

# Creating a Neighborhood Organization Scale: Predicting Self-Reported Health Status from Interviewer Observations

Rachael Walsh, PhD  
US Census Bureau, Survey Analytics  
rachael.walsh@census.gov

## Theory

### Neighborhoods & Health

- Self-reported health status is an indicator of:
- Overall well-being
  - Mortality
  - Educational attainment
  - Social inequality
  - Access to health care
  - Socioeconomic status
  - Disability and mental health

(Baker et al 1997; Huie et al 2002; Kirby & Kaneda, 2005; Pappas, Queen, & Hadden, 1993)

### “Broken Windows” Theory

Neighborhood appearances reflect the social organization and stability of that neighborhood, such that disorganization:

- induces stress
- denotes tolerance for other negative behaviors
- increases exposure to disease and other risk factors
- reduces neighborhood’s ability to attract health care providers

(Latkin & Curry, 2003; LeClere, Rogers, & Peters, 1998; Ross & Mirowsky, 2001; Shultz et al 2000; Wilson & Kelling, 1989)

## SIPP-EHC Data

- Survey of Income and Program Participation-Event History Calendar
  - Longitudinal survey collecting information about the income dynamics of households in the U.S.
  - Annual data collection following all household members aged 15+ for 3 to 4 years
- The 2012 sample
  - 2nd wave of data collection
  - 1,930 households with 4,964 individual interviews
  - Conducted by 340 interviewers with an averaged caseload of 15.83 individuals

## Neighborhood Observations

### The Role of Interviewers

- Problems with survey data include:
  - Non-response
  - Inaccessible linking keys to accurately match data
  - Sensitivity and respondent confidentiality
  - Inconsistencies across surveys and administrative records
- Interviewers observe neighborhood characteristics related to health status as a compensatory measure
- Beneficial for other survey estimates and post-survey adjustments

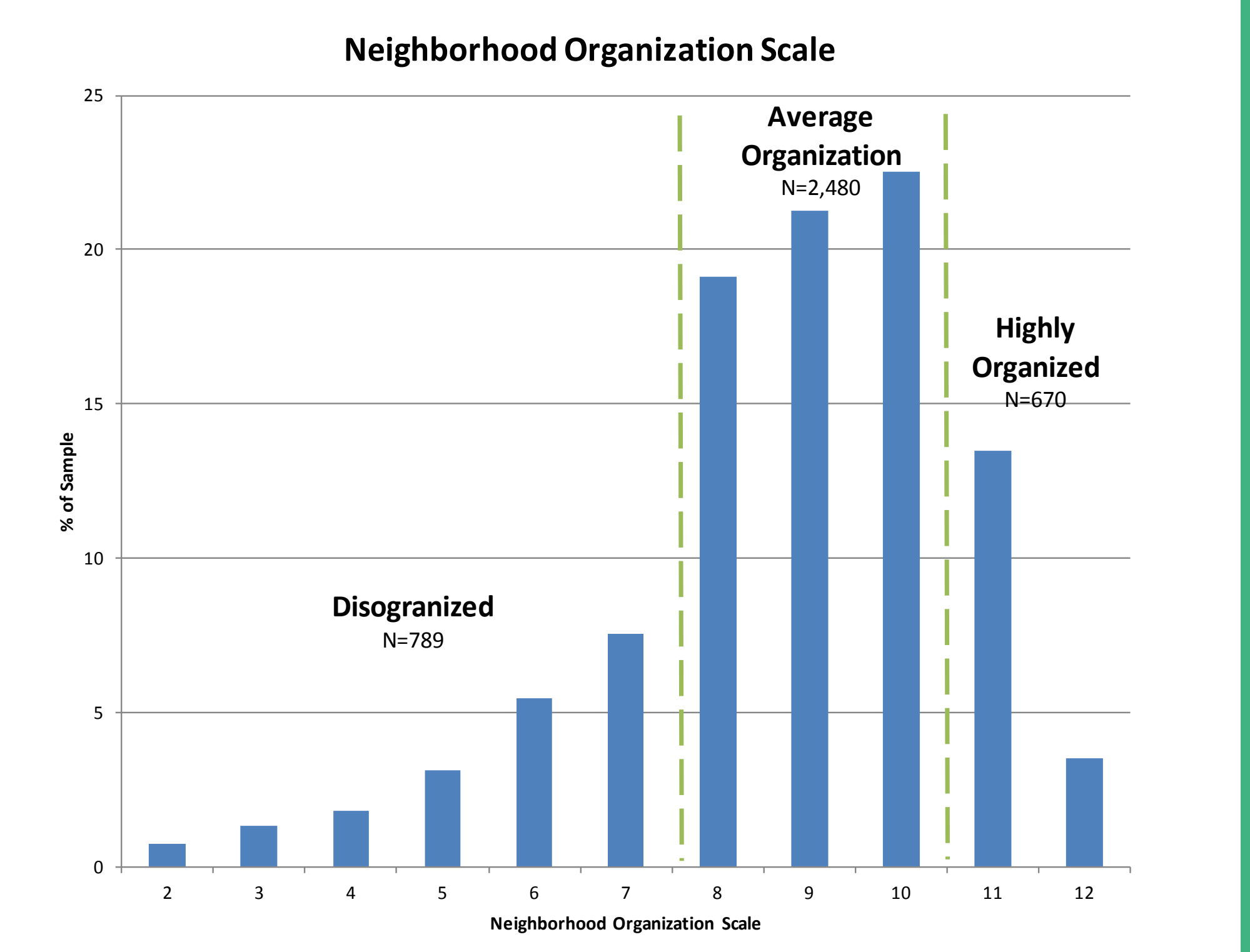
(Jones, Pebley, & Sastry, 2010; Kreuter et al, 2010; Sampson & Raudenbush, 2004; Wilson & Kelling, 1989)

### The Observations

- Patterned after questionnaire design and analytic reviews of:
  - Los Angeles Family and Neighborhood Survey (LA Fans)
  - National Survey of Family Growth (NSFG)
- Mainly dichotomous answer categories
- Included observations of the sample unit and the neighborhood

### Neighborhood Observation Scale

- Composite scale formed using the following:
- Condition of the sample unit (1 to 5 scale)
  - Broken windows
  - Abandoned vehicles
  - Presence of graffiti
  - Condition of playground equipment
  - Well-tended yards
  - Presence of gangs or other illicit activity



## Statistical Methods

### OLS Regression Models

- Models 1 & 2:
  - Establish the baseline for the organization scale
- Model 3: Personal-Only
  - model including ONLY individual demographic characteristics found to affect self-reported health status:
    - Gender
    - Race
    - Ethnicity
    - Educational attainment
- Model 4: Organization Scale
  - adds the neighborhood organization scale to the personal-only model
- Model 5: Low v. High:
  - replaces the organization scale with dichotomous indicators of low and high levels of neighborhood organization (Ferrer & Palmer, 2004)

### F-Tests

- Assesses addition of neighborhood organization as a covariate to the model (Faul, Erfelder, Buchner, & Lang, 2009)
- Calculates the difference between the estimated and reported values of self-reported health status for each model

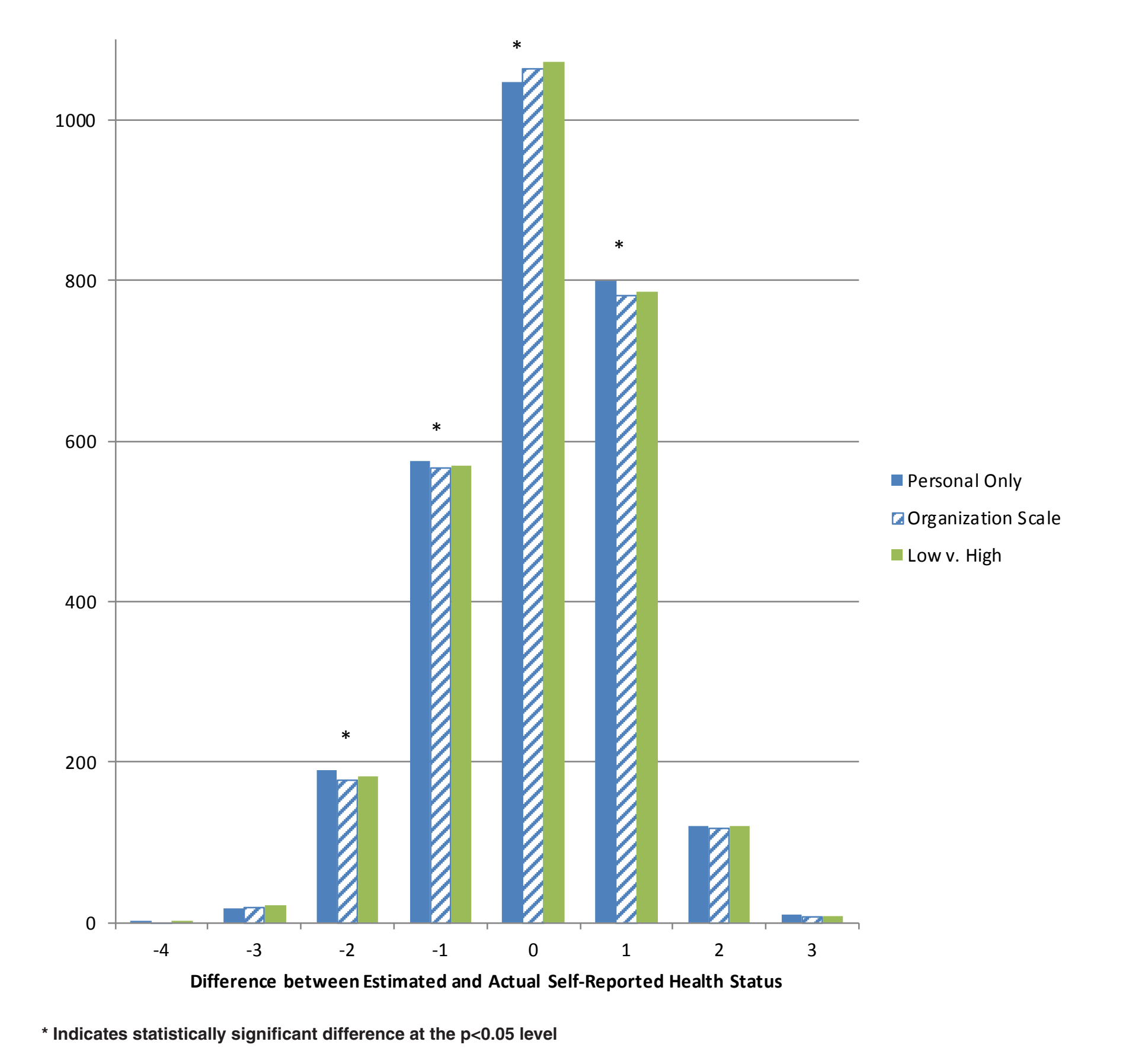
## Analysis

### OLS Regression of Self-Reported Health using the Neighborhood SES Scale

	Model 1	Model 2	Model 3	Model 4	Model 5
Male			0.13** (0.04)	0.13** (0.04)	0.13** (0.04)
Age in years			-0.03** (0.00)	-0.03** (0.00)	-0.03*** (0.00)
Race (Ref=White alone)					
Black Alone			-0.12** (0.05)	-0.07 (0.05)	-0.08 (0.06)
Asian Alone			-0.12 (0.07)	-0.08 (0.07)	-0.12 (0.08)
Other			0.09 (0.05)	0.08 (0.05)	0.08 (0.05)
Hispanic			-0.01 (0.05)	0.01 (0.05)	0.00 (0.05)
Education (Ref= Diploma/GED)					
Less than High School			-0.11** (0.04)	-0.10* (0.04)	-0.11* (0.04)
College Degree			0.32** (0.07)	0.27** (0.07)	0.29*** (0.07)
Professional Degree			0.40** (0.11)	0.33** (0.11)	0.36*** (0.11)
<25, No degree			0.19** (0.07)	0.15* (0.07)	0.16* (0.07)
Neighborhood Organization Scale					
Continuous Scale	0.04** (0.01)			0.06** (0.01)	
Disorganized Neighborhood		-0.14* (0.06)			-0.22*** (0.05)
Highly Org. Neighborhood		0.11 (0.06)			0.11* (0.05)
N	2739	2766	2764	2737	2764
R <sup>2</sup>	0.003	0.003	0.322	0.332	0.328
F-test				40.70***	15.36***

Standard errors in parentheses  
\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

### Differences between Estimated and Actual Self-Reported Health Status by Model



## Results

### OLS Results

- Disorganized neighborhoods have a more significant effect on self-reported health status than highly organized neighborhoods
- Neighborhood organization mediates for the effect of being Black alone.
- Neighborhood organization explains an additional 1% of variation in self-reported health status

### F-Test Results

- Adding the neighborhood scale predicts self-reported health status more accurately than using individual demographics alone.
- Interviewer observations add a statistically significant, independent predictor of self-reported health status.

### Implications for Interviewer Provided Data

- Potential consideration during post-survey adjustments would require:
  - Additional assessment of the quality of the observations
  - Further testing of question wording and items observed
- Debriefing with the interviewers indicated these questions were not confusing or cumbersome.

### Directions for Further Testing

- Assess other uses of these observations, such as:
  - Provide guidance for data collection (known as adaptive or responsive design)
  - Ability to predict other key survey estimates
- Enhanced interviewer training:
  - Include photographic demonstrations to create consistency across interviewers (Stähli, 2011)
  - Practice with rating and identification
- Implement measures of validity and consistency to test the quality of the observations

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