

# National Neighborhood Data Archive (NaNDA): Arts, Entertainment, and Leisure Establishments 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 arts, entertainment, and leisure establishments 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 and the 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 arts, entertainment, and leisure establishments 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 arts, entertainment and leisure establishments and grouped them into the categories listed below:

#### **NaNDA category: Museums**

(variables ending in "\_museums")

[Includes SIC: 84120000 84120100 84120101 84120102 84129901 84129902 84129903]

Establishments primarily engaged in the preservation and exhibition of objects of historical, cultural, and/or educational value, including museums, historical societies, and planetariums, as well as non-retail art galleries or art institutes.

**NaNDA category: Theatrical Production Establishments**

(variables ending in "\_theatricalproductions")

*[Includes SIC: 79220200 79220201 79220202 79220203 79220300 79220301 79220302 79220303 79220304 79220305 79220306 79220307]*

Establishments primarily engaged in providing live theatrical presentations, such as performing arts centers, community theaters, and theater companies.

**NaNDA category: Amusement Parks**

(variables ending in "\_amusementparks")

*[Includes SIC: 79991500 79991501 79991502 79991503 79991504 79991505 79991506 79991507 79991508 79991509 79991510 79991511 79991512 79991513 79991514 79991515 79991516]*

Establishments primarily engaged in the operation of amusement and tourist attractions, including amusement parks, go-cart raceways, and waterparks.

**NaNDA category: Movie Theaters**

(variables ending in "\_movietheaters")

*[Includes SIC: 78320000 78330000]*

Commercially operated theaters engaged in the exhibition of motion pictures. Includes drive-in theaters.

**NaNDA category: Zoos, Aquariums, and Gardens**

(variables ending in "\_zoosaquariumsgardens")

*[Includes SIC: 84220000 84220100 84220101 84220102 84220103 84220200 84220201 84220202]*

Establishments primarily engaged in the operation of botanical or zoological gardens and exhibits, such as aquariums, zoos, and arboreta.

**NaNDA category: Bingo Halls, Card Games, and Gambling Facilities**

(variables ending in "\_poolhallsbowlingalleys")

*[Includes SIC: 79330000 79339901 79339902 79339903 79990400 79990401 79990402 79990403]*

Establishments primarily engaged in operating gambling facilities (except casino hotels) and card and game services, such as bingo halls and poker rooms.

**NaNDA category: Pool Halls and Bowling Alleys**

(variables ending in "\_")

*[Includes SIC: 79330000 79339901 79339902 79339903 79990400 79990401 79990402 79990403]*

Establishments known to the public as bowling centers or lanes, billiard parlors or pool parlors. Such establishments frequently sell meals and refreshments.

**NaNDA category: All Arts and Entertainment Venues**

(variables ending in "\_totartsentertainment")

*[Includes SIC: 84120000 84120100 84120101 84120102 84129901 84129902 84129903 79220200 79220201 79220202 79220203 79220300 79220301 79220302 79220303 79220304 79220305 79220306 79220307 79991500 79991501 79991502 79991503 79991504 79991505 79991506 79991507 79991508 79991509 79991510 79991511 79991512 79991513 79991514 79991515 79991516 78320000 78330000 78320000 78330000 84220000 84220100 84220101 84220102 84220103 84220200 84220201 84220202 79990800 79990801 79990802 79990803 79990804 79991302 79330000 79339901 79339902 79339903 79990400 79990401 79990402 79990403]*

All arts and entertainment venues (excluding hotels and casino hotels).

**NaNDA category: Hotels**

(variables ending in "\_hotels")

*[Includes SIC: 70110000 70110100 70110101 70110200 70110201 70110202 70110400 70110401 70110402 70119901 70110300 70110302 70110303 70110304 70110305 70110306 70110307]*

Includes hotels, motels, inns, and vacation lodges, primarily engaged in providing lodging, or lodging and meals, for the general public. Also includes bed and breakfast inns and hostels. Excludes casino hotels.

**NaNDA category: Casino Hotels**

(variables ending in "\_casinohotels")

*[Includes SIC: 70110301]*

Establishments primarily engaged in providing short-term lodging in hotel facilities with a casino on the premises that offers table wagering games along with other gambling activities, such as slot machines.

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 2021 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).

## Census Tract 2010 Variables

Variable	Type	Obs	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_museums	float	2369088	70	0.2544971	0	125	Total counts: Museums and Art Museums
emps_museums	float	2369088	1224	1.636008	0	3519	Total employees: Museums and Art Museums
den_museums	float	2327632	120237	0.138252	0	2500	Museums and Art Museums per 1000 people
aden_museums	float	2327648	40777	0.4458957	0	520.639	Museums and Art Museums per sq mile
count_theatricalproductions	float	2369088	21	0.0480911	0	23	Total counts: Theatrical Productions
emps_theatricalproductions	float	2369088	515	0.4431954	0	1155	Total employees: Theatrical Productions
den_theatricalproductions	float	2327632	34286	0.0325079	0	1000	Theatrical Productions per 1000 people
aden_theatricalproductions	float	2327648	9833	0.1548326	0	334.3589	Theatrical Productions per sq mile
count_amusementparks	float	2369088	19	0.0507516	0	19	Total counts: Amusement Parks
emps_amusementparks	float	2369088	417	0.5676154	0	4000	Total employees: Amusement Parks
den_amusementparks	float	2327632	47896	0.0433844	0	2000	Amusement Parks per 1000 people
aden_amusementparks	float	2327648	11243	0.0424864	0	53.97795	Amusement Parks per sq mile
count_movietheaters	float	2369088	10	0.0690097	0	9	Total counts: Movie Theaters
emps_movietheaters	float	2369088	672	1.055649	0	3400	Total employees: Movie Theaters
den_movietheaters	float	2327632	56109	0.0323151	0	1000	Movie Theaters per 1000 people
aden_movietheaters	float	2327648	11612	0.098211	0	116.672	Movie Theaters per sq mile
count_zoosaquariumsgardens	float	2369088	6	0.0127087	0	5	Total counts: Zoos, Aquariums, and Gardens
emps_zoosaquariumsgardens	float	2369088	285	0.2073906	0	805	Total employees: Zoos, Aquariums, and Gardens
den_zoosaquariumsgardens	float	2327632	11602	0.0149071	0	769.2308	Zoos, Aquariums, and Gardens per 1000 people
aden_zoosaquariumsgardens	float	2327648	3173	0.0160064	0	50.36732	Zoos, Aquariums, and Gardens per sq mile
count_bingocardsgambling	float	2369088	17	0.0209372	0	16	Total counts: Bingo Halls, Card Games, and Gambling Facilities
emps_bingocardsgambling	float	2369088	690	1.165742	0	8386.5	Total employees: Bingo Halls, Card Games, and Gambling Facilities
den_bingocardsgambling	float	2327632	21025	0.0089399	0	431.2867	Bingo Halls, Card Games, and Gambling Facilities per 1000 people

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Variable	Type	Obs	Unique	Mean	Min	Max	Label
aden_bingocardsgambling	float	2327648	4553	0.0208283	0	35.20632	Bingo Halls, Card Games, and Gambling Facilities per sq mile
count_poolhallsbowlingalleys	float	2369088	9	0.1045322	0	8	Total counts: Pool Halls and Bowling Alleys
emps_poolhallsbowlingalleys	float	2369088	382	1.180868	0	7629	Total employees: Pool Halls and Bowling Alleys
den_poolhallsbowlingalleys	float	2327632	86990	0.045952	0	1000	Pool Halls and Bowling Alleys per 1000 people
aden_poolhallsbowlingalleys	float	2327648	16619	0.1056124	0	85.43586	Pool Halls and Bowling Alleys per sq mile
count_totartsentertainment	float	2369088	75	0.6295372	0	130	Total counts: All Arts and Entertainment Venues
emps_totartsentertainment	float	2369088	2572	7.312117	0	8750.5	Total employees: All Arts and Entertainment Venues
den_totartsentertainment	float	2327632	242619	0.3485734	0	4000	All Arts and Entertainment Venues per 1000 people
aden_totartsentertainment	float	2327648	85003	0.9820838	0	590.0575	All Arts and Entertainment Venues per sq mile
count_hotels	float	2369088	134	1.13437	0	159	Total counts: Hotels
emps_hotels	float	2369088	10012	22.24949	0	14349	Total employees: Hotels
den_hotels	float	2327632	309134	0.6024082	0	6764.464	Hotels per 1000 people
aden_hotels	float	2327648	117239	1.110853	0	1090.251	Hotels per sq mile
count_casinohotels	float	2369088	28	0.012864	0	32	Total counts: Casino Hotels
emps_casinohotels	float	2369088	1449	2.148596	0	14796.99	Total employees: Casino Hotels
den_casinohotels	float	2327632	8902	0.0063497	0	1000	Casino Hotels per 1000 people
aden_casinohotels	float	2327648	2255	0.0100339	0	66.40314	Casino Hotels per sq mile

## Census Tract 2020 Variables

Variable	Type	Obs	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_museums	float	2736896	73	0.2202955	0	98	Total counts: Museums and Art Museums
emps_museums	float	2736896	1214	1.416147	0	3519	Total employees: Museums and Art Museums
den_museums	float	2686713	156430	0.1610926	0	2740.187	Museums and Art Museums per 1000 people
aden_museums	float	2721088	41506	0.4399163	0	648.5443	Museums and Art Museums per sq mile
count_theatricalproductions	float	2736896	17	0.0416282	0	18	Total counts: Theatrical Productions



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Variable	Type	Obs	Unique	Mean	Min	Max	Label
emps_theatricalproductions	float	2736896	502	0.383635	0	1155	Total employees: Theatrical Productions
den_theatricalproductions	float	2686713	39748	0.0280868	0	1000	Theatrical Productions per 1000 people
aden_theatricalproductions	float	2721088	9947	0.1541553	0	407.2034	Theatrical Productions per sq mile
count_amusementparks	float	2736896	18	0.0439312	0	19	Total counts: Amusement Parks
emps_amusementparks	float	2736896	401	0.4913342	0	4000	Total employees: Amusement Parks
den_amusementparks	float	2686713	55174	0.0481129	0	2000	Amusement Parks per 1000 people
aden_amusementparks	float	2721088	11371	0.0421566	0	61.11057	Amusement Parks per sq mile
count_movietheaters	float	2736896	10	0.0597356	0	9	Total counts: Movie Theaters
emps_movietheaters	float	2736896	650	0.9137815	0	3400	Total employees: Movie Theaters
den_movietheaters	float	2686713	67139	0.0311586	0	1050.853	Movie Theaters per 1000 people
aden_movietheaters	float	2721088	11708	0.1001103	0	154.4203	Movie Theaters per sq mile
count_zoosaquariumsgardens	float	2736896	6	0.0110008	0	5	Total counts: Zoos, Aquariums, and Gardens
emps_zoosaquariumsgardens	float	2736896	287	0.1795196	0	805	Total employees: Zoos, Aquariums, and Gardens
den_zoosaquariumsgardens	float	2686713	12349	0.017874	0	692.687	Zoos, Aquariums, and Gardens per 1000 people
aden_zoosaquariumsgardens	float	2721088	3189	0.015477	0	50.3634	Zoos, Aquariums, and Gardens per sq mile
count_bingocardsgambling	float	2736896	17	0.0181235	0	16	Total counts: Bingo Halls, Card Games, and Gambling Facilities
emps_bingocardsgambling	float	2736896	683	1.009079	0	8386.5	Total employees: Bingo Halls, Card Games, and Gambling Facilities
den_bingocardsgambling	float	2686713	23163	0.0091773	0	431.2867	Bingo Halls, Card Games, and Gambling Facilities per 1000 people
aden_bingocardsgambling	float	2721088	4576	0.0199341	0	45.12096	Bingo Halls, Card Games, and Gambling Facilities per sq mile
count_poolhallsbowlingalleys	float	2736896	8	0.0904843	0	7	Total counts: Pool Halls and Bowling Alleys
emps_poolhallsbowlingalleys	float	2736896	378	1.022172	0	7629	Total employees: Pool Halls and Bowling Alleys
den_poolhallsbowlingalleys	float	2686713	107073	0.0458984	0	1000	Pool Halls and Bowling Alleys per 1000 people
aden_poolhallsbowlingalleys	float	2721088	16722	0.1002571	0	85.39502	Pool Halls and Bowling Alleys per sq mile
count_totartsentertainment	float	2736896	71	0.5449345	0	100	Total counts: All Arts and Entertainment Venues
emps_totartsentertainment	float	2736896	2497	6.329451	0	8750.5	Total employees: All Arts and Entertainment Venues
den_totartsentertainment	float	2686713	327717	0.3725592	0	4000	All Arts and Entertainment Venues per 1000 people
aden_totartsentertainment	float	2721088	86863	0.9721169	0	661.7799	All Arts and Entertainment Venues per sq mile
count_hotels	float	2736896	125	0.9819233	0	159	Total counts: Hotels
emps_hotels	float	2736896	9731	19.25941	0	14349	Total employees: Hotels

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Variable	Type	Obs	Unique	Mean	Min	Max	Label
den_hotels	float	2686713	424784	0.7434182	0	18000	Hotels per 1000 people
aden_hotels	float	2721088	121307	1.134442	0	1090.192	Hotels per sq mile
count_casinohotels	float	2736896	28	0.0111352	0	32	Total counts: Casino Hotels
emps_casinohotels	float	2736896	1433	1.859849	0	14796.99	Total employees: Casino Hotels
den_casinohotels	float	2686713	9469	0.0076174	0	1000	Casino Hotels per 1000 people
aden_casinohotels	float	2721088	2283	0.0102938	0	66.40314	Casino Hotels per sq mile

## ZCTA 2010 Variables

Variable	Type	Obs	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	0.0019668	13467.65	ZCTA land area, square miles
count_museums	float	1060608	97	0.5949031	0	110	Total counts: Museums and Art Museums
emps_museums	float	1060608	8488	3.925875	0	3788.532	Total employees: Museums and Art Museums
den_museums	float	1051936	262456	0.2565686	0	4000	Museums and Art Museums per 1000 people
aden_museums	float	1055648	35070	0.2380616	0	531.458	Museums and Art Museums per sq mile
count_theatricalproductions	float	1060608	49	0.1111683	0	65	Total counts: Theatrical Productions
emps_theatricalproductions	float	1060608	2008	1.029102	0	1286.246	Total employees: Theatrical Productions
den_theatricalproductions	float	1051936	72504	0.0348156	0	1000	Theatrical Productions per 1000 people
aden_theatricalproductions	float	1055648	8607	0.0684447	0	402.7662	Theatrical Productions per sq mile
count_amusementparks	float	1060608	24	0.1218329	0	23	Total counts: Amusement Parks
emps_amusementparks	float	1060608	2832	1.352509	0	4000	Total employees: Amusement Parks
den_amusementparks	float	1051936	94322	0.046958	0	952.381	Amusement Parks per 1000 people
aden_amusementparks	float	1055648	10752	0.0276822	0	540.7638	Amusement Parks per sq mile
count_movietheaters	float	1060608	20	0.160704	0	19	Total counts: Movie Theaters
emps_movietheaters	float	1060608	2362	2.46153	0	3400	Total employees: Movie Theaters
den_movietheaters	float	1051936	122273	0.0319322	0	714.2857	Movie Theaters per 1000 people
aden_movietheaters	float	1055648	10935	0.0397992	0	208.4833	Movie Theaters per sq mile

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count_zoosaquariumsgardens	float	1060608	11	0.0296717	0	12	Total counts: Zoos, Aquariums, and Gardens
emps_zoosaquariumsgardens	float	1060608	669	0.4971264	0	807	Total employees: Zoos, Aquariums, and Gardens
den_zoosaquariumsgardens	float	1051936	25805	0.0061252	0	891.2656	Zoos, Aquariums, and Gardens per 1000 people
aden_zoosaquariumsgardens	float	1055648	3132	0.0052313	0	36.1897	Zoos, Aquariums, and Gardens per sq mile
count_bingocardsgambling	float	1060608	14	0.0488965	0	13	Total counts: Bingo Halls, Card Games, and Gambling Facilities
emps_bingocardsgambling	float	1060608	1303	2.736645	0	8754.5	Total employees: Bingo Halls, Card Games, and Gambling Facilities
den_bingocardsgambling	float	1051936	40664	0.0064282	0	75.44323	Bingo Halls, Card Games, and Gambling Facilities per 1000 people
aden_bingocardsgambling	float	1055648	4420	0.0068358	0	38.68406	Bingo Halls, Card Games, and Gambling Facilities per sq mile
count_poolhallsbowlingalleys	float	1060608	17	0.2414643	0	20	Total counts: Pool Halls and Bowling Alleys
emps_poolhallsbowlingalleys	float	1060608	2496	2.722405	0	7629	Total employees: Pool Halls and Bowling Alleys
den_poolhallsbowlingalleys	float	1051936	177186	0.0353092	0	1000	Pool Halls and Bowling Alleys per 1000 people
aden_poolhallsbowlingalleys	float	1055648	15437	0.0336673	0	257.1473	Pool Halls and Bowling Alleys per sq mile
count_totartsentertainment	float	1060608	127	1.469345	0	136	Total counts: All Arts and Entertainment Venues
emps_totartsentertainment	float	1060608	31280	17.18672	0	9217	Total employees: All Arts and Entertainment Venues
den_totartsentertainment	float	1051936	399087	0.4500693	0	6000	All Arts and Entertainment Venues per 1000 people
aden_totartsentertainment	float	1055648	66081	0.4595213	0	811.1456	All Arts and Entertainment Venues per sq mile
count_hotels	float	1060608	238	2.644522	0	300	Total counts: Hotels
emps_hotels	float	1060608	56543	51.69806	0	18255.5	Total employees: Hotels
den_hotels	float	1051936	464319	1.00715	0	21000	Hotels per 1000 people
aden_hotels	float	1055648	90615	0.5549144	0	1081.528	Hotels per sq mile
count_casinohotels	float	1060608	39	0.0296622	0	44	Total counts: Casino Hotels
emps_casinohotels	float	1060608	1659	5.202963	0	33346.62	Total employees: Casino Hotels
den_casinohotels	float	1051936	16673	0.0077306	0	510.2041	Casino Hotels per 1000 people
aden_casinohotels	float	1055648	2162	0.0045421	0	210.8939	Casino Hotels per sq mile

## ZCTA 2020 Variables

Variable	Type	Obs	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_museums	float	1081312	97	0.5839184	0	110	Total counts: Museums and Art Museums
emps_museums	float	1081312	8528	3.866915	0	3788.532	Total employees: Museums and Art Museums
den_museums	float	1072868	263392	0.3183336	0	8333.333	Museums and Art Museums per 1000 people
aden_museums	float	1081312	35208	0.2378811	0	421.239	Museums and Art Museums per sq mile
count_theatricalproductions	float	1081312	49	0.1090731	0	66	Total counts: Theatrical Productions
emps_theatricalproductions	float	1081312	2001	1.009565	0	1286.246	Total employees: Theatrical Productions
den_theatricalproductions	float	1072868	72770	0.0491681	0	3435.934	Theatrical Productions per 1000 people
aden_theatricalproductions	float	1081312	8648	0.07083	0	402.7662	Theatrical Productions per sq mile
count_amusementparks	float	1081312	24	0.1195344	0	23	Total counts: Amusement Parks
emps_amusementparks	float	1081312	2813	1.32806	0	4000	Total employees: Amusement Parks
den_amusementparks	float	1072868	94611	0.0466584	0	1000	Amusement Parks per 1000 people
aden_amusementparks	float	1081312	10811	0.0244798	0	209.1314	Amusement Parks per sq mile
count_movietheaters	float	1081312	20	0.1576881	0	19	Total counts: Movie Theaters
emps_movietheaters	float	1081312	2336	2.414964	0	3400	Total employees: Movie Theaters
den_movietheaters	float	1072868	122484	0.0308851	0	858.9835	Movie Theaters per 1000 people
aden_movietheaters	float	1081312	10960	0.0384631	0	208.4833	Movie Theaters per sq mile
count_zoosaquariumsgardens	float	1081312	11	0.0291923	0	12	Total counts: Zoos, Aquariums, and Gardens
emps_zoosaquariumsgardens	float	1081312	685	0.489982	0	807	Total employees: Zoos, Aquariums, and Gardens
den_zoosaquariumsgardens	float	1072868	25961	0.0060358	0	833.3333	Zoos, Aquariums, and Gardens per 1000 people
aden_zoosaquariumsgardens	float	1081312	3156	0.0056515	0	104.5657	Zoos, Aquariums, and Gardens per sq mile
count_bingocardsgambling	float	1081312	14	0.0479935	0	13	Total counts: Bingo Halls, Card Games, and Gambling Facilities
emps_bingocardsgambling	float	1081312	1261	2.685918	0	8754.5	Total employees: Bingo Halls, Card Games, and Gambling Facilities

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Variable	Type	Obs	Unique	Mean	Min	Max	Label
den_bingocardsgambling	float	1072868	40813	0.0065761	0	204.0816	Bingo Halls, Card Games, and Gambling Facilities per 1000 people
aden_bingocardsgambling	float	1081312	4427	0.0094978	0	278.4035	Bingo Halls, Card Games, and Gambling Facilities per sq mile
count_poolhallsbowlingalleys	float	1081312	18	0.2369594	0	20	Total counts: Pool Halls and Bowling Alleys
emps_poolhallsbowlingalleys	float	1081312	2518	2.671646	0	7629	Total employees: Pool Halls and Bowling Alleys
den_poolhallsbowlingalleys	float	1072868	177734	0.0333304	0	476.1905	Pool Halls and Bowling Alleys per 1000 people
aden_poolhallsbowlingalleys	float	1081312	15441	0.0326714	0	291.0426	Pool Halls and Bowling Alleys per sq mile
count_totartsentertainment	float	1081312	126	1.442047	0	133	Total counts: All Arts and Entertainment Venues
emps_totartsentertainment	float	1081312	31346	16.88201	0	9249	Total employees: All Arts and Entertainment Venues
den_totartsentertainment	float	1072868	401861	0.5218726	0	9448.818	All Arts and Entertainment Venues per 1000 people
aden_totartsentertainment	float	1081312	66318	0.4579378	0	582.0852	All Arts and Entertainment Venues per sq mile
count_hotels	float	1081312	238	2.595195	0	300	Total counts: Hotels
emps_hotels	float	1081312	56603	50.73838	0	18307.5	Total employees: Hotels
den_hotels	float	1072868	468015	1.016542	0	7000	Hotels per 1000 people
aden_hotels	float	1081312	91064	0.5511988	0	1045.868	Hotels per sq mile
count_casinohotels	float	1081312	38	0.0291109	0	41	Total counts: Casino Hotels
emps_casinohotels	float	1081312	1683	5.103892	0	33346.62	Total employees: Casino Hotels
den_casinohotels	float	1072868	16790	0.0142717	0	4000	Casino Hotels per 1000 people
aden_casinohotels	float	1081312	2177	0.0047793	0	210.8939	Casino Hotels 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.