

Using a Research Synthesis to Identify Underserved Populations

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Conservation Resources Advisory Committee
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Research synthesis or “meta-study”

Purpose	Combine the results of multiple studies to create new knowledge
Sources	Existing studies (no new data collection)
Sample frame	Based on criteria systematically applied

Why do it?

Assess current state of knowledge

Lots of disparate studies, no big picture

Improve methods

Diverse approaches, little consistency

Quick answers

Sufficient data, small investment

California meta-study
How did we do it?

California meta-study

- Purpose**
- 1) Describe characteristics of California residential program participants
 - 2) Identify underserved populations
- Sources**
- Published evaluation reports from PG&E, SCE, SDG&E, LADWP
- Sample frame**
- 66 reports: Every published residential program evaluation, 2010-2012 programs

California meta-study

Collect and aggregate characteristics of the . . .

Household	Home
Income	Type
Education	Size
Ethnicity/race	Age
Primary language	Recent remodel
Own v. rent	
Occupant age & #	
Children in home	
Years lived in home	

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1	CALMAC ID	Unique ID	Other Study	Publication 1	Category	Utility	Paper File A	Title	Publ	Summary	Prog Yr	Produced By	On Net / url	Status - if "no res h parts" BD = ""	Program Name	Program Description
2	CPU0066.01	1		Energy Efficiency	Process Evaluation	CPUC	No	2010-2012 California Statewide Emerging Technologies	10/3/13	This report documents the findings and recommendations from the 2010-2012 Statewide Emerging Technologies Study.	2010 2012	Opinion Dynamics / Itron, Inc.	ETP_Phase_I_ETP_Statewide_Evaluation_Report_Volume_1.pdf	Excluded - no res h parts		
3	SCE0303.01	2		Energy Efficiency	Market Effect	SCE	No	2010-2012 Appliance Recycling Program Retailer Trial Final Report	10/4/13	This is an evaluation of SCE's Retailer Trial Appliance Recycling Program.	2010 2011	Innovologie LLC	build10scere tailerfinal1004.pdf	Included	Appliance Recycling Program Retailer Trial	
4	CPU0066.03	3		Energy Efficiency	Impact Evaluation	CPUC	No	2010-2012 California Statewide Emerging Technologies	12/27/13	This report documents the findings and recommendations from the 2010-2012 Statewide Emerging Technologies Study.	2010 2012	Opinion Dynamics / Itron, Inc.	ETP_Phase_I_LI_Program_Effects_Report_Volume_I_FINAL.pdf	Excluded - no res h parts	Statewide Emerging Technologies Program (ETP)	The mission of the 2010-2012 ETP is to support increased energy efficiency education in various programs.
5	SCE0339.01	4		Energy Efficiency	Process Evaluation	Global Energy	No	2010-2012 Community Language Education	12/30/13	This study summarizes the results of Cadmus' process evaluation of the 2010-2012 Community Language Education Program.	2010 2011 2012	CADMUS	2012_CLEO_Process_Evaluation_12-30-13.pdf	Included	Southern California Edison (SCE) Community Language Education Program	provides basic energy efficiency education in various programs.
6	PGE0302.04	5		Energy Efficiency	Process Evaluation	PG&E	No	2010-2012 PG&E WHOLE HOUSE RETROFIT PROGRAM	12/31/13	This report documents the findings and recommendations from the 2010-2012 PG&E Whole House Retrofit Program.	2011 2012	SBW Consulting, Inc. / Opinion Dynamics	http://www.calmac.org/publications/2010-2012_PG%26E_Whole_House_Retrofit_Program.pdf	Included	California/P&G&E Whole House Retrofit Program	provides basic and advanced home upgrades.
7	CPU0069.01	6		Energy Efficiency	Impact Evaluation	CPUC	No	2010-2012 Evaluation of the California Statewide Building Energy Codes and Standards Compliance	2/26/14	This report presents findings from an impact evaluation of the 2010-2012 California Statewide Building Energy Codes and Standards Compliance Program.	2010 2011 2012	Opinion Dynamics / Itron, Inc.	http://www.theboc.info/pdf/Eval_Impact_California_BOC_Program_Evaluation.pdf	Excluded - no res h parts		
8	CPU0070.01	7		Energy Efficiency	Process Evaluation	SCE / SDGE /	No	2010-2012 Statewide Building Energy Codes and Standards Compliance	4/15/14	This report presents the findings and recommendations from the 2010-2012 Statewide Building Energy Codes and Standards Compliance Program.	2010 2011 2012	Kema Inc. / CADMUS	CEP-Report_FINAL_PUBLISHED.pdf	Excluded - no res h parts		
9	PGE0338.01	8		Energy Efficiency	Program Design	SCE / SDGE /	No	2010-2012 Joint Utilities Financing Research	4/28/14	This report informs the design and evaluation efforts related to the 2010-2012 Joint Utilities Financing Research Program.	2014	CADMUS	Existing_Programs_Review_FINAL.pdf	Excluded - no res h parts	Review of 15 financing programs (all non-CA)	
10	PGE0339.01	9		Energy Efficiency	Program Design	PG&E	No	2010-2012 EVALUATION FOR PG&E'S ENERGY UPGRADE CALIFORNIA WHOLE HOUSE STANDARDS	5/5/14	This report provides the process evaluation findings for the 2010-2012 PG&E's Energy Upgrade California Whole House Standards Reach Code Subprogram.	2013	SBW Consulting, Inc. / Opinion Dynamics	PGE_EUC_MF_Pilot_Eval_Final_Report.pdf	Excluded - no res h parts	PG&E's Energy Upgrade California Whole House Standards Reach Code Subprogram	review a comprehensive approach to MF whole-building energy upgrades.
11	CPU0070.02	10		Energy Efficiency	Impact Evaluation	CPUC	No	2010-2012 California Statewide Building Energy Codes and Standards Reach Code Subprogram	6/10/14	This report presents the findings and recommendations from the 2010-2012 California Statewide Building Energy Codes and Standards Reach Code Subprogram.	2010 2011 2012	CADMUS / DNV GL	PY2010-2012_Reach_Code_Study_Published.pdf	Excluded - no res h parts	Reach Code Subprogram	jurisdictions to develop and adopt reach codes.

California meta-study
**Frequency of demographic data
collection and publication**

Collection and publication of demographic characteristics in California program evaluations, 2010-2012

42

**evaluations
with residential
participants**

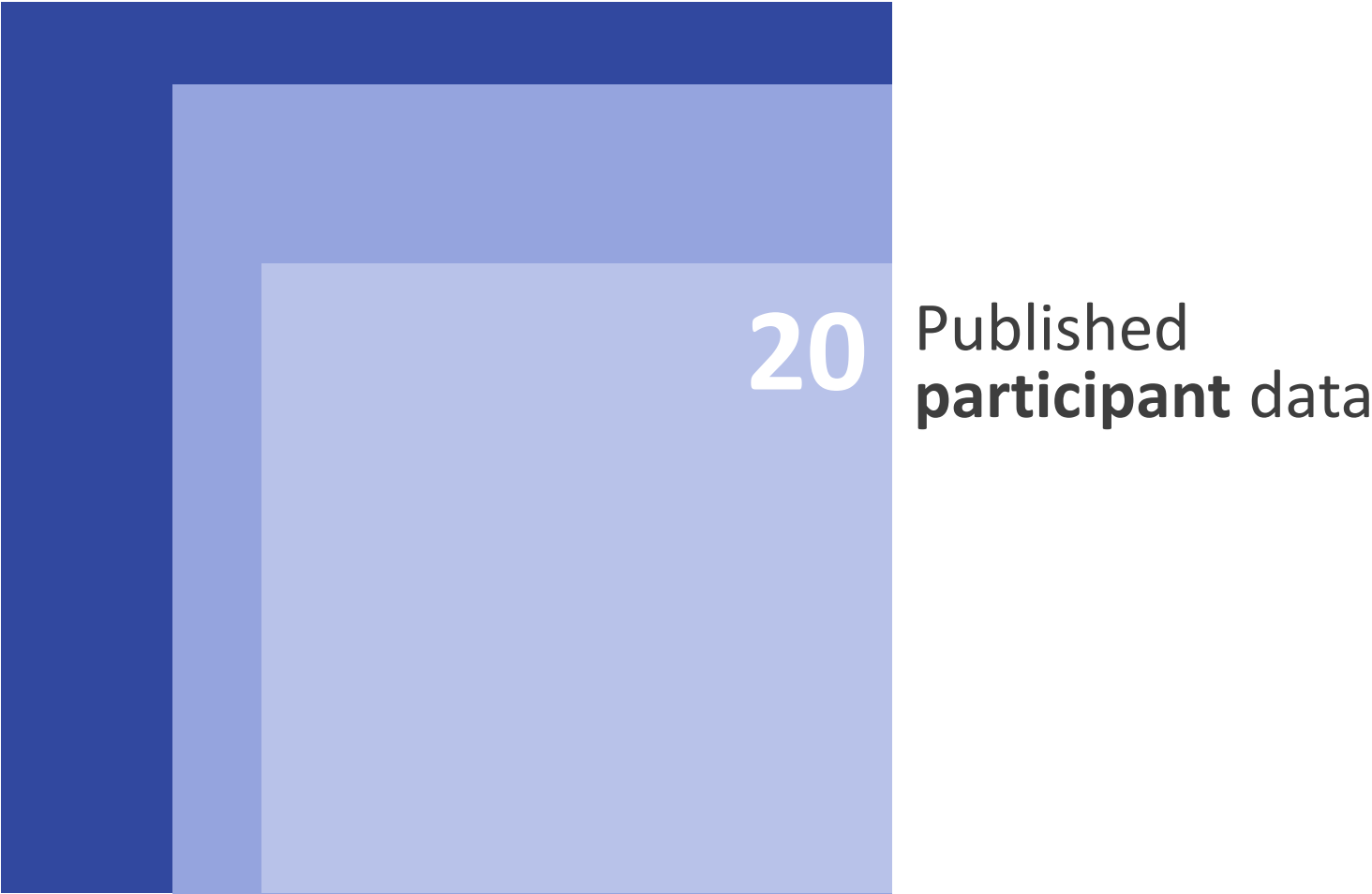
Collection and publication of demographic characteristics in California program evaluations, 2010-2012



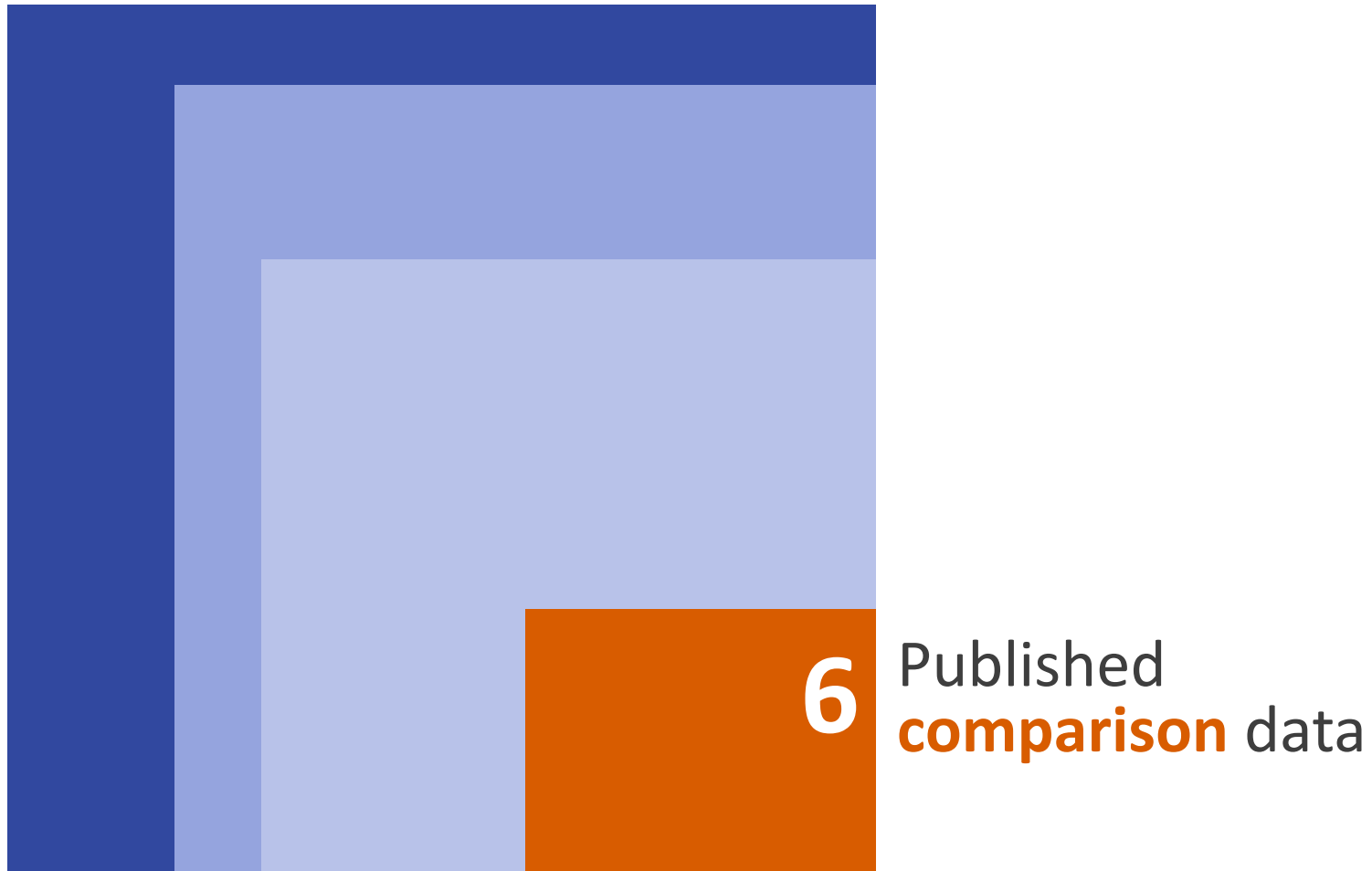
29

Collected
participant data

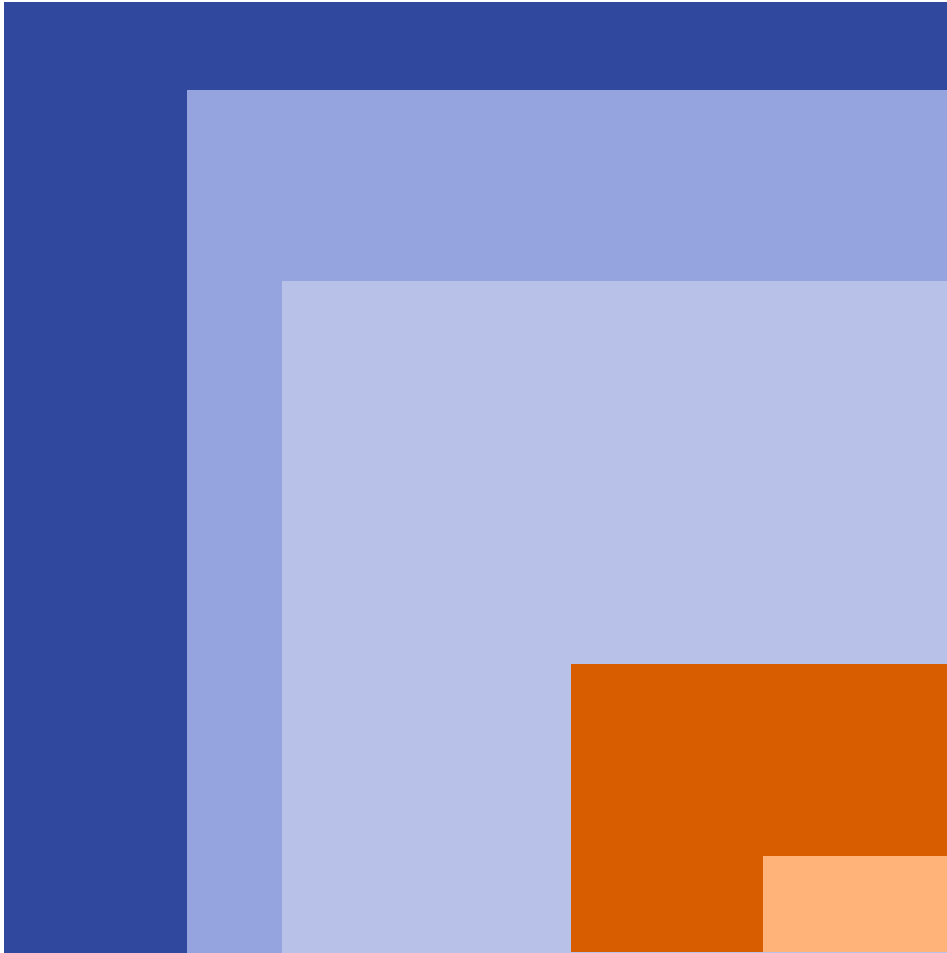
Collection and publication of demographic characteristics in California program evaluations, 2010-2012



Collection and publication of demographic characteristics in California program evaluations, 2010-2012



Collection and publication of demographic characteristics in California program evaluations, 2010-2012



1 study

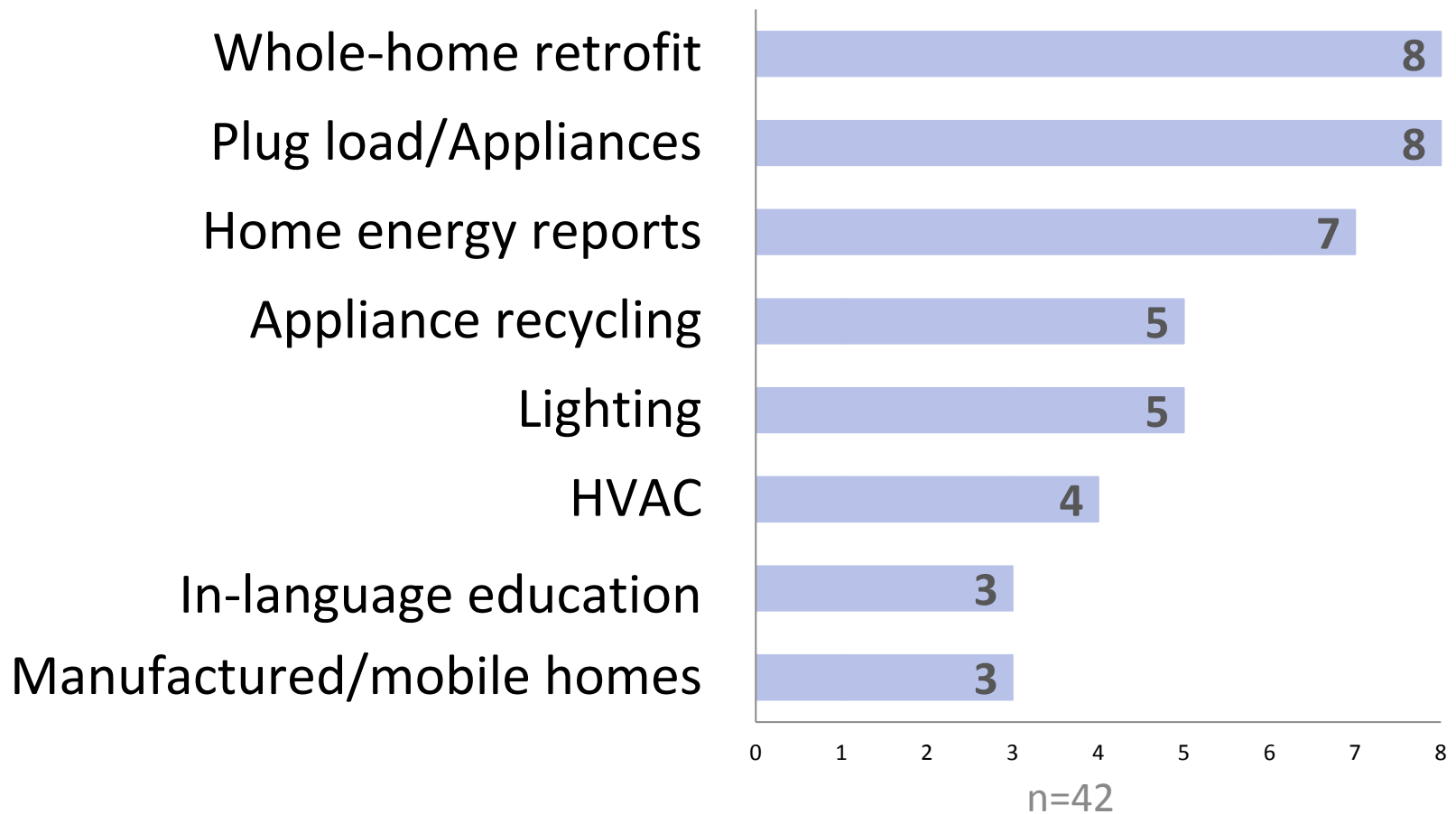
made specific program design recommendations based on a comparison of participants to population

California meta-study

Differences by program and data type

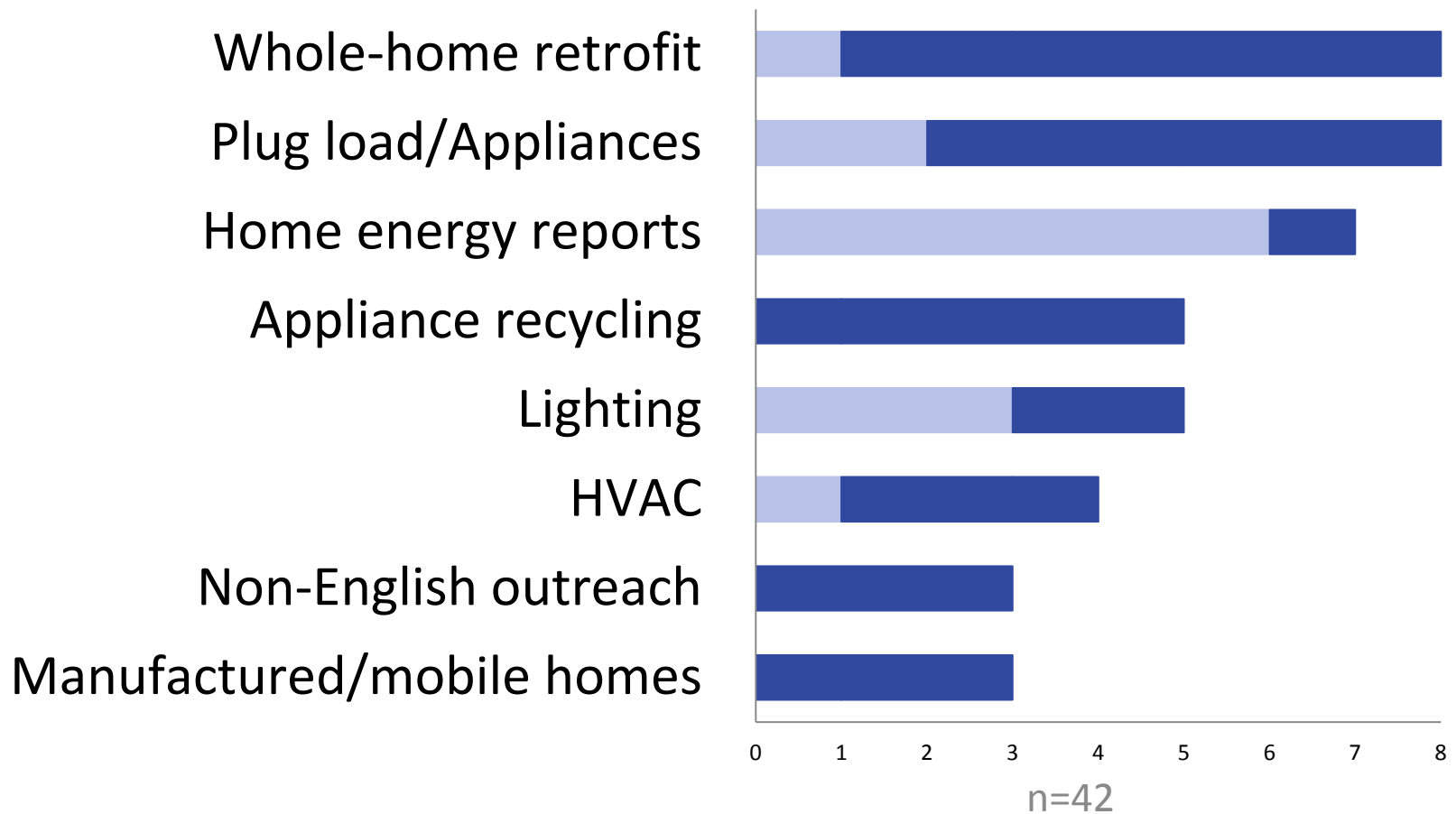
California evaluations by program type, 2010-2012, that . . .

Had residential participants



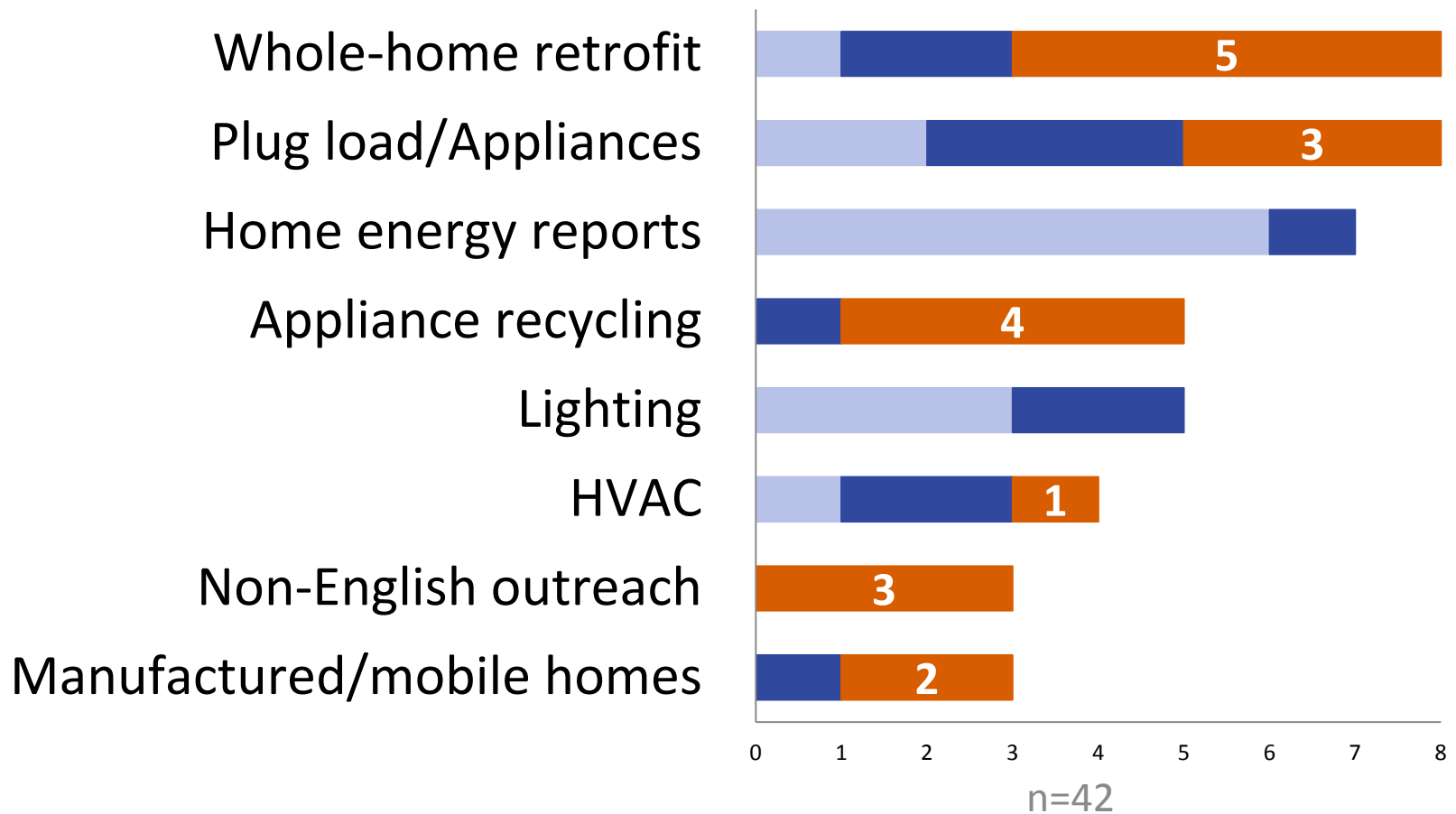
California evaluations by program type, 2010-2012, that . . .

Collected demographic data

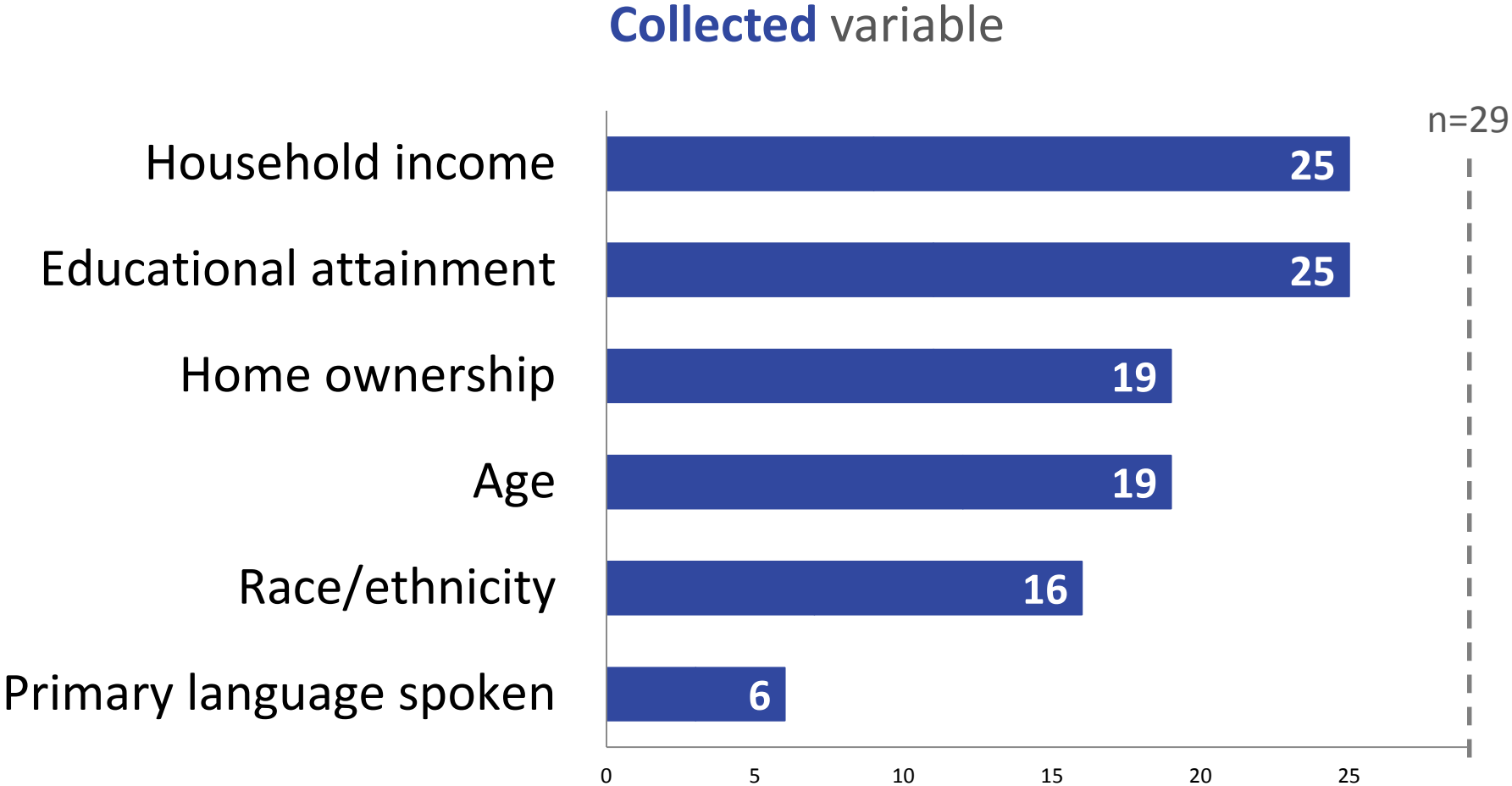


California evaluations by program type, 2010-2012, that . . .

Collected demographic data
Published demographic data



California evaluations that collected demographic data, by variable type, 2010-2012



California meta-study
Three challenges in the data

#1 Between-study consistency

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Select one

How would you describe your race or ethnicity?

1. White or Caucasian
2. Hispanic, Mexican, Latino, Puerto Rican, or other Hispanic

#1 Between-study consistency

Select one

How would you describe your race or ethnicity?

1. White or Caucasian
2. Hispanic, Mexican, Latino, Puerto Rican, or other Hispanic

Select many

What is your ethnicity/race?

1. White or Caucasian
2. Hispanic/Latino/a

#1 Between-study consistency

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Select many

What is your ethnicity/race?

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Two questions

What is your ethnicity/race?

Are you Spanish, Hispanic, or Latino?

#2 Study-baseline consistency

American Community Survey

What is Person 1's race?

1. White
2. Black or African Am.
3. American Indian or Alaskan native
- ...

Is Person 1 of Hispanic, Latino, or Spanish origin?

1. No, not of Hispanic, Latino, or Spanish origin
2. Yes, Mexican, Mexican Am., Chicano
3. Yes, Puerto Rican
4. Yes, Cuban
5. Yes, another Hispanic, Latino, or Spanish origin

#3 Partial published data

#3 Partial published data

- Proportion white participants only

#3 Partial published data

- Proportion white participants only
- **Median income only**

#3 Partial published data

- Proportion white participants only
- Median income only
- **Income above/below \$100,000**

#3 Partial published data

- Proportion white participants only
- Median income only
- Income above/below \$100,000
- **No incremental income data < \$50,000**

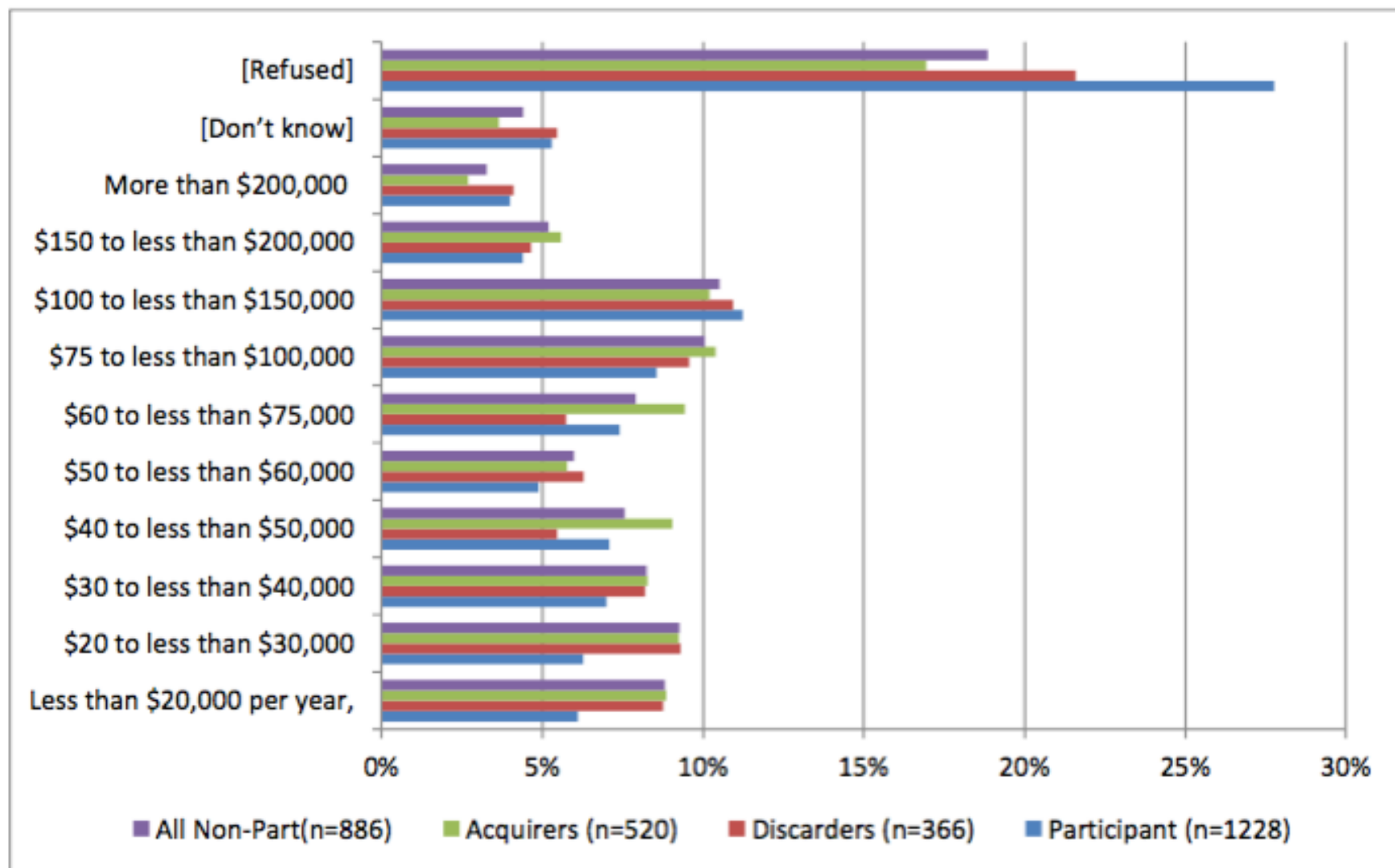
#3 Partial published data

- Proportion white participants only
- Median income only
- Income above/below \$100,000
- No incremental income data < \$50,000
- **No tabular data**

Table 7: Participant Demographics

	2012	2011
Participant Age	(n=100)	(n=62)
18-24	0%	3%
25-34	6%	15%
35-44	19%	19%
45-54	16%	23%
55-64	30%*	15%
65-74	16%	19%
75 and older	5%	6%
Refused	8%	-
Household Income	(n=80)	(n=61)
Over \$150,000	30%	34%
\$100,000 to \$150,000	31%*	18%
\$75,000 to \$100,000	15%	8%
\$50,000 to \$75,000	10%	18%*
\$35,000 to \$50,000	6%	11%
Under \$35,000	8%	10%
Education	(n=100)	(n=62)
Less than high school	-	-
High school graduate	9%	5%
Some college, vocational , or technical school	15%	19%
College educated (including post graduate)	74%	74%
Refused	2%	2%
Race/Ethnicity (multiple response)	(n=100)	(n=62)
White/Caucasian	73%	77%
Hispanic, Mexican, Latino, Puerto Rican, Hispanic	8%	5%

Figure 12: Household Income of Respondent



California meta-study
Select findings

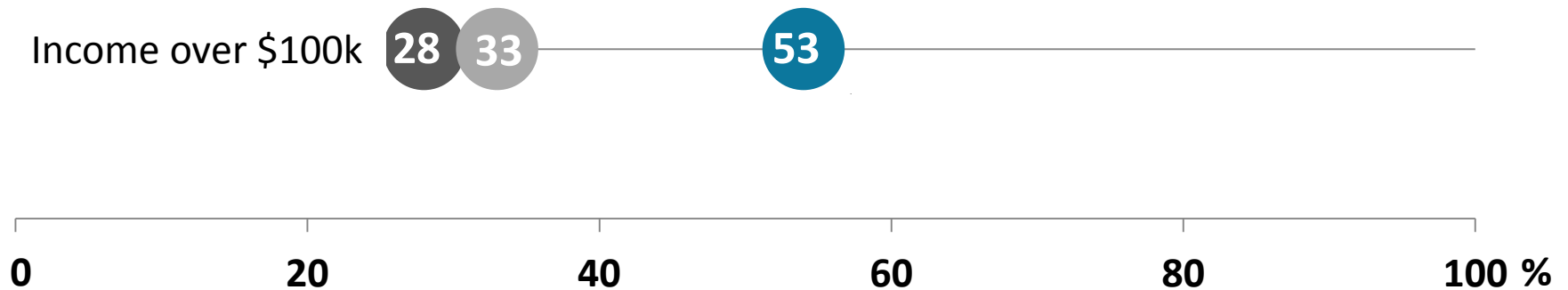
Findings Overview: Select California energy efficiency programs, 2010-2012

	Whole-house Retrofit	Plug Load/ Appliances	In-language education	Mfg'd home direct install
Income > \$100k	53%	48%	10%	Unknown
College degree	74%	87%	56%	11%
White	72%	Unknown	0%	94%
Primarily English speakers	Unknown	Unknown	3%	Unknown

Whole-house Retrofit: SCE, PG&E, SDG&E

Participants had high incomes

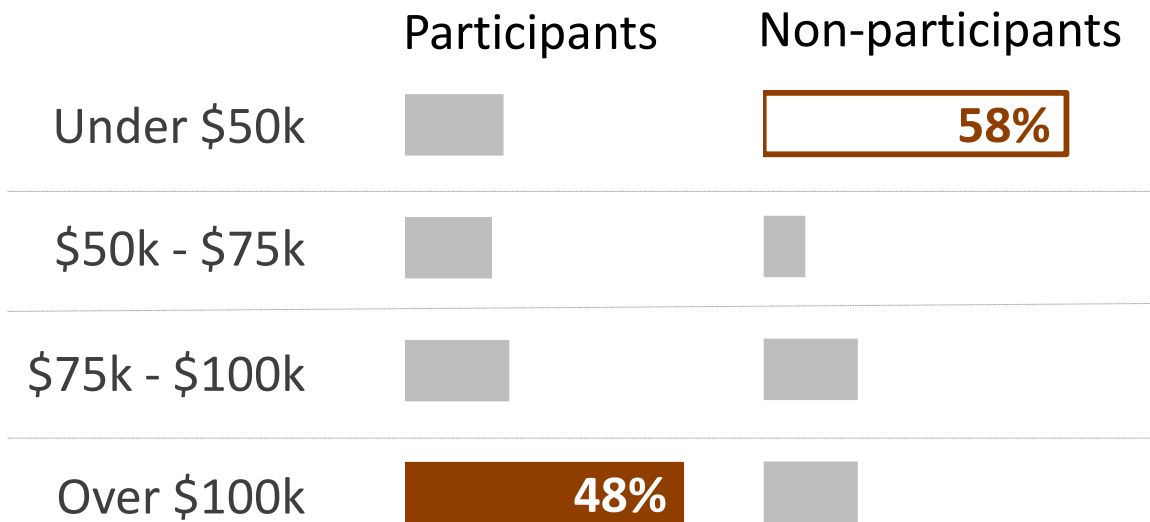
Compared to California ACS census data and RASS single-family homeowners



Appliances: SCE, PG&E, LADWP

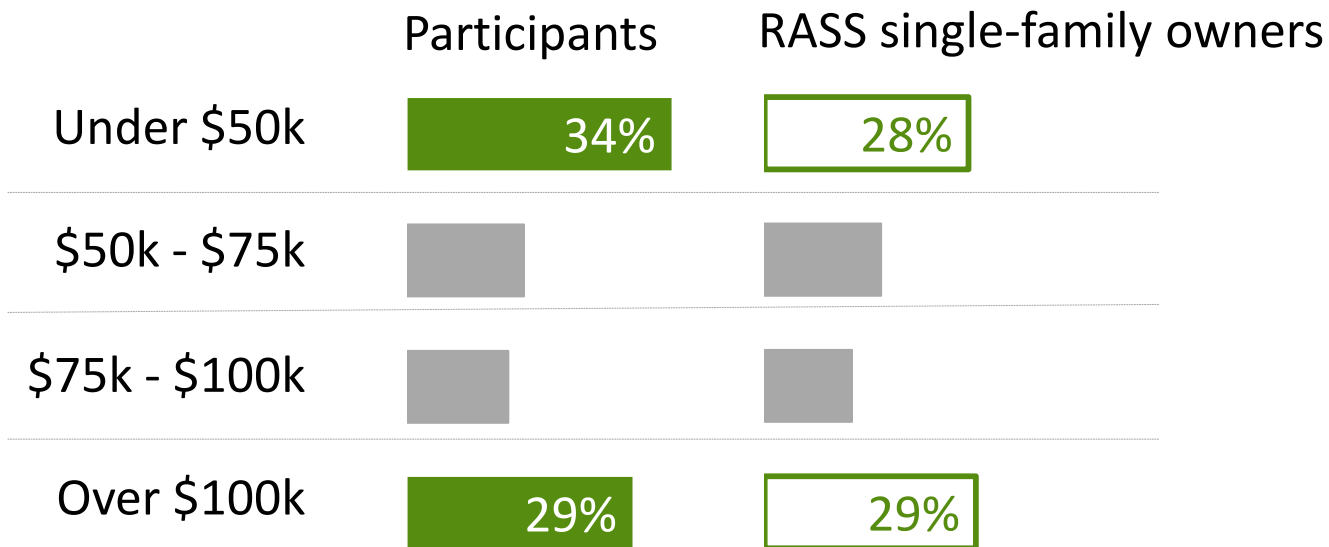
Nearly half of participants had incomes over \$100k

A majority of non-participants had incomes under \$50k



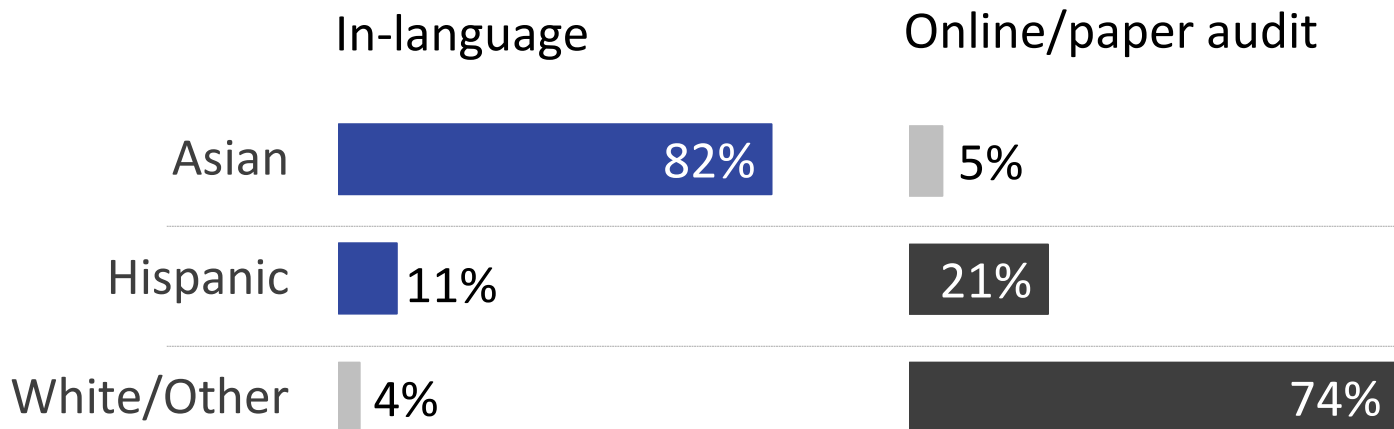
Refrigerator Recycling: SCE, PG&E, SDG&E, LADWP

Participants' income distribution is comparable to the population of RASS single-family homeowners



Impact of: Outreach & implementation on education program participants

In-language participants differed from online/paper home audit participants in race/ethnicity



What data do *you* have?

Population survey

Customer data

Program participant data

Evaluation survey

Energy audit

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