

National Neighborhood Data Archive (NaNDA): Socioeconomic Status and Demographic Characteristics of Census Tracts, United States, 2008-2017



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nanda_ses_tract_2008-2017_04P.dta
nanda_ses_tract_2008-2017_04P.csv
nanda_ses0817T_04P.sas7bdat

Overview and Data Dictionary

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Dataset Overview

Description

This dataset contains measures of socioeconomic and demographic characteristics by US census tract for the years 2008-2017. Example measures include population density; population distribution by race, ethnicity, age, and income; and proportion of population living below the poverty level, receiving public assistance, and female-headed families. The dataset also contains a set of index variables to represent neighborhood disadvantage and affluence.

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Data Sources

Population values and percentage variables per census tract are from the American Community Survey five-year estimates for 2008-2012 and 2013-2017 (US Census Bureau 2012, 2017). Both are based on census tract boundaries as of 2010.

Land area for each census tract comes from the TIGER/Line shapefiles. The version released in 2010 (US Census Bureau 2010) was used to maintain consistency with other NaNDA datasets.

Coverage

The dataset contains one observation per census tract in the fifty United States and Puerto Rico.

Methodology

This dataset contains key variables from the US Census Bureau's American Community Survey that describe the socioeconomic status and demographics of each census tract. It also contains three theoretically derived measures of neighborhood disadvantage, affluence and ethnic/immigrant concentration. This dataset complements a similar version, based on the same theoretical findings, that was created and published previously for 2000-2010 (Clarke & Melendez, 2019).

To construct this dataset, we extracted key census indicators related to race, ethnicity, age, income level, employment, poverty, and home ownership from the ACS 2012 five-year estimate (covering 2008-2012). We merged the variables with the same variables from the ACS 2017 five-year estimate (covering 2013-2017) and with each tract's land area from the 2010 TIGER/Line shapefiles for census tracts. We then used those variables to construct three indices as described below: neighborhood disadvantage, neighborhood affluence, and ethnic immigrant concentration.

Construction of the index variables was informed by previous work to construct a set of variables that would characterize the sociodemographic structure of census tracts over time. In 2000, we conducted a principal factor analysis with an orthogonal varimax rotation of ten census

indicators (log transformed to correct positive skew) (Morenoff et al., 2007). Our aim was to derive a parsimonious set of factors that capture the shared variance of a broad spectrum of neighborhood structural characteristics. Results from the factor analysis indicated three separate factors:

- The first factor, which we interpret as neighborhood disadvantage, is characterized by high levels of poverty, unemployment, female-headed families, households receiving public assistance income, and a high proportion of African Americans in a census tract.
- The second factor represents a mix of characteristics associated with neighborhood affluence (concentrations of adults with a college education; with incomes > \$75K; and employed in managerial and professional occupations). Distinguished from other non-disadvantaged census tracts by their large share of high income, highly-educated, adults in professional occupations, affluent census tracts are likely to attract a set of institutions (e.g., food stores, places to exercise, well-maintained buildings and parks) that foster a set of norms (e.g., an emphasis on exercise and healthy diets) conducive to good health (Clarke et al., 2014). Distinct from simply being the absence of neighborhood disadvantage, neighborhood affluence is associated with higher levels of social control and leverage over local institutions that can foster social environments that facilitate health (Browning & Cagney, 2003).
- The third factor represents ethnic and immigrant concentration. Higher values indicate more Hispanic and foreign born in the census tract.

Results from this factor analysis were used to guide the creation of the neighborhood SES indices.

- Neighborhood socioeconomic disadvantage is an average of five census indicators (proportion non-Hispanic Black, proportion of female headed families with children, proportion of households with public assistance income or food stamps; proportion of families with income below the federal poverty level; proportion of population age 16+ unemployed) ranging from 0 to 1.0.
 - Note: A separate neighborhood disadvantage index is created without non-Hispanic Black, including only four census indicators (proportion of female headed families with children, proportion of households with public assistance income or food stamps; proportion of families with income below the federal poverty level; proportion of population age 16+ unemployed). This measure should be used in statistical models when individual race is also included as a covariate.
- Neighborhood affluence is an average of three census indicators (proportion of households with income greater than \$75K, proportion of population age 16+ employed in professional or managerial occupations; proportion of adults with Bachelor's Degree or higher) ranging from 0 to 1.0.
- Neighborhood ethnic immigrant concentration is an average of two census indicators (proportion Hispanic, proportion foreign born).

Usage Note

Users wanting to combine this dataset with measures from 2000-2010 should be aware of key differences between how measures are calculated across the two datasets.

For the year 2000, the indicators necessary to build these neighborhood disadvantage and affluence measures came from the decennial census. These variables were moved to the American Community Survey (ACS) in 2005 and removed from the decennial census in 2010 with the introduction of the American Community Survey. In more recent years, they can be found only in ACS five-year estimates.

When constructing measures for 2000-2010, we used data from the 2000 decennial census to represent 2000, and data from the 2008-2012 American Community Survey five-year estimate to represent 2010 (the midpoint of the range). Because no data was available for the intervening years, we imputed values for 2001-2009 using a linear interpolation between the two endpoints.

Source data for this revision comes exclusively from the ACS five-year estimate. A new ACS five-year estimate is released each year, so interpolation of intervening years is no longer necessary. However, the Census Bureau recommends against combining data from overlapping five-year estimates (US Census Bureau 2019), so census indicator values cannot be added on for every most recent year's ACS five-year estimate.

To avoid the use of overlapping estimates or changing previously released estimates for 2000-2010, we chose to derive updated measures from the ACS five-year estimates for 2008-2012 and 2013-2017. For years 2008-2012 and 2013-2017, we opted not to interpolate populations and proportions across years, instead using the values to represent all five years of the ACS estimate range, because they represent the Census Bureau's best estimate for the entire period.

Data users will note that due to this change in methodology, two NaNDA datasets contain measures for 2008, 2009, and 2010: the dataset described in this codebook (Socioeconomic Status and Demographic Characteristics of Census Tracts, United States, 2008-2017) and the previously released version (Socioeconomic Status and Demographic Characteristics of Census Tracts, United States, 2000-2010). Measures for 2008 and 2009 differ between the two datasets, but measures for 2010 are the same across both datasets. It is recommended to take measures from just one dataset whenever possible. For example, a user needing SES measures for 2008-2013 should use only the 2008-2017 dataset (Socioeconomic Status and Demographic Characteristics of Census Tracts, United States, 2008-2017). A user needing measures for 2005-2010 should use only the 2000-2010 dataset (Socioeconomic Status and Demographic Characteristics of Census Tracts, United States, 2000-2010).

To derive measures for a period that spans both datasets (e.g. 2005-2015), it is recommended that users take measures for the years before 2010 from the 2000-2010 dataset, and measures

for years after 2010 from the 2008-2017 dataset. Measures for 2010 are the same and can be taken from either.

Variables

Variable	Type	Obs	Unique	Mean	Min	Max	Label
tract_fips10	string	73081	73081	.	.	.	Census Tract FIPS code, 2010
aland10	float	73056	72559	48.34518	0	85425.73	Census tract land area, square miles
totpop08_12	float	72870	9264	4241.096	0	39143	Total population, ACS 2008-2012
totpop13_17	float	73056	9871	4393.95	0	65528	Total population, ACS 2013-2017
popden08_12	float	72718	71916	5234.301	0	518000	Persons per square mile, ACS 2008-2012
popden13_17	float	72714	72352	5428.54	0	306466.8	Persons per square mile, ACS 2013-2017, ACS 2013-2017
phspanic08_12	float	72406	66615	0.152278	0	1	Proportion of people of Hispanic origin, ACS 2008-2012
phspanic13_17	float	72418	67837	0.162668	0	1	Proportion of people of Hispanic origin, ACS 2013-2017
pnhwhite08_12	float	72406	70820	0.639203	0	1	Proportion of people Non-Hispanic White, ACS 2008-2012
pnhwhite13_17	float	72418	71073	0.620491	0	1	Proportion of people non-Hispanic White, ACS 2013-2017
pnhblack08_12	float	72406	61907	0.134074	0	1	Proportion of people Non-Hispanic Black, ACS 2008-2012
pnhblack13_17	float	72418	63280	0.134508	0	1	Proportion of people non-Hispanic Black, ACS 2013-2017
pfborn08_12	float	72406	67823	0.121677	0	1	Proportion of people who are foreign born, ACS 2008-2012
pfborn13_17	float	72418	68280	0.125245	0	1	Proportion of people who are foreign born, ACS 2013-2017
ped1_08_12	float	72392	67953	0.149967	0	1	Proportion with less than High School Diploma, ACS 2008-2012
ped1_13_17	float	72410	67937	0.133397	0	1	Proportion with Less than High School Diploma, ACS 2013-2017
ped2_08_12	float	72392	69092	0.575421	0	1	Proportion with High School Diploma and/or Some College, ACS 2008-2012
ped2_13_17	float	72410	69286	0.570451	0	1	Proportion with High School Diploma and/or Some College, ACS 2013-2017
ped3_08_12	float	72392	69409	0.274612	0	1	Proportion with Bachelor's Degree or Higher, ACS 2008-2012
ped3_13_17	float	72410	69798	0.296153	0	1	Proportion with Bachelor's Degree or Higher, ACS 2013-2017
pin1b_08_12	float	72155	48939	0.089469	0	1	Proportion of families with Income less than 15K, ACS 2008-2012
pin1b_13_17	float	72189	48272	0.080896	0	1	Proportion of families with Income less than 15K, ACS 2013-2017
pin2b_08_12	float	72155	54268	0.135782	0	1	Proportion of families with Income 15-30K, ACS 2008-2012

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Variable	Type	Obs	Unique	Mean	Min	Max	Label
pin2b_13_17	float	72189	53499	0.121453	0	1	Proportion of families with Income 15-30K, ACS 2013-2017
pin3b_08_12	float	72155	54697	0.182947	0	1	Proportion of families with Income 30-50K, ACS 2008-2012
pin3b_13_17	float	72189	54608	0.171345	0	1	Proportion of families with Income 30-50K, ACS 2013-2017
pin4b_08_12	float	72155	57178	0.328898	0	1	Proportion of families with Income 50-100K, ACS 2008-2012
pin4b_13_17	float	72189	56626	0.320341	0	1	Proportion of families with Income 50-100K, ACS 2013-2017
pin5b_08_12	float	72155	59416	0.262904	0	1	Proportion of families with Income greater than 100K, ACS 2008-2012
pin5b_13_17	float	72189	60854	0.305966	0	1	Proportion of families with Income greater than 100K, ACS 2013-2017
pincgt75k08_12	float	72155	62123	0.40077	0	1	Proportion of families with Income greater than 75K, ACS 2008-2012
pincgt75k13_17	float	72189	62376	0.44304	0	1	Proportion of families with Income greater than 75K, ACS 2013-2017
pnvmar08_12	float	72406	69701	0.322657	0	1	Proportion of People 15+ Never Married, ACS 2008-2012
pnvmar13_17	float	72418	69932	0.335416	0	1	Proportion of People 15+ Never Married, ACS 2013-2017
p18yr_08_12	float	72406	69412	0.232313	0	0.658699	Proportion of population under 18 years of age, ACS 2008-2012
p18yr_13_17	float	72418	69289	0.222416	0	0.88172	Proportion of population under 18 years of age, ACS 2013-2017
p18_2908_12	float	72406	69297	0.168477	0	1	Proportion of population 18-29 years of age, ACS 2008-2012
p18_2913_17	float	72418	69162	0.166785	0	1	Proportion of population 18-29 years of age, ACS 2013-2017
p30_3908_12	float	72406	68030	0.127872	0	1	Proportion of population 30-39 years of age, ACS 2008-2012
p30_3913_17	float	72418	68262	0.12909	0	1	Proportion of population 30-39 years of age, ACS 2013-2017
p40_4908_12	float	72406	67834	0.139447	0	1	Proportion of population 40-49 years of age, ACS 2008-2012
p40_4913_17	float	72418	67648	0.125988	0	1	Proportion of population 40-49 years of age, ACS 2013-2017
p50_6908_12	float	72406	69481	0.236133	0	1	Proportion of population 50-69 years of age, ACS 2008-2012
p50_6913_17	float	72418	69651	0.251401	0	1	Proportion of population 50-69 years of age, ACS 2013-2017
pge7008_12	float	72406	68391	0.095758	0	1	Proportion of population 70+ years of age, ACS 2008-2012
pge7013_17	float	72418	68706	0.104321	0	1	Proportion of population 70+ yrs, ACS 2013-2017
punemp08_12	float	72406	65044	0.061176	0	1	Proportion 16+ civ labor force unemployed, ACS 2008-2012
punemp13_17	float	72418	63825	0.042861	0	0.570588	Proportion 16+ civ labor force unemployed, ACS 2013-2017
pprof08_12	float	72280	66620	0.342191	0	1	Proportion emplyd civ 16+ mngmnt/prof occup, ACS 2008-2012

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Variable	Type	Obs	Unique	Mean	Min	Max	Label
pprof13_17	float	72304	67037	0.356249	0	1	Proportion emplyd civ 16+ mgmt/bus/sci/arts, ACS 2013-2017
ppov08_12	float	72264	69919	0.15957	0	1	Proportion people w/ income past 12 months below poverty level, ACS 2008-2012
ppov13_17	float	72274	70031	0.157494	0	1	Proportion people w/ income past 12 months below poverty level, ACS 2013-2017
ppubas08_12	float	72216	61425	0.132133	0	1	Proportion of households with public assistance income, ACS 2008-2012
ppubas13_17	float	72240	62588	0.145113	0	1	Proportion of households with public assistance income, ACS 2013-2017
pfhfam08_12	float	72155	52970	0.11936	0	1	Proportion female-headed families w/ kids, ACS 2008-2012
pfhfam13_17	float	72189	52664	0.112289	0	1	Proportion female-headed families w/ kids, ACS 2013-2017
pownoc08_12	float	72216	66366	0.647829	0	1	Proportion owner occupied hus, ACS 2008-2012
pownoc13_17	float	72240	66867	0.632031	0	1	Proportion owner occupied hus, ACS 2013-2017
disadvantage08_12	float	72406	72244	0.121343	0	0.833333	mean of pnhblack pfhfam ppubas ppov punemp, ACS 2008-2012
disadvantage13_17	float	72418	72289	0.118521	0	0.761872	mean of pnhblack pfhfam ppubas ppov punemp, ACS 2013-2017
disadvantage2_08_12	float	72406	72114	0.117977	0	1	mean of pfhfam ppubas ppov punemp, ACS 2008-2012
disadvantage2_13_17	float	72418	72145	0.114336	0	0.710939	mean of pfhfam ppubas ppov punemp, ACS 2013-2017
affluence08_12	float	72402	72166	0.338786	0	1	mean of pincgt75k ped3 pprof, ACS 2008-2012
affluence13_17	float	72418	72226	0.36473	0	1	mean of pincgt75k ped3 pprof, ACS 2013-2017
ethnicimmigrant08_12	float	72406	70345	0.136977	0	0.95	mean of phispanic pfborn, ACS 2008-2012
ethnicimmigrant13_17	float	72418	70316	0.143956	0	1	mean of phispanic pfborn, ACS 2013-2017

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