



# Promoting Sustainable Behavior in Tompkins County Homeowners



ITHACA COLLEGE



A Town-Gown Collaborative Experiment

*Funded by NYSERDA (NY State Energy Research and  
Development Authority)*



Elisabeth Harrod, General Manager,  
Snug Planet

# PSYCHOLOGY FOR SUSTAINABILITY



Kathryn Caldwell, Assistant Professor of  
Psychology, Ithaca College

# A Social Marketing\* Approach to Influencing Homeowner's Energy Use

## Energy Educator Visit

- Build rapport
- Empower do it yourself - low-cost, no cost steps to reducing energy use
- Information about loans and rebates
- Use social norming and making commitment
- Follow-up at 1 month to encourage completion of low-cost actions

\*Research-based tactics.

# A Social Marketing Approach to Influencing Homeowner's Energy Use

**\*Participants:** 170 homeowners in Ithaca area, who contacted Snug Planet for a home audit

**Method:** Customers were randomly assigned:

- Energy Educator plus Audit (n=85)
- Audit Only (n=85)

**Data Collection:**

- Snug's customer data files after **6 months**
- **6 month** follow-up survey – emailed customers about their energy saving behavior in the home
- \$15 gift card incentive to take the survey
- **Response rate – 60%**

**Time Frame:** August 2015-April 2017

**\*Who was excluded?** Customers (n=171) with personal connection to the project or returning customers.

# The Energy Educator Visit



# Making a Commitment



## Energy Action Plan

### Lighting

- Install energy efficient compact fluorescent light bulbs (CFLs) in light fixtures.
- Install some energy efficient, long-lasting LED bulbs in our home.
- Turn off lights when not in use, or install motion sensors to turn them off automatically.

### Hot Water

- Install high pressure, low flow shower heads.
- Lower water heater temperature to 120°F.
- Insulate hot water supply pipes.

### Appliances & Electronics

- Reduce phantom energy load by turning power strips off or installing a smart power strip.
- Regularly clean and/or service appliances: \_\_\_\_\_
- Replace old, inefficient appliances with new Energy Star models: \_\_\_\_\_

### Health & Safety

- Install and maintain a smoke & CO detector on each floor.
- Conduct a home radon test.

### Save MORE Energy

- Recommend a Snug Planet home energy audit to a friend.
- Like us on Facebook or follow us on Twitter for energy-saving updates and resources.
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

May we share your Energy Action Plan online to celebrate the community-wide impacts of our energy saving work?

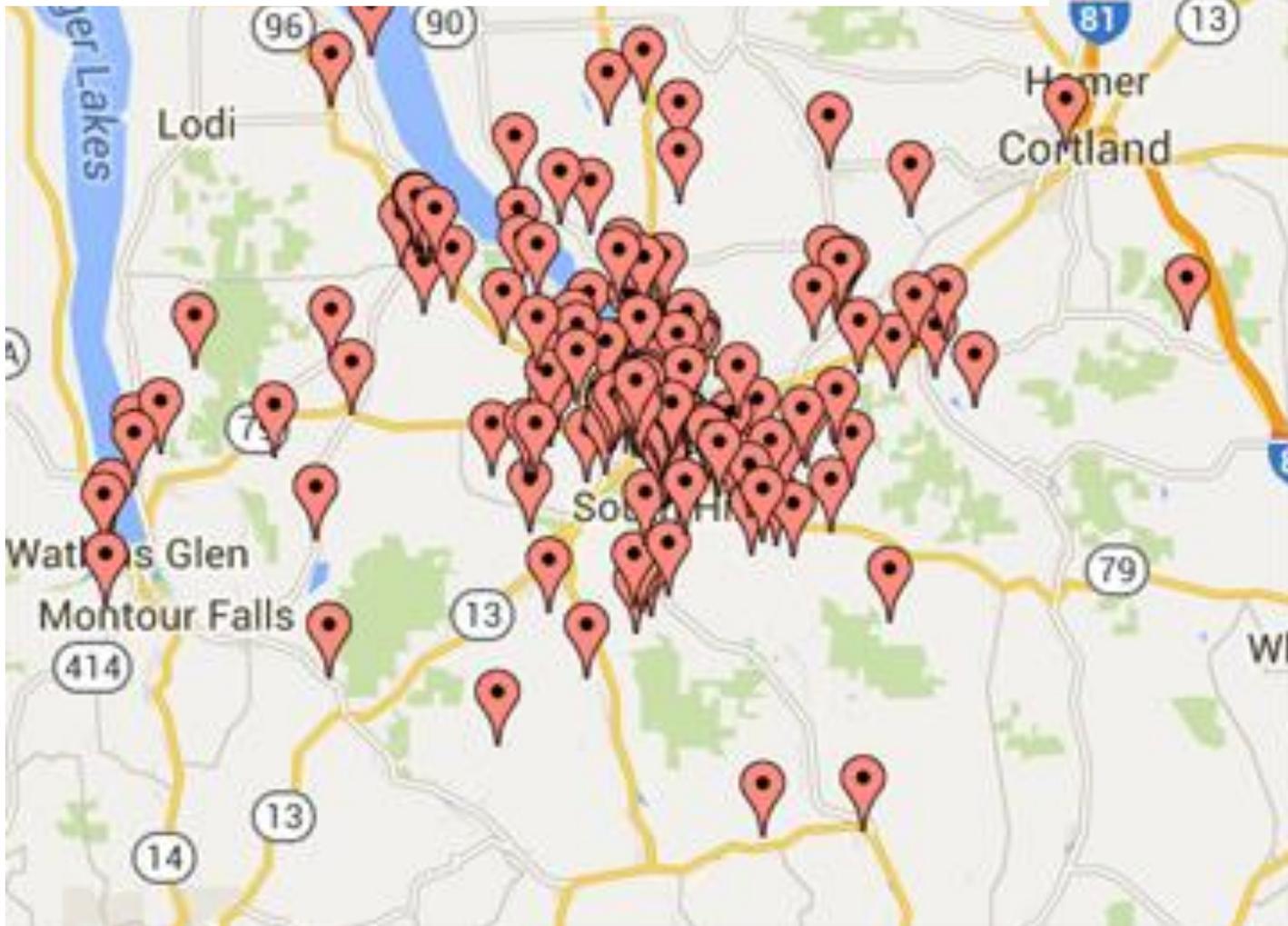
- Yes     No

Signed: \_\_\_\_\_

**Sign here**

# Social Norming

*May we add you to our map of customers who completed an Energy Action Plan?*



# Hypotheses

Customers\* who receive the **Energy Educator** visit will:

- 1) Be more likely uptake the auditor-recommended work
- 2) Will spend more money on recommended work
- 3) Will do take more low-cost and no-cost energy-saving actions (both ongoing habits and one-time actions)

\* Compared to customers in the Audit Only Condition

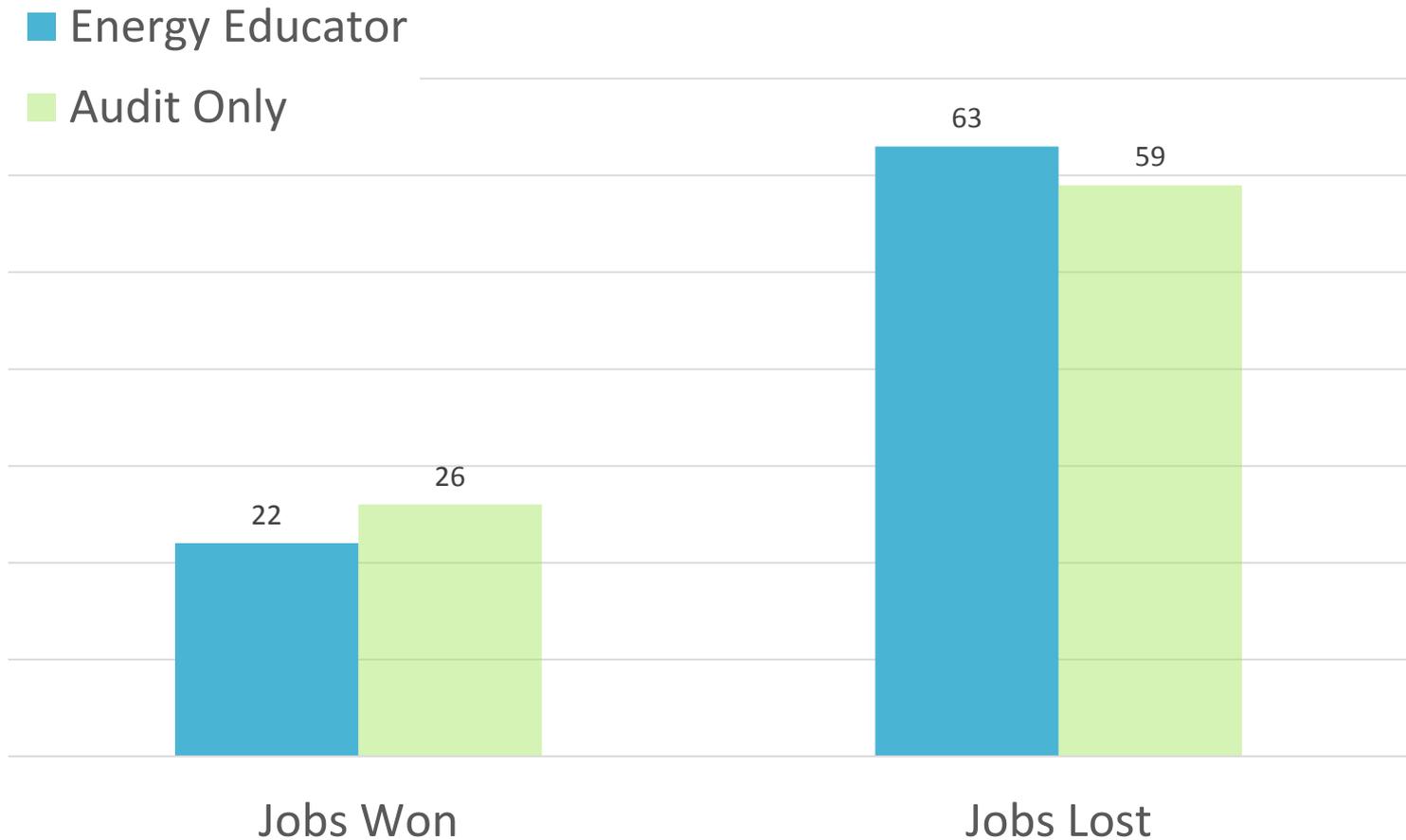
# Results

*(sneak preview)*

# Hypothesis 1

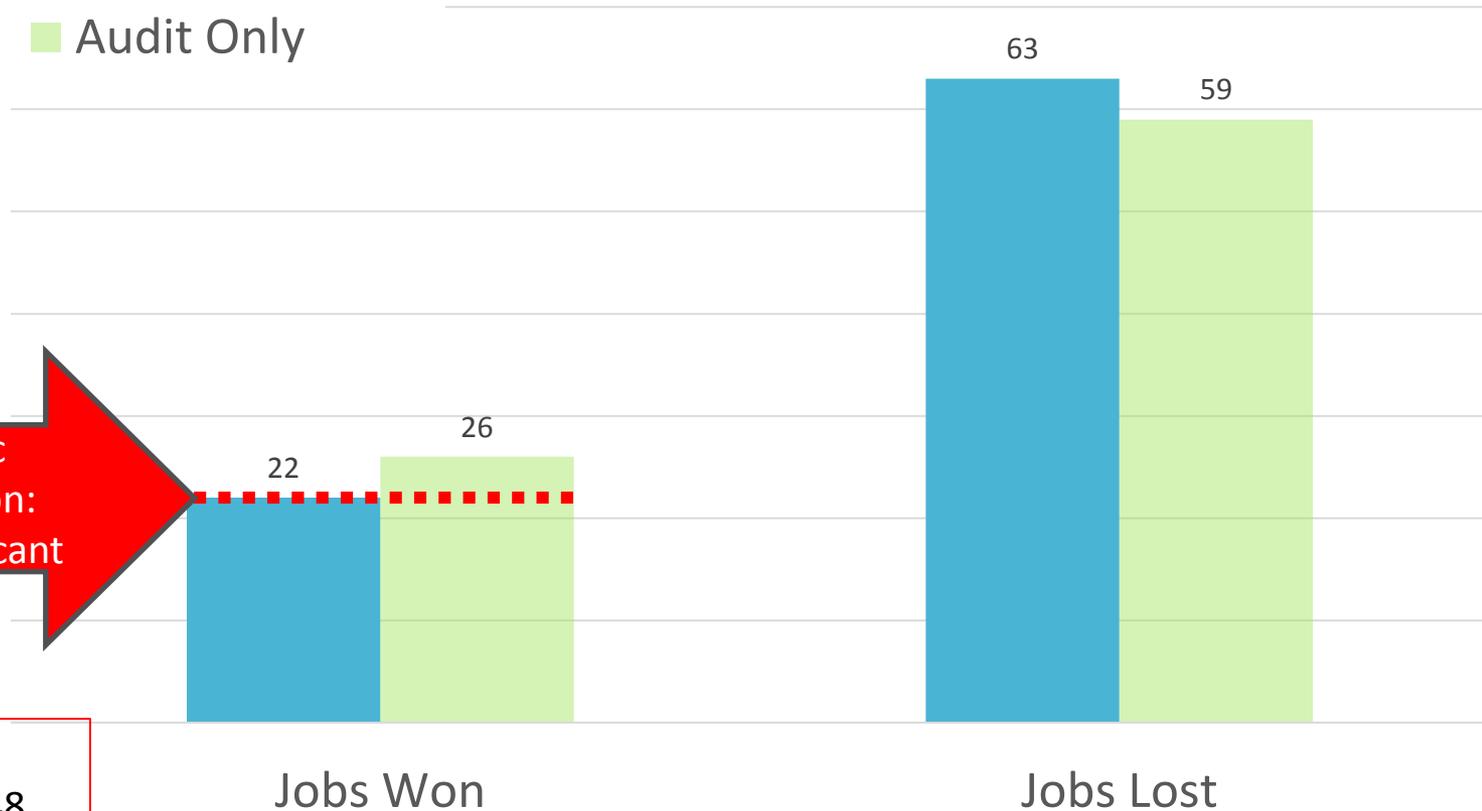
Were customers who received the Energy Educator visit more likely to take up the auditor recommended work on their homes?

# No Difference in Number of Jobs “Won”



# No Difference in Number of Jobs “Won”

■ Energy Educator  
■ Audit Only

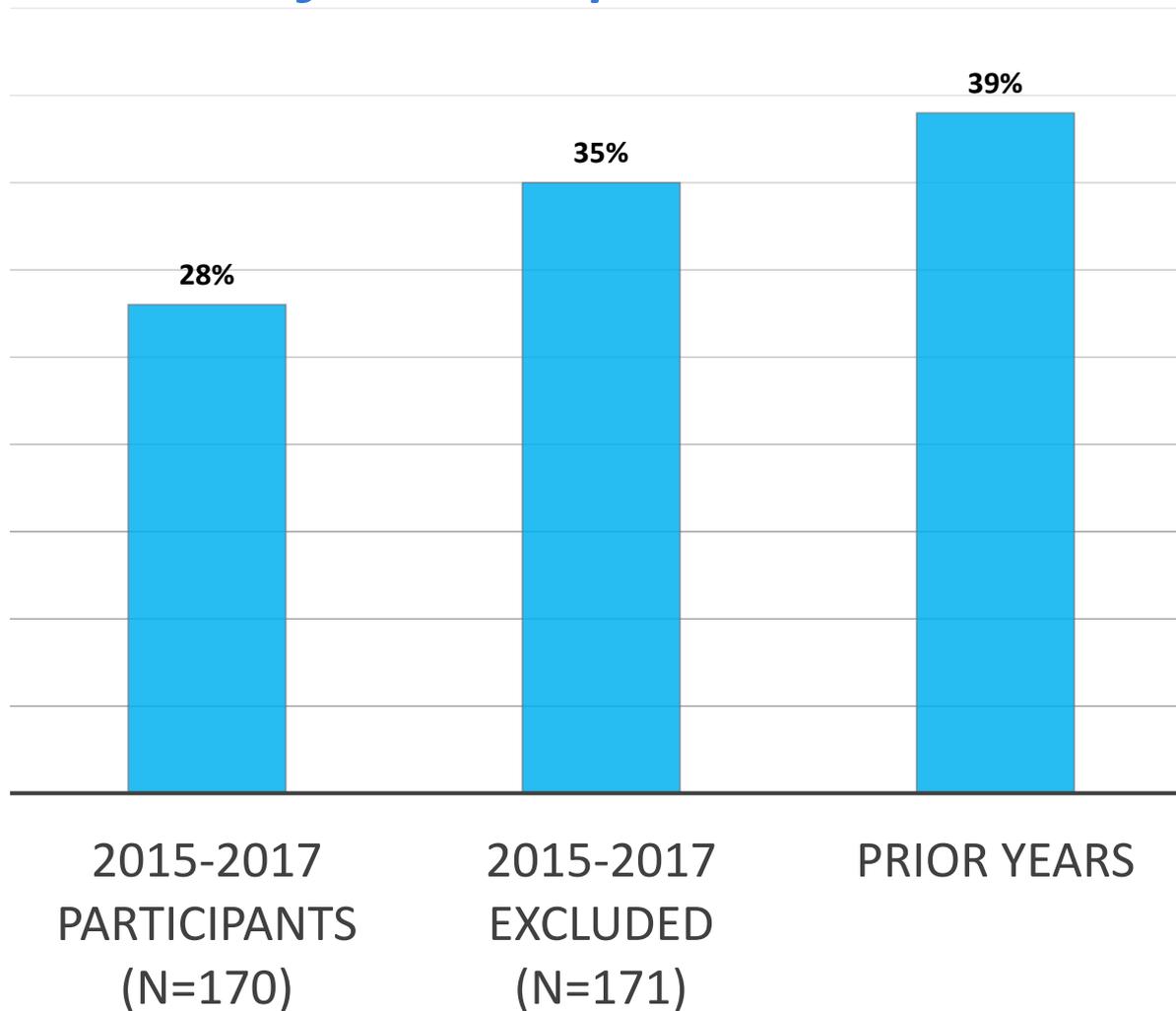


Logistic  
regression:  
not significant

B = -.434  
Exp (B) = .648  
Sig. = .251 (p)

# Job Uptake Rate:

*Affected by Selection Criteria and End-Date of the Experiment?*



## Hypothesis 2

Did customers who receive the Energy Educator visit spend more money on the auditor recommended work?

# Did Customers Having the Energy Educator Visit Spend More Money?

	Average "Job Size"	# Customers	Std. Deviation
Energy Educator	\$9314	22	\$3924
Audit Only	\$9367	25	\$5890
Overall	\$9342	47	\$5013

Analysis of Variance  
 F = .206  
 Sig = .65 (p value)

*\*Customers excluded from the study during this time period spent average of \$9026 on work (n=171).*

*\*Prior to the study (2011-2013), average job size was \$11,644 (n=86).*

# Does size or age of house, energy use, or “leakiness” of the house predict how much customers spent?

	Correlations with \$ Spent on Work (n=47)	
House Square Feet	.017	Not Significant
Age of House	-.042	Not Significant
Audit Blower Door #	-.043	Not Significant
Total Yearly Energy Use (BTUs)	-.063	Not Significant

# Is it something about the customer?

EE Observed CUSTOMER ENTRY POINTS		EE Observed CUSTOMER BARRIERS
Pain-high bills &/or major comfort issue		No pain from energy bills
Has an identifiable problem		No identifiable problem
Spends money & willing to invest		Motivated by cheap energy audit
Views audit as an evaluation tool		DIY homeowner, wants a to-do list
Doesn't need to see "specific" savings		Wants detailed or technical analysis
Has a history with their house		Just bought the house
Understands systems-based approach		Fixated on a specific solution-not open
Asks good questions		Dictator, not interested in collaborating
Willing to act & do their part		Inertia, unwillingness to act
Open to collaborating w/Snug		Unresponsive, poor communication
Has a personal connection to Snug		Decision-makers don't agree
Has heard positive feedback about Snug		Doesn't trust contractors
EE Observed BUILDING GREEN LIGHTS		EE Observed BUILDING RED FLAGS
Dirt floor crawl space or wet basement		Vermiculite
Icicles &/or Ice dams		Knob & tube
Complicated Roof Line		Asbestos
Uneven temperatures or extreme drafts		Lead
		Attic Access barriers
		Basement/Crawlspace Access barriers

# Is it something about the customer?

## EE Observed CUSTOMER ENTRY POINTS

Pain-high bills &/or major comfort issue

Has an identifiable problem

Spends money & willing to invest

Views audit as an evaluation tool

Doesn't need to see "specific" savings

Has a history with their house

Understands systems-based approach

Asks good questions

Willing to act & do their part

Open to collaborating w/Snug

Has a personal connection to Snug

Has heard positive feedback about Snug

Trends:

1. The number of customer entry points increases the likelihood (by about 20%) of taking up the recommended work ( $B = .185$ ;  $\text{Exp}(B) = 1.2$ ,  $p = .088$ ).

2. Number of customer entry points positively correlated with \$ spent on work ( $r = .366$ ,  $p = .094$ )

# Hypothesis 3a

Did customers who received the Energy Educator visit do more one-time no/low-cost energy saving actions?

# One-time Low-cost/No-cost Energy Saving Actions



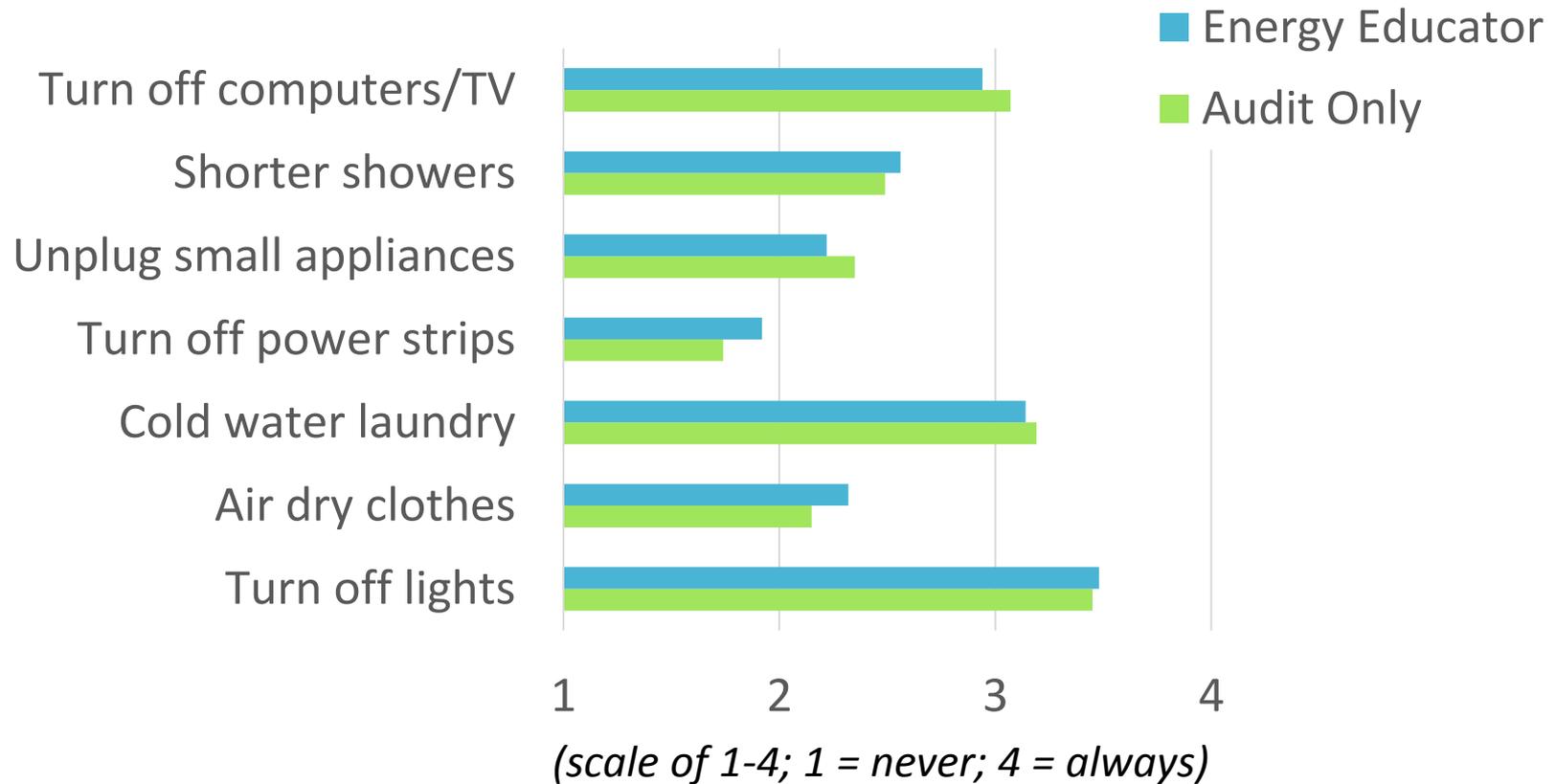
Chi-square analyses revealed significant difference at  $p < .01$

# Hypothesis 3b

Did customers who receive the Energy Educator visit change ongoing energy use habits?

# Ongoing Energy Saving Habits

*“In the past six months how often have you done the following to save energy in your home?”*



Analysis of Variance revealed no significant differences between conditions.

# Conclusions

1. The Energy Educator visit does not increase sales – neither number of contracts nor amount of contract \$
2. Trends suggest that the Energy Educator visit might discourage customer uptake of big expensive, work
3. The Energy Educator visit does not impact customer ongoing energy use habits
4. The Energy Educator appears to significantly affect uptake of low-cost/no cost one-time energy actions
5. The Energy Educator observations of customer “readiness” might help identify which customers are likely to uptake the work and spend money.

# Caveats and Further Considerations

- Experiments, even “real-world” ones have their downfalls
- Six month “end point” may not be long enough
  - Customers come back months and years later
- Market factors
- Weather factors
- Very few low-income customers - those most in need are not getting the audits and needed home retrofits