

# National Neighborhood Data Archive (NaNDA): Civic, Social, and Religious Organizations by Census Tract and ZCTA, United States, 1990-2021



## Overview and Data Dictionary

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## Dataset Overview

### Description

This dataset contains measures of the number and density of select types of civic, social, and religious organizations per United States Census Tract or ZIP Code Tabulation Area (ZCTA) from 1990 through 2021. The dataset includes four separate files for four different geographic areas (GIS shapefiles from the United States Census Bureau). The four geographies include:

- Census Tract 2010
- Census Tract 2020
- ZIP Code Tabulation Area (ZCTA) 2010
- ZIP Code Tabulation Area (ZCTA) 2020

Information about which dataset to use can be found in the Usage Notes section of this document.

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## Data Sources

Business establishment data were taken from the National Establishment Time Series (NETS) database produced by Walls and Associates (2022) using archival establishment data from Dun & Bradstreet. NETS is a time-series database based on snapshots taken every January of the full Duns Marketing Information (DMI) file of over 80 million private for-profit and nonprofit establishments and government agencies. These snapshots used the DMI file to determine which establishments were active in January of each year from 1990 to 2021. This longitudinal data source classifies establishments by Standard Industrial Classification (SIC) code and provides detailed business microdata and address history (D. Walls & K. Perez, personal communication, October 4, 2022).

We determined each establishment's Census Tract or ZCTA for each year by mapping its latitude and longitude to the 2010 and 2020 TIGER/Line shapefiles from the US Census Bureau (United States Census Bureau, 2021a, 2021b). There are four versions of this dataset: Census Tract 2010, Census Tract 2020, ZCTA 2010, and ZCTA 2020. Each dataset is standardized to a single US Census geography; as a result, the variables are commensurable across all of the years in each dataset.

The population denominator for the per capita density variables came from the American Community Survey (ACS) or Decennial Census (United States Census Bureau, 2015a, 2015b, 2015c, 2016, 2017, 2020, 2023a). ACS data were used for available years; Decennial Census data were used when ACS data were not available (1990-2005, 2020-2021). A detailed description of the denominator used in the per capita density variables can be found in the [Appendix](#) of this document.

Data for the land area denominator came from the land area of the Census Tract or ZCTA from the 2010 or 2020 TIGER/Line shapefiles (United States Census Bureau, 2021a, 2021b). The IPUMS NHGIS crosswalks (Manson et al., 2023) were used to normalize data longitudinally.

## Coverage

Each file contains one observation per Census tract or ZCTA in the fifty United States including Alaska and Hawaii but excluding US island territories.

## Methodology

### NETS Data Cleaning

Due to known limitations and inaccuracies in the NETS source data (Finlay et al., 2019; Hirsch et al., 2021; Kaufman et al., 2015), we followed a rigorous data cleaning protocol described in brief below (a more detailed, reproducible description of our NETS cleaning methodology is forthcoming).

Following Kaufman et al. (2015), we:

1. re-geocoded the NETS business addresses to increase geolocation accuracy,
2. assigned one SIC code to a given business throughout its existence in NETS to resolve inconsistencies in coding, and
3. collapsed multiple records for businesses in the same researcher-defined category, in the same year, and at the same location into a single record.

Additionally, we corrected errors due to businesses located at residential addresses by linking all business establishments to Zillow's ZTRAX data ("Zillow's Transaction and Assessment Database (ZTRAX)," 2023) to identify and remove businesses located in a residential parcel.

### Variable Creation

After the NETS data were cleaned, we used SIC codes to identify civic, social, and religious organizations annually from 1990-2021 (*NAICS & SIC Identification Tools*, 2023). SIC codes were used to classify businesses by industry until they were replaced by NAICS codes in 1997. Using SIC codes allows for historical, longitudinal analysis with NETS data since 1990 (Hirsch et al., 2021).

We drew on our previously published NaNDA datasets to identify and categorize SIC codes for business types. In general, we focused on public-facing businesses. We also referred to the categories of SIC codes in Kaufman et al. (2015) where appropriate. Our research team identified the following SIC codes representing civic, social, and religious organizations and grouped them into the categories listed below:

#### **NaNDA category: Civic and social associations**

(variables ending in "\_civsoc")

[Includes SIC: 86410000, 86410100]

Membership organizations engaged in civic or social activities. Examples include alumni associations, booster clubs, civic associations, community membership clubs, social clubs, singing societies, parent-teacher associations, and homeowner and tenant associations (except property management).

**NaNDA category: Youth organizations**

(variables ending in "\_youthorgs")

*[Includes SIC: 86410300, 86410301, 86410302]*

Membership organizations engaged in youth focused civic or social activities. Examples include youth organizations, boy scout organizations, and girl scout organizations.

**NaNDA category: Veterans' organizations**

(variables ending in "\_veteransorgs")

*[SIC: 86419907]*

Membership organizations for veterans.

**NaNDA category: Total civic and social associations**

(variables ending in "\_totcivsoc")

*[SIC: 86410000, 86410100, 86410300, 86410301, 86410302, 86419907]*

This is a composite variable that combines all of the above categories. Membership organizations engaged in civic or social activities. Examples include alumni associations, booster clubs, civic associations, community membership clubs, social clubs, singing societies, parent-teacher associations, homeowner and tenant associations (except property management), youth organizations, boy scout organizations, girl scout organizations, and veterans' organizations.

**NaNDA category: Religious organizations**

(variables ending in "\_religiousorgs")

*[SIC: 86610000, 86610100, 86610101, 86610102, 86610103, 86610104, 86610105, 86610106, 86610107, 86610108, 86610109, 86610110, 86610111, 86610112, 86610113, 86610114, 86610115, 86610116, 86610117, 86610118, 86610119, 86610120, 86610121, 86610122, 86610123, 86610124, 86610125, 86610126, 86610127, 86610128, 86610129, 86610130, 86610131, 86610200, 86610201, 86610202, 86610203]*

Establishments of religious organizations operated for worship, religious training or study, government or administration of an organized religion, or promotion of religious activities.

For each group of SIC codes we identified, we queried the NETS database for all establishments that were open at some time between 1990 and 2020 and their location during each year.

For each NaNDA category, we created four variables:

1. Count of the total number of establishments within a category in the tract or ZCTA (variables beginning with "count\_").
2. Per capita density of the number of establishments within a category in the tract or ZCTA per 1000 population (variables beginning with "den\_"). For tracts and ZCTAs with zero population in a given year, per capita density was set to missing.
3. Area density of the number of establishments within a category in the tract or ZCTA per square mile (variables beginning with "aden\_").
4. Count of the total number of people employed in each category in the tract or ZCTA (variables beginning with "emps\_").

## Usage Notes

Choice of dataset (Census Tract 2010, Census Tract 2020, ZCTA 2010, or ZCTA 2020) depends on the geographic scale of interest and on the Census geography used in any linked dataset. For example, users should use the 2020 Census Tract data if they are linking NaNDA data with survey data that has geographic identifiers at the Census Tract based on 2020 geography. For survey data with geographic identifiers based on 2010 geography, users should use the 2010 Census Tract or ZCTA dataset.

## Zip Codes and ZIP Code Tabulation Areas

Users should be aware that ZCTAs are not equivalent to ZIP codes. ZIP codes are linear mail delivery routes created by the US Postal Service. ZIP code tabulation areas are spatial features consisting of Census blocks grouped by the predominant ZIP code found on the block (United States Census Bureau, 2023b).

In some cases, a location's address is not the same as its ZCTA. For example, some ZIP codes represent single-point addresses such as large post offices or office buildings. Also, the ZIP code for an address may not match its ZCTA if the ZIP code is not the most common ZIP code on the block. See the [Census Bureau's ZCTA overview](#) (United States Census Bureau, 2022) for more information on how ZCTA boundaries are calculated.

Users wanting to combine this dataset with ZIP code geocoded data must use a ZIP code to ZCTA crosswalk. Such a crosswalk is available on the [UDS Mapper website](#) (John Snow, Inc, 2023). Sample code for merging the UDS Mapper crosswalk with NaNDA datasets is available in the ICPSR Linkage Library (Chenoweth & Khan, 2021).

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## Census Tract 2010 Variables

Variable	Type	Observations	Unique	Mean	Min	Max	Label
tract_fips10	str11	2369088	74034	.	.	.	Census tract FIPS code, 2010
year	float	2369088	32	2005.5	1990	2021	Year
totpop	float	2339313	595279	4050.918	0	75506.54	Total population
aland10	float	2337792	72559	48.34518	0	85425.73	Census land area, square miles
count_civsoc	float	2369088	103	0.611676	0	157	Total counts: Civic and Social Associations
emps_civsoc	float	2369088	2183	3.728469	0	4014	Total employees: Civic and Social Associations
den_civsoc	float	2327632	212634	0.26464	0	4000	Civic and Social Associations per 1000 people
aden_civsoc	float	2327648	113135	1.057518	0	598.0959	Civic and Social Associations per sq mile
count_youthorgs	float	2369088	12	0.097233	0	11	Total counts: Youth Organizations
emps_youthorgs	float	2369088	755	1.557704	0	4000	Total employees: Youth Organizations
den_youthorgs	float	2327632	60349	0.040865	0	1000	Youth Organizations per 1000 people
aden_youthorgs	float	2327648	18999	0.149352	0	73.68764	Youth Organizations per sq mile
count_veteransorgs	float	2369088	9	0.131023	0	8	Total counts: Veterans' Organizations
emps_veteransorgs	float	2369088	777	0.987523	0	2000	Total employees: Veterans' Organizations
den_veteransorgs	float	2327632	90061	0.04829	0	1000	Veterans' Organizations per 1000 people
aden_veteransorgs	float	2327648	20575	0.116527	0	67.46342	Veterans' Organizations per sq mile
count_religiousorgs	float	2369088	97	4.742327	0	125	Total counts: Religious Organizations
emps_religiousorgs	float	2369088	3568	20.48832	0	5692	Total employees: Religious Organizations
den_religiousorgs	float	2327632	725688	1.497373	0	7000	Religious Organizations per 1000 people
aden_religiousorgs	float	2327648	360353	5.617345	0	1670.555	Religious Organizations per sq mile

## Census Tract 2020 Variables

Variable	Type	Observations	Unique	Mean	Min	Max	Label
tract_fips20	str11	2736896	85528	.	.	.	Census Tract FIPS code, 2020
year	float	2736896	32	2005.5	1990	2021	Year
totpop	float	2707830	1012868	3501.883	0	39017	Total population
aland20	float	2732640	84776	41.41299	0	85554.74	Census land area, square miles
count_civ_soc	float	2736896	78	0.350807	0	109	Total counts: Civic and Social Associations
emps_civ_soc	float	2736896	1570	2.014057	0	4000	Total employees: Civic and Social Associations
den_civ_soc	float	2686713	212374	0.213492	0	5846.92	Civic and Social Associations per 1000 people
aden_civ_soc	float	2721088	85665	0.792053	0	546.5668	Civic and Social Associations per sq mile
count_civic	float	2736896	20	0.085656	0	19	Total counts: Civic associations
emps_civic	float	2736896	439	0.567699	0	3000	Total employees: Civic associations
popden_civic	float	2686713	85989	0.038831	0	974.4868	Civic associations per 1000 people
aden_civic	float	2721088	20415	0.12756	0	305.5529	Civic associations per sq mile
count_youthorgs	float	2736896	12	0.084166	0	11	Total counts: Youth Organizations
emps_youthorgs	float	2736896	751	1.348366	0	4000	Total employees: Youth Organizations
den_youthorgs	float	2686713	74916	0.042929	0	1000	Youth Organizations per 1000 people
aden_youthorgs	float	2721088	19151	0.144236	0	159.0218	Youth Organizations per sq mile
count_religiousorgs	float	2736896	97	4.105011	0	125	Total counts: Religious Organizations
emps_religiousorgs	float	2736896	3438	17.73492	0	5692	Total employees: Religious Organizations
den_religiousorgs	float	2686713	1080326	1.536374	0	7000	Religious Organizations per 1000 people
aden_religiousorgs	float	2721088	377933	5.24165	0	1676.142	Religious Organizations per sq mile

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## ZCTA 2010 Variables

Variable	Type	Observations	Unique	Mean	Min	Max	Label
zcta10	str5	1060608	33144	.	.	.	ZIP Code Tabulation Area, 2010
year	float	1060608	32	2005.5	1990	2021	Year
totpop	float	1055648	866462	8926.375	0	137755.5	Total population
aland10	float	1055648	32975	86.89605	0.001967	13467.65	ZCTA land area, square miles
count_civsoc	float	1060608	115	1.557256	0	140	Total counts: Civic and Social Associations
emps_civsoc	float	1060608	34207	9.733125	0	4112.904	Total employees: Civic and Social Associations
den_civsoc	float	1051936	403798	0.558542	0	15151.52	Civic and Social Associations per 1000 people
aden_civsoc	float	1055648	91423	0.699204	0	1956.776	Civic and Social Associations per sq mile
count_youthorgs	float	1060608	13	0.226928	0	12	Total counts: Youth Organizations
emps_youthorgs	float	1060608	3279	3.653267	0	4011	Total employees: Youth Organizations
den_youthorgs	float	1051936	148536	0.050722	0	1000	Youth Organizations per 1000 people
aden_youthorgs	float	1055648	17207	0.074703	0	782.7102	Youth Organizations per sq mile
count_veteransorgs	float	1060608	12	0.342572	0	11	Total counts: Veterans' Organizations
emps_veteransorgs	float	1060608	3296	2.603266	0	2006	Total employees: Veterans' Organizations
den_veteransorgs	float	1051936	237825	0.097962	0	1000	Veterans' Organizations per 1000 people
aden_veteransorgs	float	1055648	24375	0.063566	0	283.2136	Veterans' Organizations per sq mile
count_religiousorgs	float	1060608	283	11.18789	0	617	Total counts: Religious Organizations
emps_religiousorgs	float	1060608	193594	48.49895	0	5778	Total employees: Religious Organizations
den_religiousorgs	float	1051936	769864	2.063736	0	20000	Religious Organizations per 1000 people
aden_religiousorgs	float	1055648	222523	1.745152	0	5870.327	Religious Organizations per sq mile



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## ZCTA 2020 Variables

Variable	Type	Observations	Unique	Mean	Min	Max	Label
zcta20	str5	1081312	33791	.	.	.	ZIP Code Tabulation Area, 2020
year	float	1081312	32	2005.5	1990	2021	Year
totpop	float	1080768	920664	8745.349	0	135256	Total population
aland20	float	1081312	33779	83.58216	0.001371	13678.38	ZCTA land area, square miles
count_civsoc	float	1081312	117	1.527973	0	142	Total counts: Civic and Social Associations
emps_civsoc	float	1081312	34079	9.550398	0	4181	Total employees: Civic and Social Associations
den_civsoc	float	1072868	406738	0.714827	0	10000	Civic and Social Associations per 1000 people
aden_civsoc	float	1081312	91798	0.720675	0	1956.776	Civic and Social Associations per sq mile
count_youthorgs	float	1081312	13	0.222614	0	12	Total counts: Youth Organizations
emps_youthorgs	float	1081312	3274	3.583527	0	4011	Total employees: Youth Organizations
den_youthorgs	float	1072868	149196	0.054915	0	1000	Youth Organizations per 1000 people
aden_youthorgs	float	1081312	17233	0.071088	0	782.7102	Youth Organizations per sq mile
count_veteransorgs	float	1081312	12	0.336152	0	11	Total counts: Veterans' Organizations
emps_veteransorgs	float	1081312	3259	2.554446	0	2006	Total employees: Veterans' Organizations
den_veteransorgs	float	1072868	238593	0.133167	0	3000	Veterans' Organizations per 1000 people
aden_veteransorgs	float	1081312	24426	0.068161	0	283.2136	Veterans' Organizations per sq mile
count_religiousorgs	float	1081312	281	10.97522	0	621	Total counts: Religious Organizations
emps_religiousorgs	float	1081312	193331	47.57688	0	5779	Total employees: Religious Organizations
den_religiousorgs	float	1072868	792449	2.272092	0	16000	Religious Organizations per 1000 people
aden_religiousorgs	float	1081312	223906	1.797859	0	5870.327	Religious Organizations per sq mile

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## Appendix

### Population Denominators for the Per Capita Density Variables

<b>Years</b>	<b>Data Sources</b>	<b>Interpolated by year</b>
<b>1990-2000</b>	<ul style="list-style-type: none"> <li>• 1990 Decennial Census</li> <li>• 2000 Decennial Census</li> </ul>	Yes
<b>2001-2004</b>	<ul style="list-style-type: none"> <li>• 2000 Decennial Census</li> <li>• 2005-2009 American Community Survey</li> </ul>	Yes
<b>2005-2009</b>	<ul style="list-style-type: none"> <li>• 2005-2009 American Community Survey</li> </ul>	No
<b>2010-2014</b>	<ul style="list-style-type: none"> <li>• 2010-2014 American Community Survey</li> </ul>	No
<b>2015-2019</b>	<ul style="list-style-type: none"> <li>• 2015-2019 American Community Survey</li> </ul>	No
<b>2020-2021</b>	<ul style="list-style-type: none"> <li>• 2020 Decennial Census</li> </ul>	No

### Land Area Denominators

All data were downloaded, normalized, and standardized to four geographic levels using IPUMS NHGIS tools (Manson et al., 2023).

#### **Census Tract 2010**

Total population data for 1990-2009 and 2020-2021 census tracts were normalized to 2010 geography using IPUMS NHGIS crosswalks. (Data for 2010-2019 were collected using 2010 geography and therefore were not normalized.)

#### **Census Tract 2020**

Total population data for 1990-2009 census tracts were normalized to 2010 geography and again normalized to 2020 geography using IPUMS NHGIS crosswalks. Data for 2010-2019 were normalized to 2020 geography using IPUMS NHGIS crosswalks. (Data for 2020-2021 were collected using 2020 geography and therefore were not normalized.)

### **ZCTA 2010**

Total population data at the ZCTA geographic level that had been standardized to 2010 geography from the 1990, 2000, 2010, and 2020 censuses were downloaded from the time series tables feature on the IPUMS NHGIS Data Finder.

### **ZCTA 2020**

Total population data at the Census Block level were downloaded from the IPUMS NHGIS Data Finder for the 1990, 2000, 2010, and 2020 censuses. The 1990, 2000, and 2020 censuses were normalized to 2010 Census Blocks. (Data for the 2010 Census were collected using 2010 geography and therefore were not normalized.) The data were then normalized to 2020 Census Blocks using IPUMS NHGIS crosswalks, which were finally aggregated to the geographic boundaries for ZCTA 2020.