

The Response Outreach Area Mapper (ROAM): A new tool to identify, understand, and manage hard-to-survey areas

*AAPOR Annual Conference, Denver CO
Friday May 18, 2018*

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Census Bureau Releases the Response Outreach Area Mapper Web Application

February 07, 2018

Release Number: CB18-TPS.06



Feb. 7, 2018 — Today, the U.S. Census Bureau released the [Response Outreach Area Mapper \(ROAM\)](#) web application. This interactive map makes it easier to identify areas that typically have low response rates for censuses and surveys.

Community planners and local officials can use this information to plan, focus and allocate resources for encouraging response to the 2020 Census. The tool also allows the Census Bureau to tailor outreach efforts and to plan resources, including hiring staff with the right language skills.

These efforts can lead to higher response rates for the 2020 Census, making the census more accurate and more efficient. Census results affect a community's voice in government, how much funding the community receives, and how it plans for the future.

The ROAM tool provides tract-level data on the area's low response score (predicted mail non-response rate) and information about its people and households from the American Community Survey, including poverty status, education level, race, Hispanic origin and language ability.

ROAM can also be used to:

- Identify areas where special outreach and promotion efforts could be considered to increase participation in the variety of surveys the Census Bureau conducts.
- Link spatial map data files to create thematic maps showing low response scores in conjunction with demographic data.
- Generate reports, cross tabulations and simple analyses of demographic data.
- Identify hard-to-count tracts by response score and according to specific parameters (e.g., tracts within a certain county).

No news release associated with this product. Tip sheet only.

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Related Information

[Blog entry](#)

Introduction

- In 1990s Census Bureau developed a Hard to Count Score (HTC)
- Households in each census tract assigned a score
- The higher the score, the harder to count
- Field Division used the score to make hiring decisions and resource allocations
- Partnership Specialists used the score in 2000 and 2010 Censuses to identify areas requiring extra effort
- *For 2020 Census a new hard-to-survey metric has been developed: the Low Response Score (LRS)*

For methodology of LRS see...

Erdman, C. and N. Bates (2017). The Low Response Score (LRS): “A Metric to Locate, Predict, and Manage Hard-to-Survey Populations”, *Public Opinion Quarterly*, Volume 81, Issue 1, 1 March 2017, pp. 144–156.

Low Response Score

- LRS = predicted level of Census self non-response at the tract level
- Values from 0-100
- So, for example, if LRS=25, we are estimating that **25% of households in that tract will not self-respond** to the Census
- LRS is **updated yearly** using new 5-year ACS

Low Response OLS Linear Model

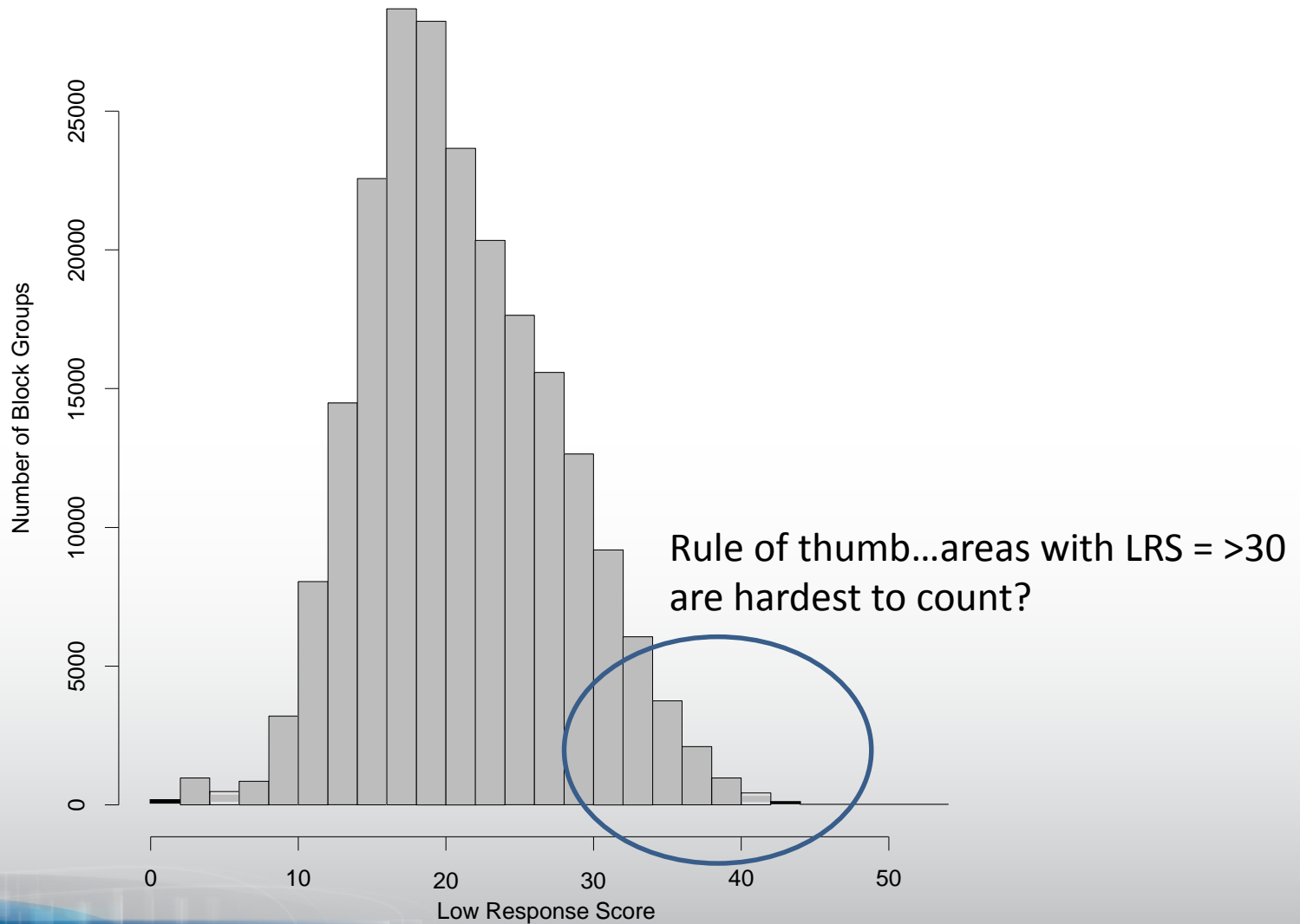
	Coef	Sig		Coef	Sig
(Intercept)	10.29	***	Renter occupied units	1.08	***
Ages 18-24	0.64	***	Female head, no husband	0.58	***
Non-Hispanic White	-0.77	***	Ages 65+	-1.21	***
Related child <6	0.46	***	Males	0.09	***
Married family households	-0.12	***	Ages 25-44	-0.06	
Vacant units	1.08	***	College graduates	-0.32	***
Median household income	0.24	***	Ages 45-64	-0.08	*
Persons per household	3.44	***	Moved in 2005-2009	0.09	***
Hispanic Any Race	0.41	***	Single unit structures	-0.52	***
Population Density	-0.40	***	Below poverty	0.11	***
Different HU 1 year ago	-0.12	***	Ages 5-17	0.17	***
Non- Hispanic Black	-0.04	**	Single person households	-0.24	***
Not high school grad	-0.06	***	Median house value	0.71	***

Sig: *** $p < .001$; ** $.001 \leq p < .01$; * $.01 \leq p < .05$ R-

squared: 56.10%, $n = 217,417$

Main Effects only, no interaction terms

Distribution of the LRS



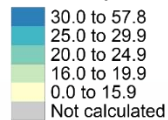
However, think locally...

- What constitutes a “high” LRS depends
- Are you concerned with a particular State, Census Region, Place, or County?
- If yes, extract tracts within that geographic area and produce custom LRS distribution
- What score is cutoff for top decile? Quintile?
- Identify tracts matching your cutoff

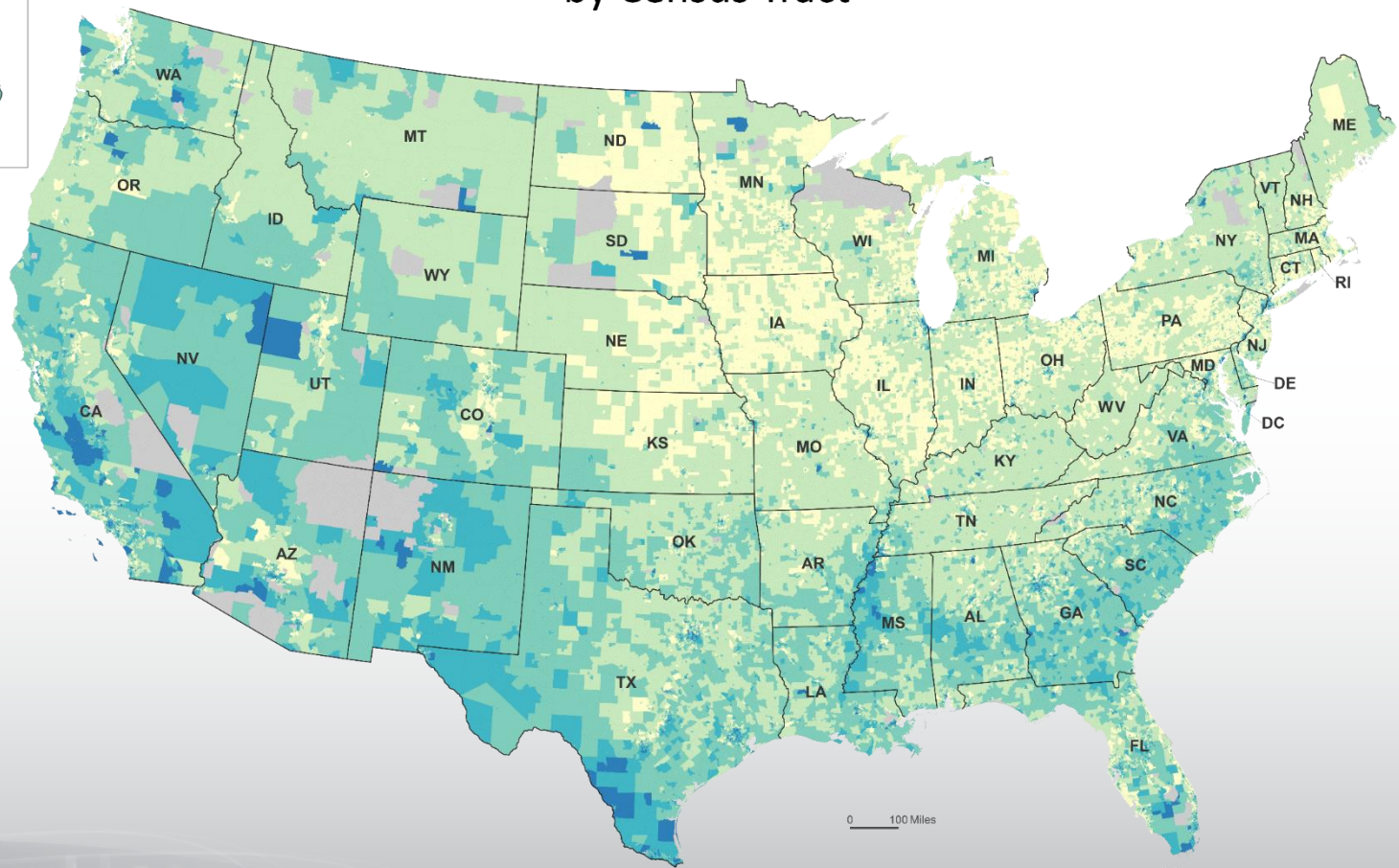
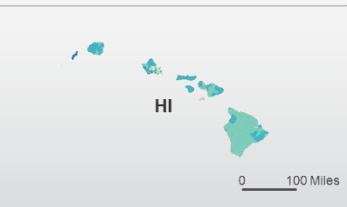
Low Response Score (LRS) by Census Tract



Predicted Mail Non-Response Rate (%)



Source: U.S. Census Bureau,
2016 Planning Database,
2014 Cartographic Boundary Shapefiles



How do I access the LRS?

- We have built a Web browser-based LRS application
- Branded as: *Response Outreach Area Mapper (ROAM)*
www.census.gov/roam
- Public interface to map and display characteristics of hard-to-survey areas from the PDB
- ROAM displays census tracts indicating hard-to-survey areas (darker color = higher LRS = harder-to-count)
- ROAM also displays selected variables describing the census tracts
- Allows users to set customized parameters and pull extracts



One Week Before Next Milestone in 2018 Census Test

May 02, 2018

Residents have one more week to respond to the 2018 Census Test taking place in Providence County, R.I.



Falta una semana para el próximo hito en la Prueba del Censo del 2018

May 02, 2018

Queda una semana para responder a la Prueba del Censo 2018 que se lleva a cabo en el condado de Providence, Rhode Island.



Census Bureau Researchers Present Findings at the 2018 PAA Conference

April 27, 2018

Researchers from the U.S. Census Bureau will join other demographers, sociologists, economists and professionals at the PAA conference in Denver.

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3 2 7 6 8 1 4 0 4

COMPONENTS OF POPULATION CHANGE

One birth every 8 seconds



One death every 12 seconds



One international migrant (net) every 29 seconds



Net gain of one person every 14 seconds



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If you have received a survey, this site will help you verify that the survey came from us, understand and complete the form, and know how we protect your data.



Response Outreach Area Mapper (ROAM)

This interactive map makes hard-to-survey areas easier to identify using American Community Survey (ACS) estimates available in the Planning Database.



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2020 Census News

The 2020 Census hopes to provide substantial taxpayer savings while maintaining our commitment to high quality and accuracy.



Road to the 2020 Census



LRS limitations/cautions

- Only considers mail self-response – 2020 Census will offer **internet, phone AND mail**
- Some tracts have small Ns in mailback universe, e.g. **Indian reservations, very rural areas**
- If LRS is extremely high, take a closer look

That said....LRS does pretty well predicting ACS self-response (tract level)

Independent variables	R ² for propensity models	
	2010 Census mail return rate n=71,657	ACS 2013-2016* self-response rate n=71,454
Low Response Score (LRS)	0.59	0.64

*Internet and mail responses combined

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ROAM Demonstration

www.census.gov/roam