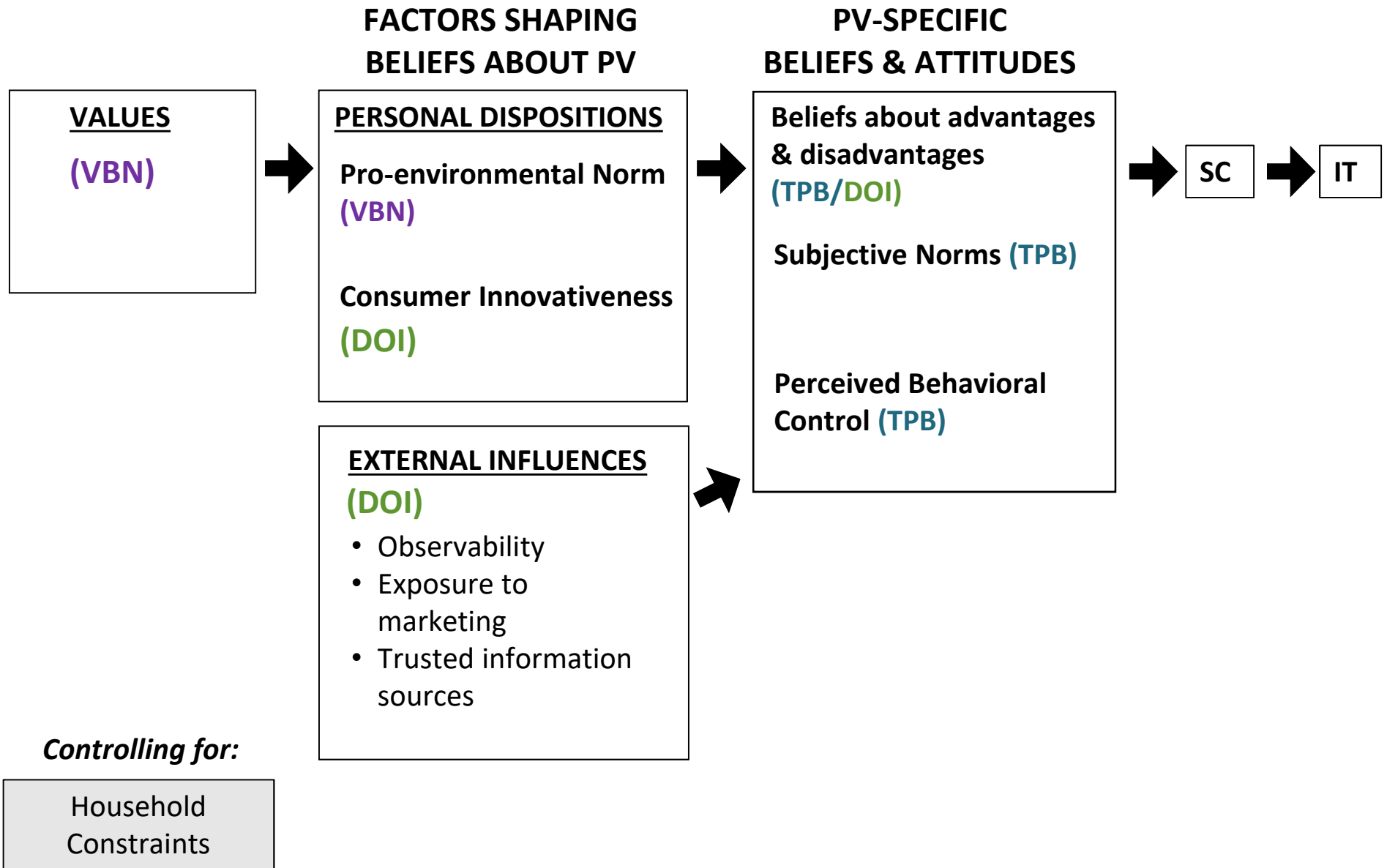
WHAT messaging?

- Make the financial and personal benefits clear. Show how PV meets needs and addresses concerns.

HOW?

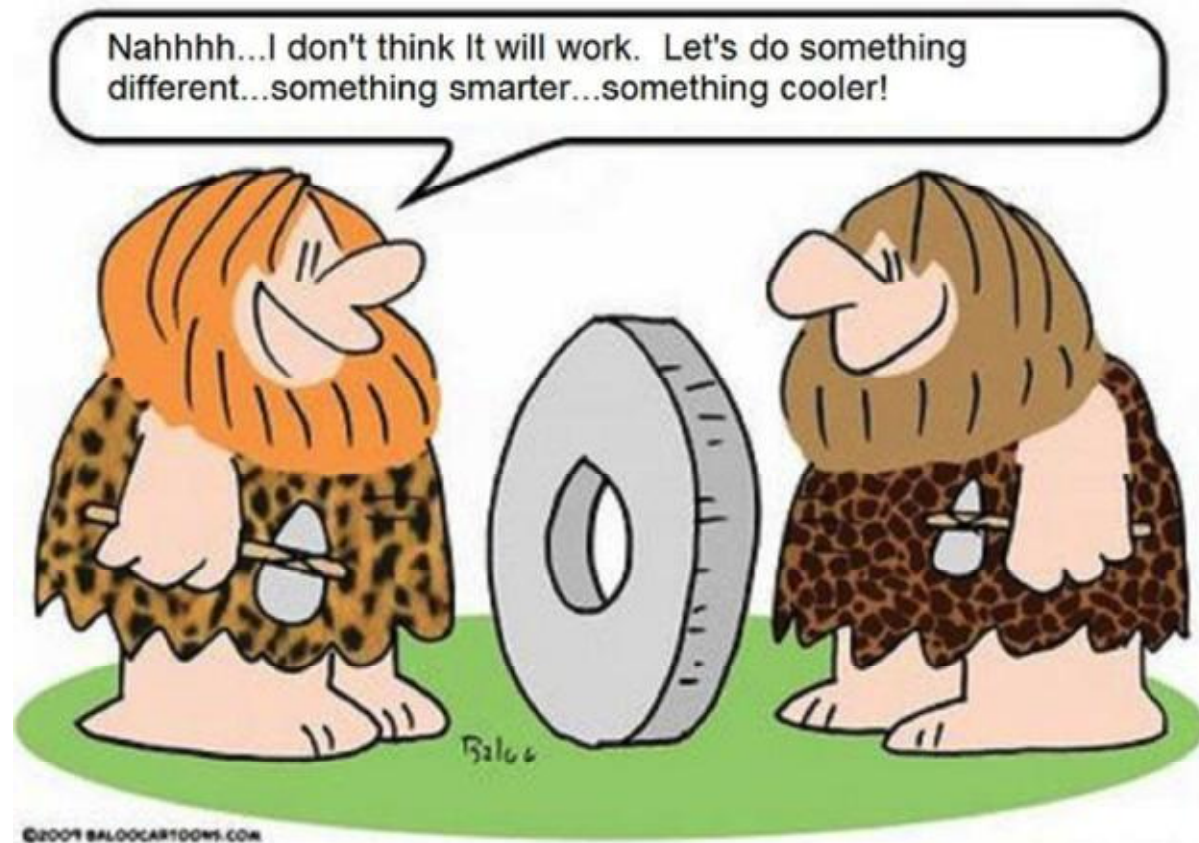
- Tap trusted social networks and information sources
- Carefully structure incentive programs/policies

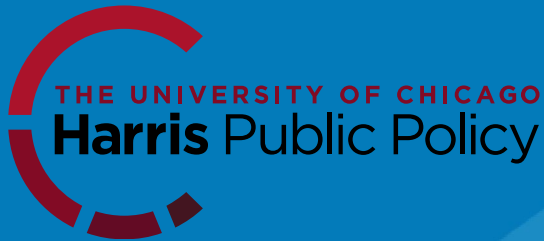
Proposed Integrated framework



BECC is 10 years old

Let's remember to build off of what we've learned and not...





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Research Partners

National Renewable Energy Laboratory, Portland State University, Lawrence
Berkeley National Lab, University of Arizona, Clean Power Finance

Funding:

U.S. Department of Energy, Sunshot Initiative:
Solar Energy Evolution and Diffusion program

Extra Slides

But there is room to improve customer acquisition



About 10% qualify.
Only 6-8% of qualified households get solar

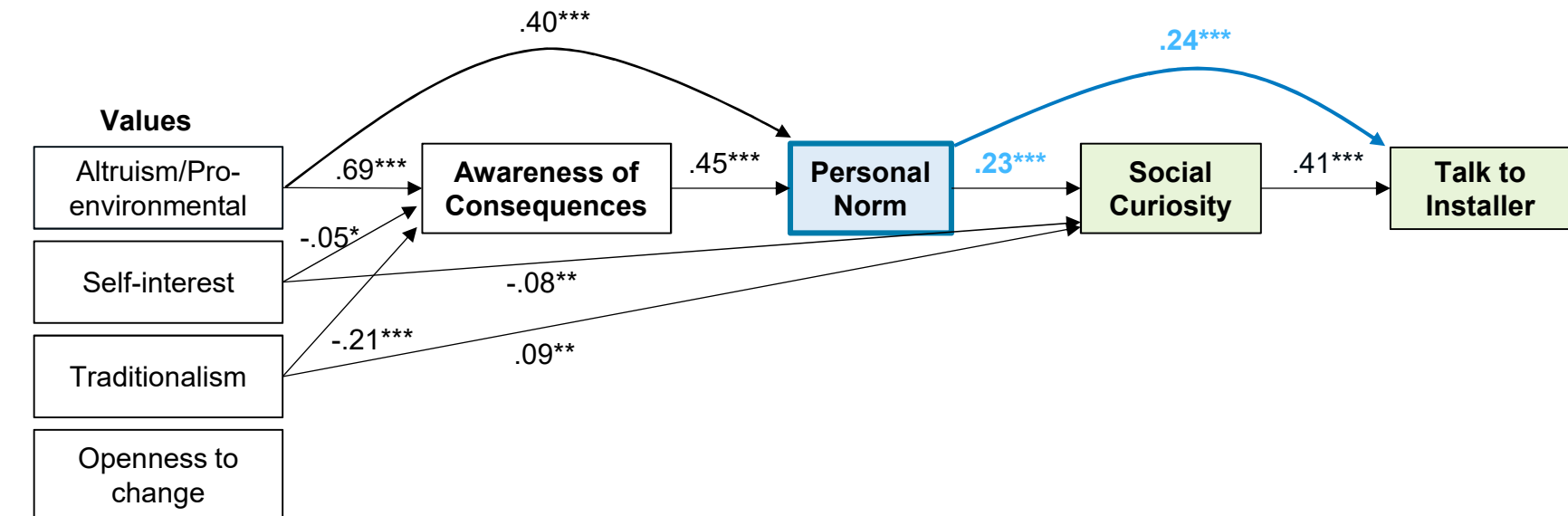
Customer Acquisition costs for a *single* solar installation:
~ \$3,000 (10% of total costs)

How much do socio-demographics explain?

- Explain 11% of variance in Interest.
Significant predictors:
 - Age: Younger individuals more interested
 - Gender: Males more interested
 - High summer bills
 - Lower household incomes
 - Have experienced more power outages
- Once we control for psychological variables, only age and gender remain significant

1) Solar as an eco-friendly behavior?

Value-Belief-Norm Model (Stern *et al.*, 1999)



Household Constraints

(Significant paths not shown)

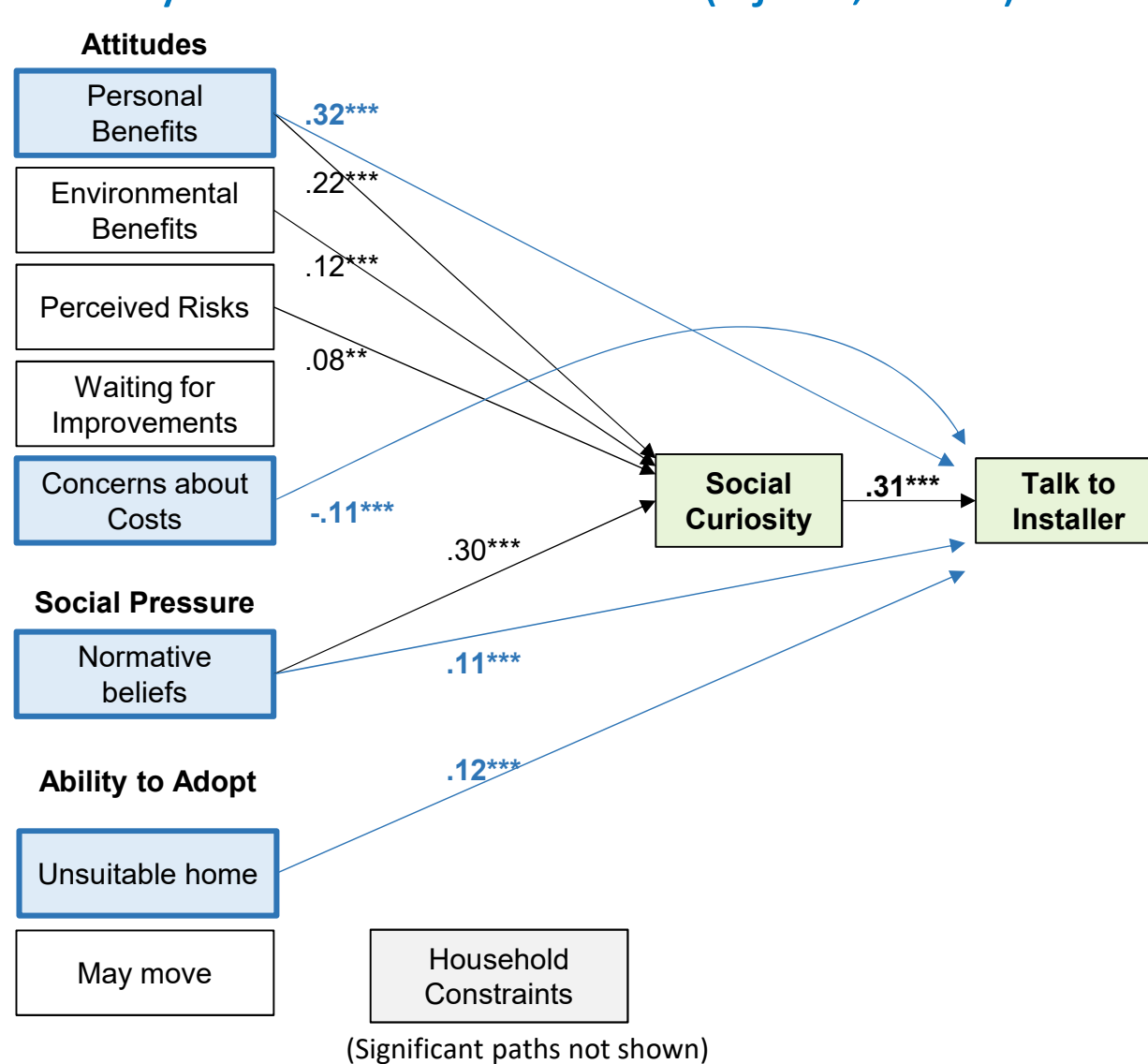
$R^2 = .36$
 $R^2_{Adj} = .35$

VBN explains 11% of variance after controlling for household constraints (excluding SC)



2) Solar as a consumer good?

Theory of Planned Behavior (Ajzen, 1991)



$$R^2 = .45$$

$$R^2_{Adj} = .44$$

TPB explains 27% of variance after controlling for household constraints (excluding SC)



3) Solar as an innovative technology?

Diffusion of Innovations (Rogers, 2003)

