



The Surveys Are In! A Comparison of Three Commercial Market Share Data Collection Methods

Samantha Cole

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CONTEXT

- » Goal: Analyze strategies of commercial market share data collection in terms of relative data quality
- » Commercial Market Share Tracking (CMST) Study, 2014
 - CPUC 2010-2012 program cycle
 - Linear fluorescents and small HVAC units purchased/installed in nonresidential sector in California between 2009-2012
- » Team includes:
 - Priya Sathe, Itron
 - Jean Shelton, Itron
 - Lisa Paulo, CPUC

METHODS COMPARED

- » 3 data collection methods:
 - End-user telephone surveys
 - End-user on-site surveys
 - Contractor telephone surveys

- » Methods vary in:



Data accuracy



Data granularity



Cost

OVERVIEW OF SURVEYS

	End-User Telephone Survey	End-User On-Site Survey	Contractor Telephone Surveys
Objectives	<ul style="list-style-type: none"> • Collect firm demographics and recent purchase info • Recruit for on-site survey 	<ul style="list-style-type: none"> • Verify telephone survey & find additional recent purchases • Collect quantity, year of purchase, & make/model numbers 	<ul style="list-style-type: none"> • Determine efficiency distribution of sales from 2011-2012 • Identify market share changes since ban on T12 production
Sample	<ul style="list-style-type: none"> • Based on population of California nonresidential sites in IOU electric frame 	<ul style="list-style-type: none"> • CMST sites • CSS sites 	<ul style="list-style-type: none"> • Lighting: developed from list of electrical contractors • HVAC: developed from list of contractors with current C20 licenses

OVERVIEW OF SURVEYS

	End-User Telephone Survey	End-User On-Site Survey	Contractor Telephone Surveys
Administered	• Nov 2011 – Apr 2013	• Nov 2011 – May 2013	• Lighting: 2013 Q2-Q3 • HVAC: 2013 Q4
Completed Surveys	• 7,890	• Lighting: 568 • HVAC: 197	• Lighting: 95 • HVAC: 123

- » End-User On-Site Survey
 - Most detailed, reliable data of the 3 methods
 - Trained surveyors
 - Photos & make/model numbers
 - Knowledgeable site contact

RESULTS

End-User Telephone Surveys vs. End-User On-Site Surveys

» Lighting Aggregate Incidence Analysis

Efficiency Level	Telephone Survey Percent of Businesses	On-Site Survey Percent of Businesses
T12	12%	4%
T8 (Not high performance)	56%	58%
High performance T8	11%	31%
T5	11%	10%
LED	0.40%	0.26%
<i>n</i>	1,264	568

» HVAC Aggregate Incidence Analysis

Efficiency Level	Telephone Survey Percent of Businesses	On-Site Survey Percent of Businesses
Base Efficiency	21%	87%
High Efficiency	57%	18%
<i>n</i>	1,394	198

RESULTS

End-User Telephone Surveys vs. End-User On-Site Surveys

» Lighting Site-Level Comparison Analysis

Recently Purchased Linear Fixtures?	Verified On Site	Not Verified On Site		<i>n</i>
		False Negative	False Positive	
Telephone – Yes	78%		22%	305
Telephone – No	74%	26%		1,251
Total	75%	21%	4%	1,556

» HVAC Site-Level Comparison Analysis

Recently Purchased Cooling Equipment?	Verified On Site	Not Verified On Site		<i>n</i>
		False Negative	False Positive	
Telephone – Yes	39%		61%	329
Telephone – No	94%	6%		1,227
Total	83%	4%	13%	1,556

RESULTS

Contractor Telephone Surveys vs. End-User On-Site Surveys

» Lighting Results

Efficiency Level	Lighting Contractor Telephone Survey, 2011-2012	End-User On-Site Survey, 2011-2012
Base Efficiency	38%	30%
T12	3%	0.44%
Standard 700-series T8	10%	20%
Standard 800-series T8	25%	9%
High Efficiency	62%	70%
High performance T8	20%	21%
Reduced wattage T8	15%	43%
T5	20%	6%
LED	3%	0.25%
<i>n</i>	82	246

RESULTS

Contractor Telephone Surveys vs. End-User On-Site Surveys

» HVAC Results

Efficiency Level	HVAC Contractor Telephone Survey, 2011-2012	End-User On-Site Survey, 2011-2012
Base Efficiency	78%	65%
High Efficiency	22%	35%
14-14.99 SEER	14%	0.46%
15-15.99 SEER	4%	13%
16-16.99 SEER	4%	17%
≥ 17 SEER	-	5%
<i>n</i>	123	99

CONCLUSIONS

- » End-user telephone surveys:
 - Do not provide accurate picture of market share
 - Useful for on-site recruitment
 - Relatively inexpensive
- » End-user on-site surveys:
 - Yield reliable data (with trained surveyors & quality controls)
 - Provide detailed data
 - Relatively costly
- » Contractor telephone surveys:
 - Provide reasonably accurate high-level info
 - Cost-effective alternative to on-site surveys
 - Quicker feedback on market trends
 - Target lower-incidence equipment types

THANK YOU



CONSULTING & ANALYSIS – SAN DIEGO

12348 High Bluff Drive, Suite 210

San Diego, CA 92130

United States

Phone 858.724.2620

Fax 858.724.2690

www.itron.com