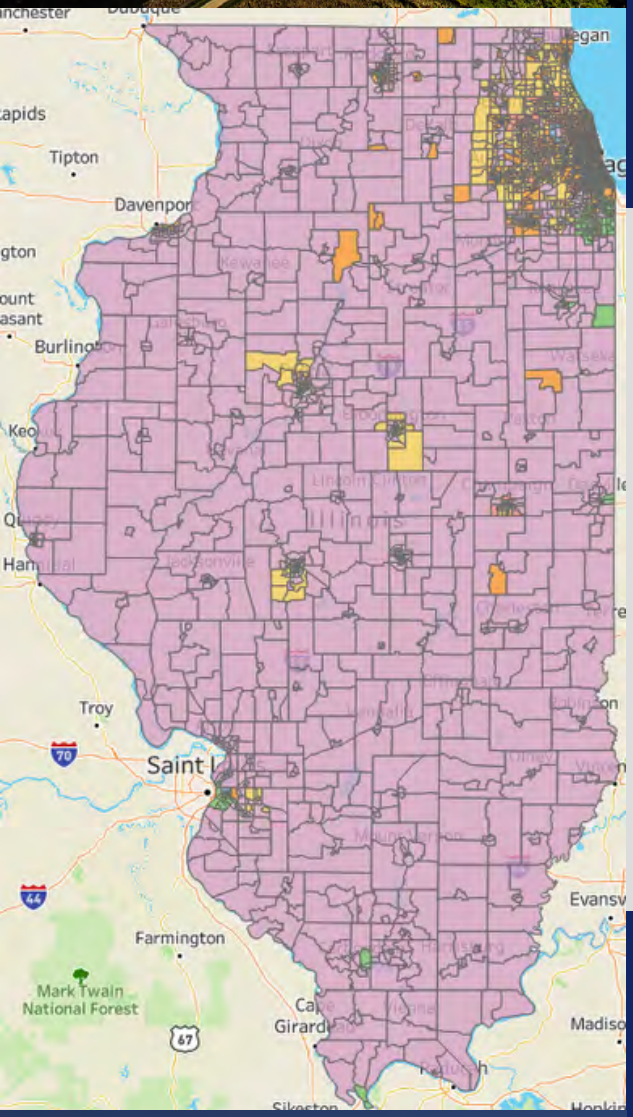

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THE ILLINOIS SOCIO-DEMOGRAPHIC EQUITY DASHBOARD:

WHAT ARE THE CHARACTERISTICS OF ILLINOIS NEIGHBORHOODS?

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PART OF THE UNIVERSITY OF ILLINOIS SYSTEM

The Illinois Socio-Demographic Equity Dashboard: What are the Characteristics of Illinois Neighborhoods?

EXECUTIVE SUMMARY

Where you live matters. The purpose of this study is to characterize the neighborhoods of Illinois using several socio-demographic variables known to have lasting impacts on residents' lives.

Data source

Census tract data from the 2019 American Community Survey, 5-year estimates

Analytic technique

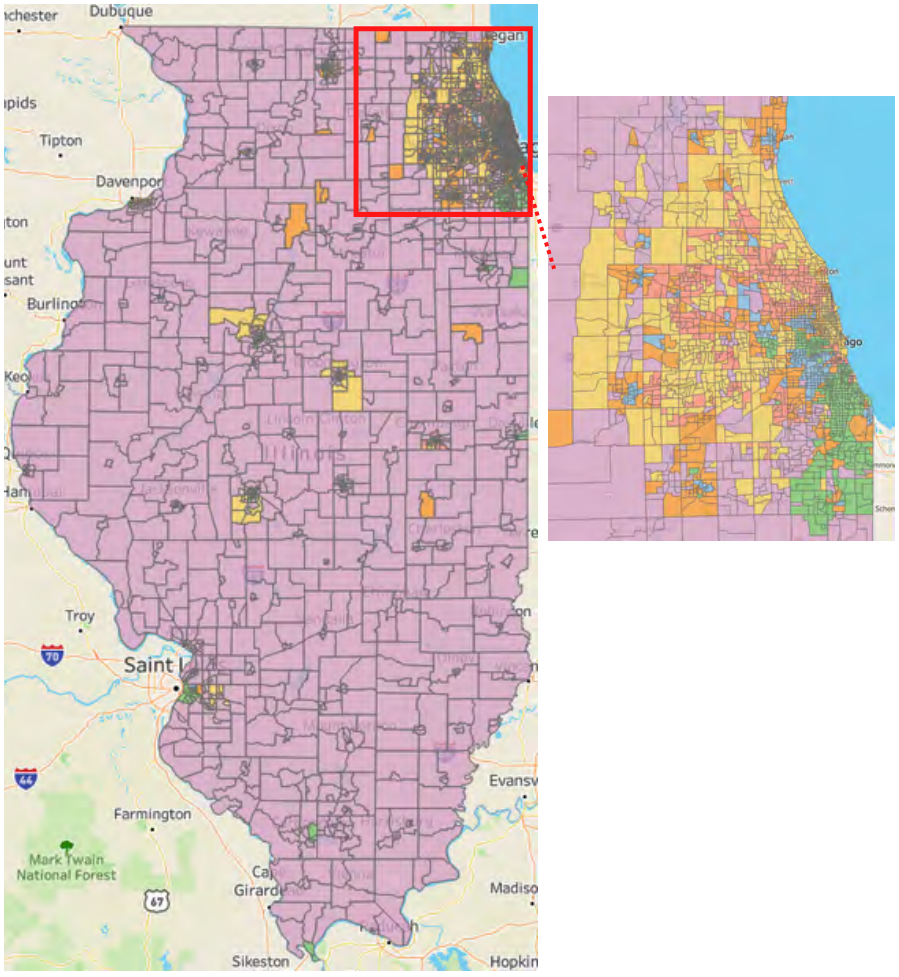
Latent profile analysis (LPA)

The following socio-demographic variables were included in the LPA to determine how many unique neighborhoods are in Illinois.

- Race and ethnic background
- Language
- Age
- Education
- Poverty rate
- Geographic mobility
- Income
- Unemployment rate
- Occupation industry

KEY FINDINGS

We found that Illinois is made up of **six distinct neighborhood types**. Each neighborhood type can be characterized by different socio-demographic variables. Moreover, these neighborhood types can be found throughout the state (see below).



Neighborhood type 1
White & Asian, multi-lingual professionals, moderately high SES
(10% of tracts, 11.0% of population)

Neighborhood type 2
Young Hispanic/Latino manufacturing & service workers
(7% of tracts, 7.7% of population)

Neighborhood type 3
Black workers in low-wage social service jobs or unemployed
(14% of tracts, 9.8% of population)

Neighborhood type 4
Older White workers in mid-wage occupations
(39% of tracts, 38.5% of population)

Neighborhood type 5
Racially diverse workers in mid-wage occupations
(12% of tracts, 12.4% of population)

Neighborhood type 6
White professionals, high SES
(19% of tracts, 20.5% of population)

Once we determined neighborhood type and mapped them out geographically, we analyzed the neighborhood types in a series of case studies of various locations throughout the state. These locations included: **urban centers outside of Chicago, border cities, Chicago and its surrounding suburbs, and 6 points of interest to IWERC**.

Urban Centers	Border Cities	Chicago & Suburbs	Points of Interest
Bloomington	East St. Louis	Chicago	Beardstown
Champaign	Moline	North suburbs	Cairo
Peoria		Northwest suburbs	Carbondale
Rockford		South suburbs	Decatur
Springfield		West suburbs	Danville
			Kankakee

While analyzing these case studies, several patterns were observed for each of the neighborhood types as well as the towns in which they were present.

1. **Many urban centers are highly segregated.** Neighborhood types **2**, **3**, and **5** were observed in nearly all urban centers throughout the state. More often than not, neighborhood types **2** and **3** appeared as larger concentrated areas in urban centers. Type **5** was typically observed as a border between larger areas of a neighborhood type, acting as a sort of buffer.
2. **Neighborhood types 1 and 6 acted as traditional suburban neighborhoods.** These neighborhood types were seen on the outskirts of urban centers and were typically larger tracts, consistent with relatively less population density.
3. **Border cities have urban and suburban neighborhoods that bleed over from other states.** Both border cities show neighborhoods that are consistent with larger cities. The cities in other states have an impact on Illinois neighborhoods.
4. **Several of our points of interest towns share a common theme in their population decline.** These points of interest are idiosyncratic in their neighborhoods surrounded by rural neighborhood type **4**. These towns are largely Black and Hispanic/Latino communities that were once larger industrial cities in the state but have seen significant declines in their White population with the downturn of various industries.

The findings of this report provide a basis for further research into the relationship between neighborhoods and their residents. **Future projects will analyze and evaluate equitable access and opportunity to various education and workforce resources in the state.** These resources include workforce development programs, early childhood programs and services, community colleges, K-12 schools with computer science programs, K-12 schools and their evidence-based funding (EBF) tier levels, post-secondary institutions with teaching programs, internet access, and many others.

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Read the full report and view interactive dashboard here:
https://go.illinois.edu/il-equity-dashboard

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External Review:

This report was reviewed by scholars and practitioners to ensure that its contents were both rigorous and applicable to educators and policymakers with varying levels of background knowledge. The reviewers of this report included:

- Ying Chen (University of Illinois Chicago)
- Jasmine D. Collins, Ph.D. (University of Illinois Urbana-Champaign)
- John Easton, Ph.D. (UChicago Consortium on School Research)
- Sebastian Kiguel (Northwestern University)

We deeply thank these reviewers for their time and expertise.

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Introduction

Where you live matters. The characteristics of a neighborhood have lasting impacts on residents' lives. Previous research has shown strong relationships between neighborhood characteristics such as public resources, social services, housing and labor markets, and community ties and individual and community outcomes related to crime, physical health, poverty and psychological distress.[1–4] For children especially, living in neighborhoods with low poverty rates has been associated with higher school readiness and achievement, college attendance, and future income.[5–7] Thus, one's neighborhood and proximity to various resources have effects on well-being.

Mapping and geospatial analysis methods have long been used in a variety of ways to analyze relationships between neighborhoods and resident characteristics. For instance, proximity to various resources such as healthy foods and schools with special education services have been associated with the demographics of the neighborhood revealing disparities in social services by the racial/ethnic makeup of a neighborhood.[8,9] Geospatial analysis has also been used to analyze resource access (e.g., stroke centers) based on neighborhood location (e.g., urban vs. rural).[10]

Chicago has been a source of neighborhood research for some time given its historic segregation across its 77 community areas.[8,11,12] While the neighborhoods of Chicago have been researched and analyzed extensively,[11,13,14] a state-wide analysis of neighborhoods has yet to be done. It is important to use a state-wide lens because of the variation of ***socio-demographics*** throughout the state. There are several larger cities in the central and southern parts of the state that may very well have more in common with other urban areas than their rural counterparts. A state-wide analysis is needed in order to see which neighborhoods have access (or not) to vital educational and workforce resources and help to direct support where needed.

> ***Socio-demographics*** are social and demographic factors that define people in a specific group or population. These factors can include race/ethnicity, income, age, education, employment, marital status, and more.

The purpose of this study is to characterize and describe the neighborhoods of Illinois using several socio-demographic variables, such as racial/ethnic background, language spoken at home, income, education level, occupation industry, and more. To do this, we utilize data collected by the U.S. Census through the 2019 American Community Survey (ACS) and analyze it via latent profile analysis. This analytic method has been used previously in other research analyzing neighborhood characteristics[11] and has the benefit of considering the socio-demographic variables' intersectionality (i.e., how they interact with one another). Once each neighborhood is categorized and described, we then build a map of Illinois' various neighborhood types. This map allows us to compare neighborhood types geographically throughout the state to determine any patterns related to socio-demographic variables and neighborhood location.

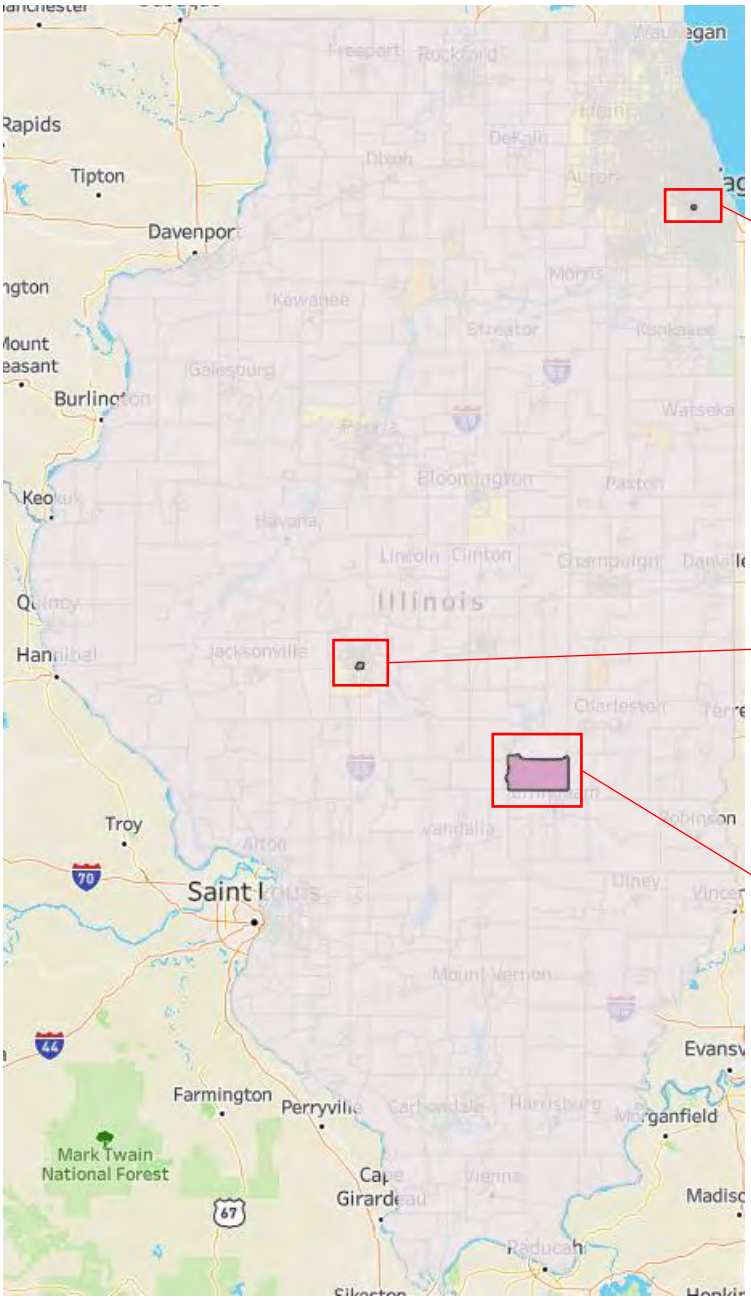
This geographic analysis is the first of a multi-part project where we will evaluate equitable access and opportunity to various education and workforce resources in the state. This first part builds the base map, and the forthcoming reports will focus on a particular education or workforce resource such as American Job Centers, K-12 computer science programming, internet access, and more. By characterizing neighborhoods into a small number of groups or types, we can compare the experiences of people and their access to various resources in disparate parts of the state.

Methods

Census Tracts: What are they and why do we use them?

Census tracts are small statistical subdivisions covering a contiguous area of a county that the Census Bureau utilizes to aid in the counting of people. Census tracts are usually stable in their boundaries so that comparisons can be made over time. However, tracts can be split or merged depending on population growth or decline.[15] For this 2019 data set, Illinois has a total of 3,123 Census tracts.

Tracts are based on population distribution, so the Census tries to include the same number of people in each tract. Tract populations can range between 1,200 and 8,000 people, with an ideal population of about 4,000 people.[15] Because tracts are based on population distribution, tract size, or land area, can vary widely, especially when comparing urban and rural areas. For example, Figure 1 below shows three Census tracts from various areas across the state: tract 9595 in south central Shelby County, tract 27 in Sangamon County just outside of Springfield, and tract 8225 in south suburban Cook County. Populations within each of the tracts are relatively similar (ranging from 3,185 to 4,366 residents) yet their total areas differ greatly (ranging from 0.7 square miles to 166 square miles).[16–18]



Census tract: 8225, Cook County
Population: 4,366
Area: 0.7 square miles

Census tract: 27, Sangamon County
Population: 3,185
Area: 2.6 square miles

Census tract: 9595, Shelby County
Population: 3,884
Area: 166 square miles

Figure 1. Census tract comparison of location, population, and total area in square miles for Illinois Census tracts 9595 in Shelby County, 27 in Sangamon County, and 8225 in Cook County.

We believe Census tracts are the most fitting data unit to map neighborhoods across the state.[a] Census tracts have the most robust datasets compared to other geographical units (e.g., Census

[a] Because the population and area of tracts differs widely, we understand that the term *neighborhood* may not adequately describe an area the same way in a rural vs. urban area. However, this report aims to describe neighborhood *types* and how they differ from one another. Thus, we believe the term *neighborhood type* best fits our goal to focus on the socio-demographic characteristics of one area compared to another.

blocks or block groups) and typically include data on income, demographics, and educational attainment.[19]

Analytic Method: Latent Profile Analysis

We used a statistical technique called **latent profile analysis (LPA)**. LPA is used to uncover groups or clusters in data that share characteristics, such that individual units within a group are most similar to one another and are the most different from units in other groups.[20] In other words, the technique will create neighborhood types so that each type will be as *similar* as possible *within* the type while at the same time be as *different* as possible *across* types. LPA takes an individual-oriented approach (as opposed to a variable-centered approach) in that it assumes (1) individual differences are present and have meaning to the phenomenon being analyzed; (2) individual differences occur in a logical way and can be analyzed through patterns; and (3) any patterns observed across individuals are meaningful and interpretable.[20] Moreover, this approach allows us to consider the socio-demographic variables simultaneously in the model by means of intersectionality. This means that the model is considering the interactions of the variables instead of treating them independently (i.e., how race/ethnicity, income, education, etc., are connected, often reflecting inequities and systemic issues).[21] By using this statistical technique, we can describe Illinois neighborhoods by various socio-demographic variables and describe how one neighborhood is distinct from another. Other studies have taken this same approach.[11]

Variable Selection

For this analysis, we used 5-year estimate data from the 2019 American Community Survey (ACS) from the U.S. Census Bureau at the tract level.[22] Each of the variables we included in our model were gathered from several ACS data tables, which can be found in Appendix A.

Variables were selected based on the following criteria: (1) their prevalence in demography, or population literature; (2) their importance to the study's first objective to effectively characterize the differences in socio-demographic characteristics between neighborhoods in the state; and (3) their importance to the study's second objective of later analyzing access to various educational and workforce resources. Below we provide the rationale for including each variable in our model, and Table 1 provides descriptions of each variable included.[b]

- *Race and ethnic background.* Extant research has shown that (1) neighborhoods are largely segregated by race and ethnicity in many urban and rural areas;[23] and (2) associations exist between race/ethnicity and neighborhood interactions such as employment, especially in low-income neighborhoods.[24] Neighborhood characteristics and access to various resources also vary with the racial/ethnic makeup of neighborhood residents.[25]

[b] We kept terms as they are used in the Census and continued throughout this report for consistency. For example, while we would prefer to use Hispanic/Latinx, the Census uses Hispanic or Latino, which is the term we used going forward.

- *Language*. Previous research has shown the language spoken at home is a good indicator of migration history.[26] Language also can be seen as a barrier to accessing resources depending on how they are made available (e.g., marketing materials only in English or social workers in a predominately Hispanic/Latino area that do not speak Spanish).
- *Age*. Knowing the median age of a tract provides insight into age-appropriate needs and services. For example, if the tract skews younger, residents may be in higher need of early childhood services such as daycares.
- *Geographic Mobility*. Geographic mobility is included in the analysis because it's the closest proxy for international or internal migration.[7] A high mobility rate (proportion of those that have moved within the past year) could also be an indicator of unstable housing.[27,28]
- *Income*. Income is an indicator of the number of material resources and the material living standard available within a household.[29,30] Income also comes into play for allocating money from taxes into neighborhood resources such as schools and roads.
- *Poverty*. Neighborhood poverty is an important indicator of adverse environments (e.g., crime, underfunded schools, and limited access to jobs) and is strongly associated with social and cultural norms (e.g., community cohesion, social networks, parenting style) in the community.[31–33]
- *Education*. Educational attainment is a good proxy for human and social capital resources in the community.[6] Research has shown that education and income are positively associated which is then associated with the quality of resources in a given area.[34]
- *Unemployment*. Unemployment leads to income instability, which in turn decreases access to consistent resources.[35] Unemployment is also an indicator of an unstable job market or lack of available jobs.
- *Occupation industry*. Occupation industry defines the sector or kind of business done by one's employer (e.g., transportation, education, food service) as opposed to one's occupation (e.g., truck driver, teacher, chef) or class (e.g., self-employed, private sector, government-employees).[36] The industry in which someone works can impact their sense of community within their neighborhood and allow for networking opportunities among those who are job-seeking, especially if a neighborhood or town has a major employer of an industry.[37] Moreover, the benefits one receives and overall job quality can vary by industry.[38] Lastly, occupation industry can help determine what workforce development programming currently exists or is missing from communities.

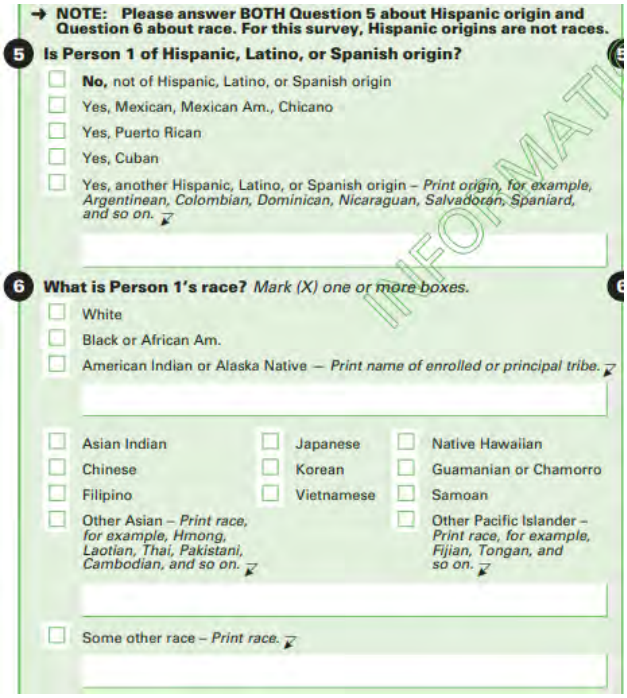
Table 1. Census tract-level variables included in the LPA model. Definitions were adapted from the U.S. Census Bureau glossary.

Variable	Description
Race and ethnic background	Percent of population who identify as: • American Indian Alaska Native (AIAN)/Native Hawaiian Pacific Islander (NHPI) • Asian • Black or African American • Hispanic or Latino • White • Two or more races (Multi-race)
Language	Percent of population whose language spoken at home is[c]: • Only English • Spanish • A language other than English or Spanish
Age	Median age in years
Geographic Mobility	Percent of population who have moved within the past year
Income	Median household income in dollars
Poverty	Percent of population below the federal poverty level
Education	Average years of formal education
Unemployment	Unemployment rate of the tract • Respondents are categorized as unemployed if they met the following criteria: (1) were jobless within a week, (2) actively seeking work within the last four weeks, and (3) would accept a job if offered.
Occupation industry	Percent of population whose occupation falls into one of the following categories: • Arts, entertainment, recreation, accommodation, and food services (AERAFS) • Agriculture, forestry, fishing and hunting, and mining (AFFHM)[†] • Educational services, health care, and social assistance (ESHCSA) • Finance, insurance, real estate and rental and leasing (FIRE) • Manufacturing (MANU) • Professional, scientific, management, administrative, and waste management (PSMAWM) • Retail trade (RTT) • Transportation, warehousing, and utilities (TWU) *Note: this is not an exhaustive list of all occupation industries offered by the Census Bureau. See our limitations section for more information. [†]AFFHM was not included in the LPA model but is important in the discussion of this report. See limitations section and Appendix D for more information.

The race/ethnicity variable in the Census: The flaws and our approach

The race and ethnicity questions on the Census have been the source of debate among researchers for quite some time. In the American Community Survey, respondents are asked to identify their race *and* ethnicity in a question that is asked in two parts (see Figure 2): the first asks about Hispanic origin and the second asks to select one or more race options.

[c] We simplified the categories for the language metric according to tract data tables. In the ACS, the Census asks respondents language in a three-part series: (1) if the respondent speaks a language other than English at home; (2) if so, what that language is; and (3) how well the respondent speaks English.



→ NOTE: Please answer BOTH Question 5 about Hispanic origin and Question 6 about race. For this survey, Hispanic origins are not races.

5 Is Person 1 of Hispanic, Latino, or Spanish origin?

- ☐ **No,** not of Hispanic, Latino, or Spanish origin
- ☐ Yes, Mexican, Mexican Am., Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, another Hispanic, Latino, or Spanish origin – *Print origin, for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.*

6 What is Person 1's race? *Mark (X) one or more boxes.*

- ☐ White
- ☐ Black or African Am.
- ☐ American Indian or Alaska Native – *Print name of enrolled or principal tribe.*
- ☐ Asian Indian
- ☐ Chinese
- ☐ Filipino
- ☐ Other Asian – *Print race, for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.*
- ☐ Japanese
- ☐ Korean
- ☐ Vietnamese
- ☐ Native Hawaiian
- ☐ Guamanian or Chamorro
- ☐ Samoan
- ☐ Other Pacific Islander – *Print race, for example, Fijian, Tongan, and so on.*
- ☐ Some other race – *Print race.*

Figure 2. Questions on Hispanic origin and race as they appeared in the 2019 American Community Survey (ACS) from the U.S. Census Bureau.

While there have been issues raised on various aspects of the questions,[39] one major issue we find concerning to researchers who use Census data is the separation of Hispanic origin from other racial categories. The separation of these two items brings several challenges to using and presenting race/ethnicity data.

Because of the format of the questions, the Census does not allow respondents to select Hispanic/Latino/Latina as their only racial identity, despite many from the community considering it as part of or their only racial identity.[40,41] Moreover, respondents are then forced to select a racial category in the second part of their answer to which they may or may not feel connected.

It is important to note that the U.S. Census Bureau uses the two-question approach in accordance with the U.S. Office of Management and Budget (OMB), which made the decision for separation between Hispanic origin and racial identity in 1997. In 2015, the U.S. Census Bureau tested a merged one-question item on race and ethnicity and the results were promising. The combined question led to lower instances of missing or invalid answers, significantly higher rates of Hispanic respondents identifying as Hispanic/Latino only, and more detailed responses than the separate question approach.[42] There were also extensive efforts to include a racial category separate from White for those who identity as Middle Eastern and/or North African (MENA) that the Bureau also tested. These revisions[d] did not make it into the 2020 Census, though they have gained more steam to be put into effect in the 2030 Census.[43]

The implications of the formatting of the questions in the response data make for some difficult choices. We considered two approaches, though there are other approaches.[44]

Approach 1

Since the questions are asked separately, separating the data by the proportion of Hispanic/Latino or not, then by racial categories, would be truer to how the question was intended by the Census Bureau. However, if one were to combine the data from both questions into one variable, all races and ethnicities would not add to 100% because of the double-counting of people. For example, if a respondent answers they are of Hispanic origin *and*

[d] Other revisions to the race/ethnicity items did make it to the 2020 Census which included free response boxes under some racial identities to include origins.

identify as Black/African American for their race, in this approach they would be included in the proportion of Hispanic/Latino *and* Black/African American, and thus, counted twice. Whereas, if a respondent answers they are *not* of Hispanic origin and identify as Black/African American, they are only included in the proportion of Black/African American, and only counted once. As seen in Table 2, the racial/ethnic composition for one tract adds up to 154.2% when all categories are included. All "racial" categories add up to 100%, then any individual who also identified as Hispanic is counted again. A limitation of this approach is the over or undercounting of a particular group (e.g., overcounting of White people because someone who identifies solely as Hispanic/Latino was forced to select a race category). Further, because the racial/ethnic variable adds up to over 100%, it is difficult to read and interpret the data correctly. However, this approach allows researchers to consider individuals who identify as Hispanic/Latino plus another race (e.g., Afro-Latinos).

Approach 2

Another approach would be to subtract those who select Hispanic/Latino from the other racial category they selected. For example, if a respondent answers they are of Hispanic origin *and* identify as Black/African American for their race, in this approach they would be included *only* in the proportion of Hispanic/Latino, but *not* Black/African American. As seen in Table 2, with this approach, the Hispanic/Latino composition does not change from the first approach, but all other racial categories decline to make up the difference. A limitation of this approach is that it erases part of someone's identity if they are Hispanic/Latino plus another racial identity. However, this approach does ensure that all racial and ethnic categories add up to 100%, treating Hispanic/Latino as its own racial category, which is the most common presentation of race/ethnicity data. This approach also allows for easier reading and interpretation of the data.

Table 2. Example of Census tract 8421, Cook County racial/ethnic composition using both approaches.

Race/ethnicity	Approach 1	Approach 2	Difference in proportion between approaches
AIAN/NHPI	0.8%	0.3%	-0.5%
Asian	2.2%	1.0%	-1.2%
Black/African American	86.7%	39.8%	-46.9%
Hispanic/Latino	54.2%	54.2%	0%
White	9.1%	4.2%	-4.9%
Multi-racial	1.2%	0.5%	-0.7%
Total	*154.2%*	*100%*	*-54.2%*

Because of the inherent flaw in the Hispanic origin and racial identity questions, we believe there is no one correct way to use and display this data. Each approach has its own advantages and disadvantages. Our compromise was to run the LPA using both sets of data. Both LPAs provided similar results, so for ease of interpretation and readability, this report uses **Approach 2** to discuss race/ethnicity data. Additionally, we can utilize what we learned from running both approaches to understand the nuances of neighborhood composition for those who identify as multiple racial groups, including Hispanic/Latino. For those interested in Approach 1, you can find the full LPA results in Appendix B.

Findings

What are the various neighborhoods of Illinois?

The LPA resulted in six distinct neighborhood types (see Appendix B for further model information). Each of these neighborhood types have unique characteristics. Table 3 includes a summary of the neighborhood types, Census variables, and the aspects of each neighborhood type that were found to be unique according to the LPA.

Table 3. Summary table of each neighborhood type.

	Neighborhood type 1	Neighborhood type 2	Neighborhood type 3	Neighborhood type 4	Neighborhood type 5	Neighborhood type 6
Race and ethnic background	**Mostly White, Highest Asian**	**Mostly Hispanic/ Latino**	**Mostly Black/African American**	**Mostly White**	**Diverse**	**Mostly White**
Language	**Highest Other**	**Highest Spanish**	Mostly English	Mostly English	**English, Spanish, & Other**	Mostly English, some Other
Age	Average	**Youngest**	Average	**Oldest**	Average	Average
Geographic mobility	Average	**Least mobile**	Average	Average	Average	Average
Income	**Second highest income**	Average	**Lowest income**	Average	Average	**Highest income**
Poverty	Average	Average	**Highest poverty rate**	Average	Average	**Lowest poverty rate**
Education	Average	**Fewest years of formal education**	Average	Average	Average	**Most years of formal education**
Unemployment	Average	Average	**Highest unemployment rate**	Average	Average	**Lowest unemployment rate**
Occupation industry	ESHCSA & PSMAWM	**Highest MANU & AERAFS**	**Highest ESHCSA**	**Highest AFFHM**	ESHCSA, MANU, PSMAWM, RTT, & AERAFS	**Highest PSMAWM & FIRE**

*Note: Bold lettering denotes that the variable distinguishes the neighborhood type compared to others. "Average" indicates that neighborhood type is close to the aggregated average (or median) across that variable and does not distinguish that type from others in any way.
**See Table 1 for occupation industry definitions.

Detailed descriptions of each neighborhood type can be found below. We would like to highlight two points about our aim in creating these descriptions of neighborhood types by characteristics: (1) The descriptions do not describe everyone who lives within their representative tracts; and (2) They are representative of the majority of those that live in the tracts. Figure 3 is a map of Illinois with each tract color coded for its neighborhood type. An interactive version of this map, along with a data dashboard, can be found here.

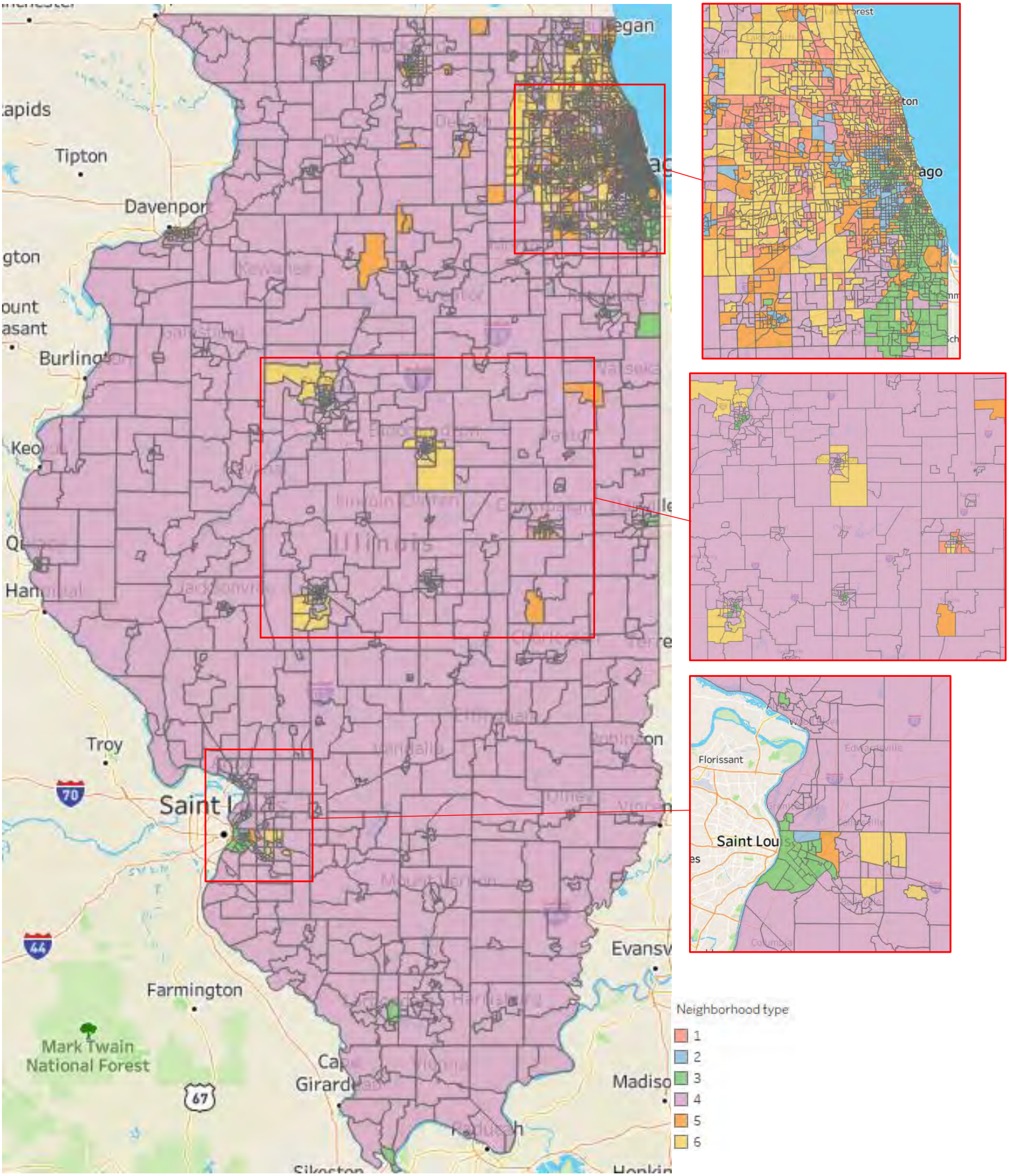


Figure 3. Map of Illinois and callout of Chicago area, central Illinois, and East St. Louis. Each Census tract is outlined in black and filled by colors corresponding to its neighborhood type. An interactive version can be found on IWERC's website.

Neighborhood type 1: *White & Asian, multi-lingual professionals, moderately high SES*
10% of tracts, 11.0% of IL population

Individuals within neighborhood type **1** identify mostly as White, but this neighborhood type has the highest proportion of Asian residents (21%) compared to any other neighborhood type. People within this neighborhood type are mostly only English-speaking (55.2%), but it also has the highest proportion of those that speak a language other than English or Spanish (more than 34% of neighborhood residents). In terms of occupation industry, there are a high proportion of workers in the educational services, health care, and social assistance industry as well as professional, scientific, and management industry. This neighborhood type also has the second highest employment within the finance, insurance, and real estate industry when compared to other neighborhood types. Households in this neighborhood type have a median income of $70,505, which is the second highest among all the neighborhood types. See Table 8 in Appendix C for how each variable compares to state averages or medians.

Neighborhood type 2: *Young Hispanic/Latino manufacturing & service workers*
7% of tracts, 7.7% of IL population

People within neighborhood type **2** identify mostly as Hispanic/Latino. This neighborhood type has the highest proportion of Hispanic or Latino people at nearly 78%. On average, this neighborhood type has the highest proportion of Afro-Latino residents. Moreover, there is a high proportion of Spanish speakers (69.2%), more so than any other neighborhood type. The individuals of this neighborhood type are the youngest (median age is 32 years old), have the fewest years of formal education (11.6 years, between not completing and completing high school), and were least likely to move outside their neighborhood within the past year (9%). Households in this type have a median income of $49,973. This neighborhood type has the highest proportion of workers within the manufacturing industry and the arts, entertainment, recreation, accommodation, and food service industry.

Neighborhood type 3: *Black workers in low-wage social service jobs or unemployed*
14% of tracts, 9.8% of IL population

Residents of neighborhood type **3** identify mostly as Black or African American (81.3%) – the highest amongst all neighborhood types – and almost all residents speak English only. People in these neighborhoods experience the highest poverty rate (over 30%), the highest unemployment rate (17.3%), and earn the least ($32,995) when compared to all other neighborhood types. The average resident of type **3** has completed some college (13 years of formal education). Workers in this neighborhood type are primarily within the educational services, health care, and social assistance industry, which is the highest compared to other neighborhood types.

Neighborhood type 4: *Older White workers in mid-wage occupations*
39% of tracts, 38.5% of IL population

Neighborhood type **4** is majority White, with almost 85% of residents identifying as such, and mostly English-speaking. Residents of these neighborhoods are the oldest when compared to other neighborhood types (median age is almost 42 years old). For occupation industry, type **4** has the highest proportion of the agriculture, forestry, fishing and hunting, and mining industry (though it was not included in our final LPA model)[e] and the lowest proportion of the professional, scientific, and management industry out of all types. In terms of all other variables (education, income, poverty level, employment, etc.), neighborhood type **4** shows little variation from the mean. Lastly, neighborhood type **4** encompasses the most Census tracts, as seen by the large swaths of **purple** on the map (Figure 3).

Neighborhood type 5: *Racially diverse workers in mid-wage occupations*
12% of tracts, 12.4% of IL population

People within neighborhood type **5** are quite diverse. This neighborhood type has almost equal proportions of those who identify as White (40%) or Hispanic/Latino (39%) and have a large proportion of Black or African American residents (14.5%). These neighborhoods have high proportions of both English-only and Spanish speakers. Similar to type **4**, neighborhood type **5** also shows little variation from the mean on all other variables. In fact, neighborhood types **4** and **5** are similar on all variables except racial and ethnic background and primary language spoken.

Neighborhood type 6: *White professionals, high SES*
19% of tracts, 20.5% of IL population

People within neighborhood type **6** are mostly White and English-speaking. In direct contrast to neighborhood type **3**, this neighborhood type has the lowest poverty rate (5.5%), the lowest unemployment rate (3.4%), and the most earnings ($112,404) when compared to all other neighborhood types. Individuals in this neighborhood type have the most years of formal education (15.9 years, equivalent to completing a bachelor's degree), though not by much with type **1** following with 14.6 years. Workers are primarily within the finance, insurance, and real estate industry and professional, scientific, and management industry–of which type **6** has the highest proportions within these industries when compared to other neighborhood types. However, the largest proportion of workers in type **6** are in the educational services, health care, and social assistance industry. Type **6** has the least number of workers in the transportation, warehousing, and utilities industry within and across neighborhood types.

Case Studies: How do the neighborhood types differ across the state?

At first sight of Figure 3, it may seem that most of the state falls under neighborhood type **4**. However, while type **4** tracts represent the most geographic area in Illinois, they only account for 39% of the tracts and 38.5% of the population in the state. Thus, we also focused on areas in

[e] See notes in the Limitation section and Appendix D for more information on the agriculture industry variable.

the state that show a variation of neighborhood types. We analyzed four different groupings of areas across the state: urban centers, border cities, Chicago and surrounding suburbs, and other points of interest to IWERC.

Urban centers

We analyzed urban centers in Illinois that are outside of Chicago and its surrounding suburbs. Urban centers were included if they have 75,000 residents or more. Five urban centers met these criteria: Bloomington, Champaign, Peoria, Rockford, and Springfield (Figure 4).

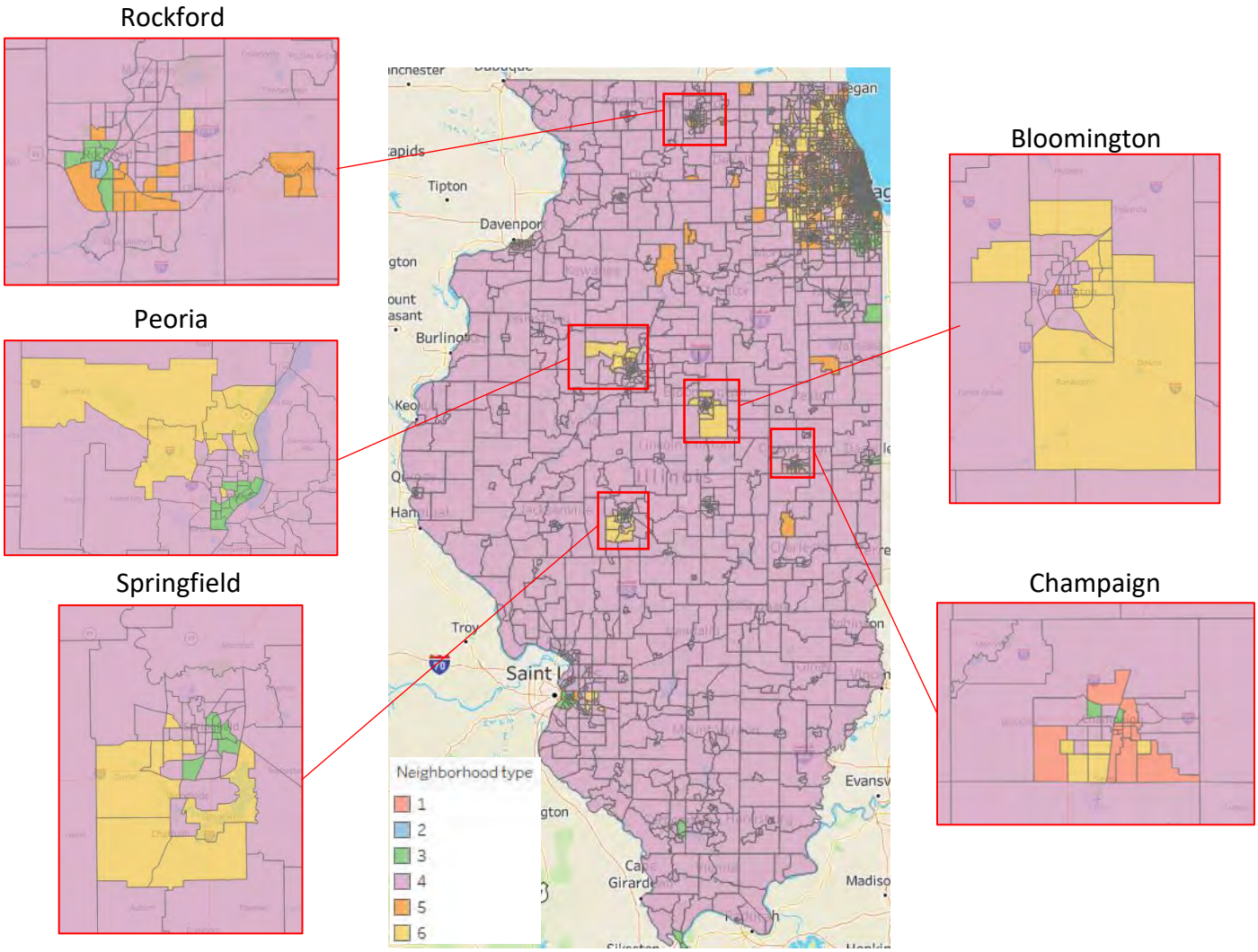


Figure 4. Map callouts of urban centers: Bloomington, Champaign, Peoria, Rockford, and Springfield.

Neighborhood type **3** appears close to the center of each city in four of the five urban centers. If neighborhood types **2** or **5** are present, they, too, appear close to the centers of each city. The tracts within these neighborhood types are also among the most densely populated (i.e., people per square mile), which coincides with the dense population of

Population density of tracts
Type **2**: 8,552 people/square mi
Type **3**: 2,981 people/square mi
Type **5**: 1,947 people/square mi
State average: 226 people/square mi

an urban center. These neighborhood types have higher proportions of Asian, Black, and Hispanic/Latino residents. Historically, Black, Hispanic/Latino, and Asian people live closer to city centers because of historic and sustaining racially excluding housing policies and practices.[45] Moreover, urban centers have increasingly become less White over time.[46]
As seen in all five urban centers, neighborhood type **6** appears as the suburban tracts just outside of the urban centers of each city. Neighborhood type **1** also follows this pattern of being farther away from city centers (see Champaign and Rockford). Both these neighborhood types are mostly White, with substantial Asian representation in type **1**. Historically, suburban areas are largely White (68%), though this has trended downwards over the last two decades with an influx of Hispanic/Latino, Black, and Asian residents.[46] These neighborhood types also share similar characteristics of the highest and second highest median annual income, more years of formal education, and similar occupation industries (such as finance and professional/scientific). These characteristics are typically seen in suburban communities, where residents are more likely to be employed and earn more than urban residents.[47]

Border Cities

The second grouping we analyzed was border cities that share a state border with an out-of-state urban center. Two border cities met this criterion: East St. Louis, which borders St. Louis, Missouri, as well as Moline, which borders Davenport, Iowa (see Figure 5).

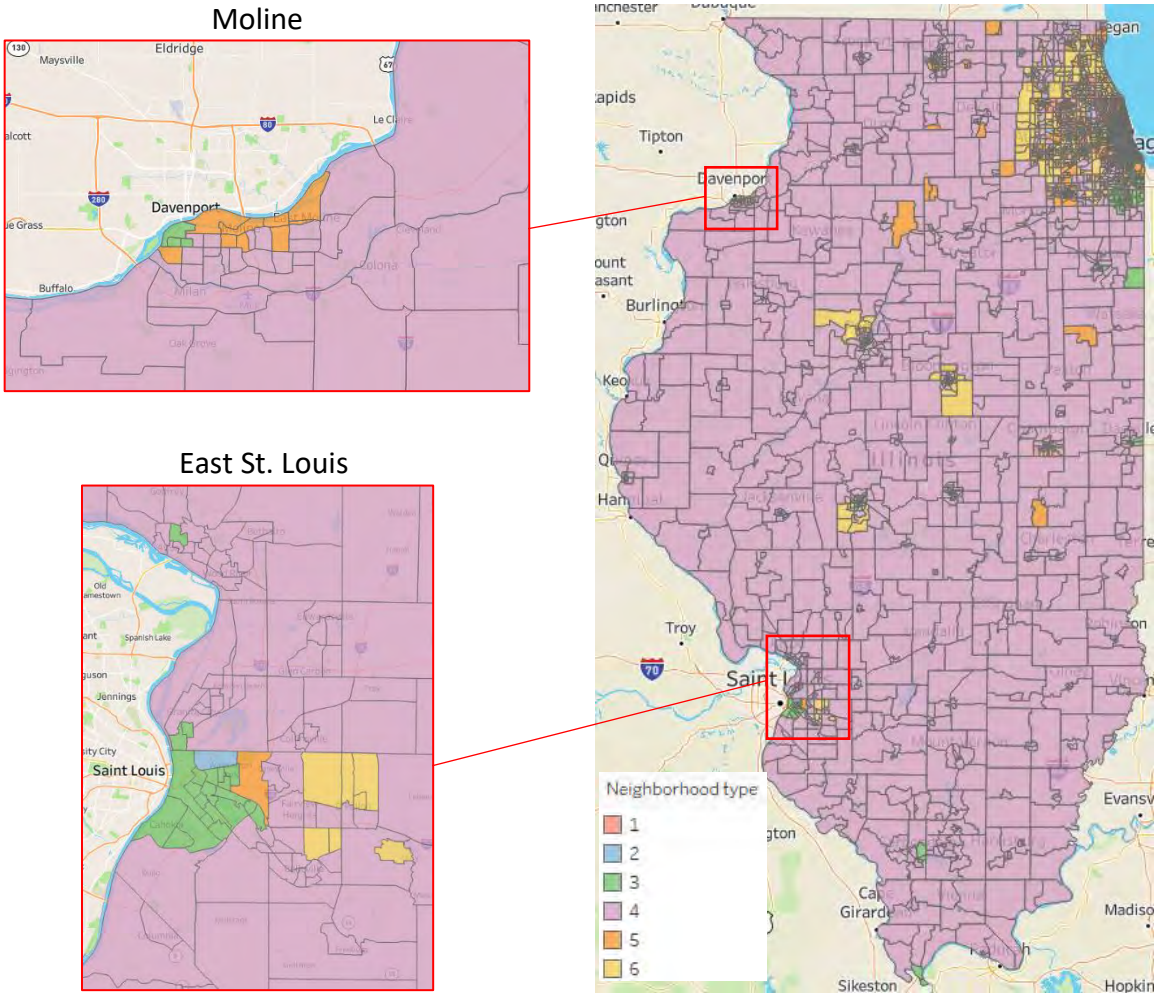


Figure 5. Map callouts of border cities: East St. Louis and Moline.

Though St. Louis (population 304,709) and Davenport (population 102,199) are in other states, we see evidence of urban neighborhoods and suburbs on the Illinois side.[f] East St. Louis and its surrounding area is within Metro East, the second largest metro area in the state behind Chicago. Here, we see neighborhood types that are characteristic of urban centers (**2**, **3**, and **5**) as well as neighborhood type **6**, which we have seen in both urban and suburban areas elsewhere. While Moline borders a smaller city than East St. Louis does, and thus there is less neighborhood type diversity, we do see neighborhood types **3** and **5** indicating more urban-like neighborhoods.

[f] City populations are 2020 estimates from the U.S. Census Bureau.

Chicago and its Suburbs

The third grouping we analyzed was Chicago and its surrounding suburbs. Figure 6 includes map callouts for Chicago, north suburbs, northwest suburbs, south suburbs, and west suburbs.

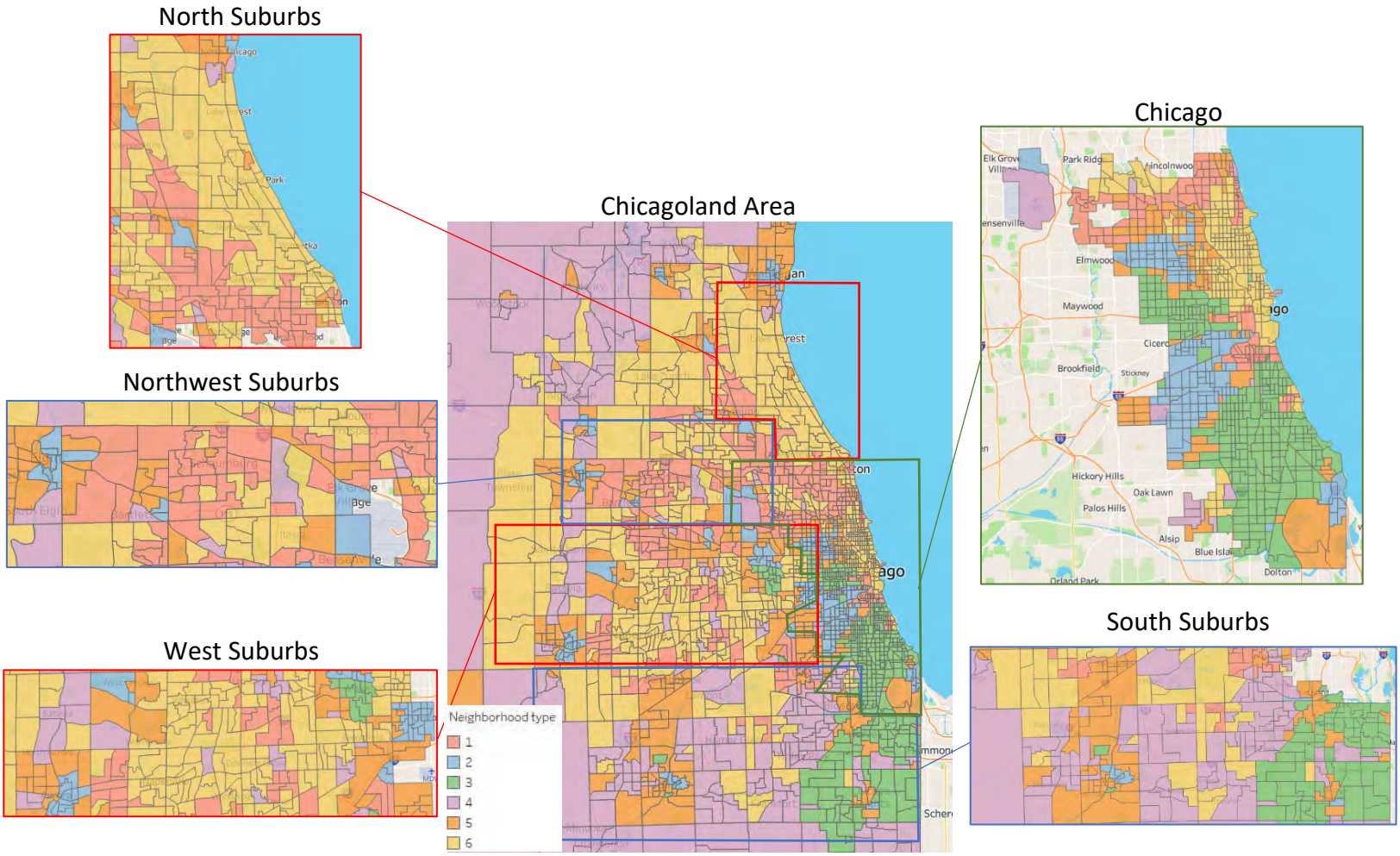


Figure 6. Map callouts for Chicago and Chicago suburbs (north, northwest, south, and west).

Starting with Chicago (top right), it is evident that Chicago has a diverse range of neighborhoods. In fact, all six neighborhood types are within Chicago's limits. Further, because many of the neighborhood types are unique in their racial/ethnic makeup and closely cluster together (e.g., type **3** neighborhoods cluster together on the South and West Sides, type **6** neighborhoods cluster together on the northern part of the city, and so forth), Chicago is still a segregated city. We saw in other urban areas similar patterning of neighborhood types clustering together (see Rockford, Moline, and East St. Louis), but Chicago shows the patterns on a much grander scale with more distinct borders between types. Chicago has been the basis for several geospatial research studies because of its historical and sustained segregated neighborhoods.[8,11,12] In this vein, our analysis aligns with extant research. One notable finding from our analysis that is evident in Chicago is the function of neighborhood type **5**. This neighborhood type is often acting as a border between large concentrations of the same neighborhood type. Neighborhood type **5** is racially/ethnically diverse, both English-only and Spanish speaking, and average on all other socio-demographic variables. It seems this neighborhood type is a blend of the nearby neighborhoods, being a so-called "buffer."

Neighborhood Type Descriptions

Neighborhood type 1: *White & Asian, multi-lingual professionals, moderately high SES*

Neighborhood type 2: *Young Hispanic/Latino manufacturing & service workers*

Neighborhood type 3: *Black workers in low-wage social service jobs or unemployed*

Neighborhood type 4: *Older White workers in mid-wage occupations*

Neighborhood type 5: *Racially diverse workers in mid-wage occupations*

Neighborhood type 6: *White professionals, high SES*

The suburbs of Chicago vary in their neighborhood types. The north and northwest suburbs are quite similar with the majority of the neighborhoods being type **1** and **6**, with some sprinklings of neighborhood types **2**, **4**, and **5**. The south and west suburbs have more neighborhoods of types **3** and **4**, along with the others. Similar to Chicago, its suburbs also have a wide array of neighborhood types.

Other points of interest

In the previous Case Study sections above, we focused on neighborhood typology in various urban and suburban settings. In general, rural areas and towns throughout the state are classified as type **4.** However, in this section we are focusing on six towns in the state of Illinois that are idiosyncratic in their neighborhoods. These towns, Beardstown, Cairo, Carbondale, Danville, Decatur, and Kankakee, are islands of diverse communities in the large sea of neighborhood type **4** throughout the state, as seen in Figure 7. While not the only Illinois towns with diverse neighborhood types, they serve as case studies for understanding how neighborhood characteristics are shaped by historical, economic, and social forces.

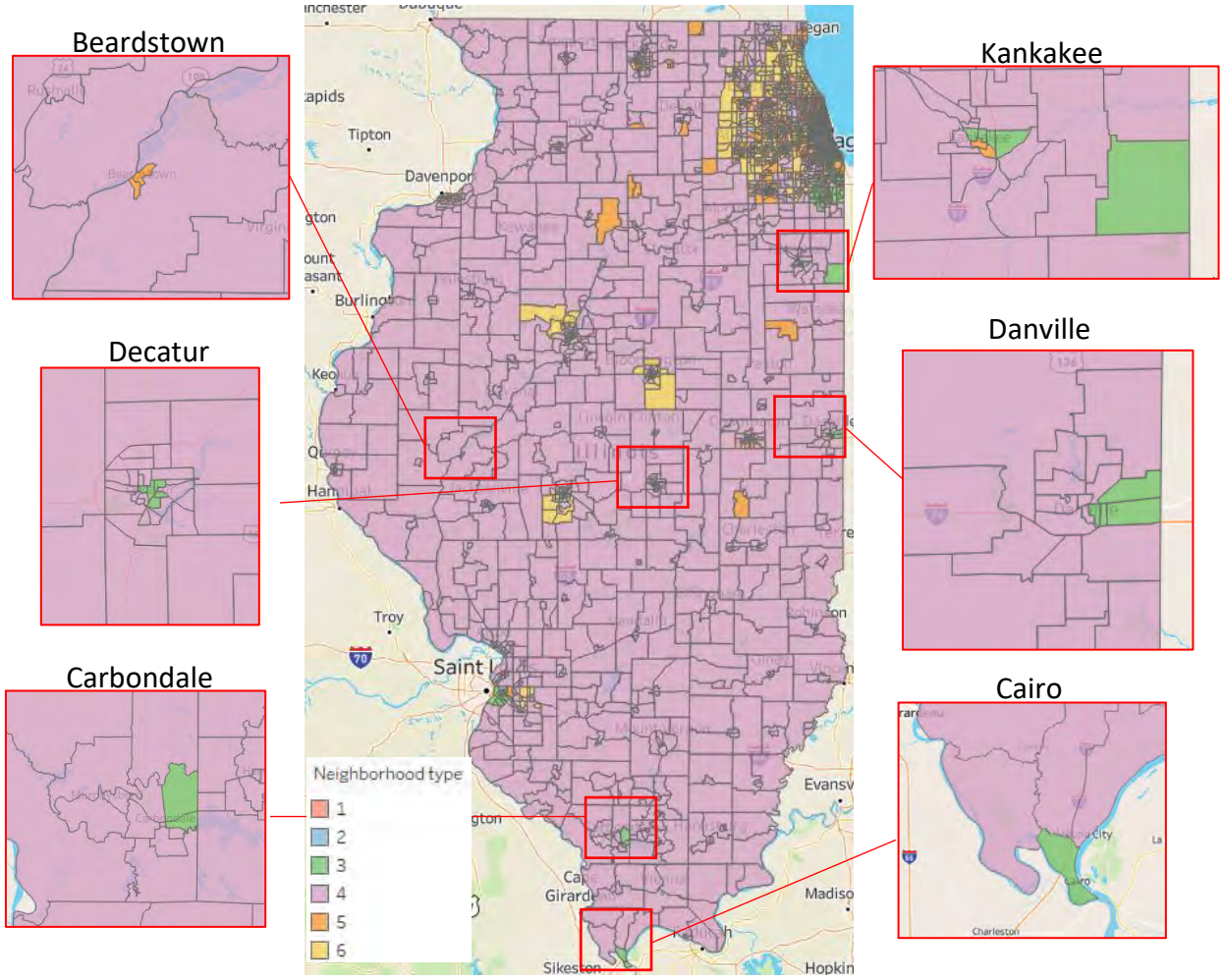


Figure 7. Map callouts for other points of interest: Beardstown, Cairo, Carbondale, Danville, Decatur, and Kankakee.

Beardstown is a town of 5,844 residents.[48] It is situated along the Illinois river, which flows into the Mississippi River. Because of this, Beardstown's economy has historically relied on the Illinois river for transportation of agricultural goods and locations for outdoor recreation. Its major employer is a pork slaughterhouse, which has attracted a more racially diverse workforce to the area.[49] As indicated in the map, Beardstown has neighborhood types **4** and **5**, indicating a diverse community with high proportions of Hispanic/Latino, Black, and White residents who speak mainly English and Spanish.

Cairo is a historic town at the southernmost tip of Illinois. It currently has 1,884 residents.[50] Cairo once had a booming economy built on its proximity to both the Mississippi and Ohio Rivers. Unfortunately, Cairo saw a steep decline in its economy with decreased river and ferry trade, which was felt by many riverfront communities across the country. Cairo has also been a site for heightened racial tensions through the years. After the Civil War, Cairo became home to many formerly enslaved people and has remained a town with a high proportion of Black residents ever since. Cairo became a place of violence towards its Black residents, with lynchings in the early 20th century and civil unrest in the aftermath of a police murder of a

young Black man and racial discrimination at Cairo's largest factory in the 1960s.[51,52] Due to ongoing racial tension and coinciding economic downturn, the population of Cairo steadily declined.

According to our analysis, Cairo has two neighborhood types: **3** and **4**. Within neighborhood type **3** we see high rates of poverty and unemployment as well as low income, which is consistent with data from the town of Cairo.[53] Alexander County, which is where Cairo sits, also has the highest rate of youth experiencing homelessness within the state.[54] Despite the economic issues faced, Cairo is committed to restimulating their economy and growing their population. They have focused a lot of attention on tourism and historic preservation in recent years.

Carbondale is a town of 21,741 residents.[55] Carbondale is home to Southern Illinois University's Carbondale (SIUC) campus, whose undergraduate enrollment is just shy of 8,300 students.[56] SIUC and its partner hospital are the largest employers in Carbondale. Carbondale has neighborhood types **3** and **4**, indicating median to low income and median to high rates of poverty and unemployment. Regardless, neighborhood type **3** does overwhelmingly employ many within the educational services, health care, and social assistance industries, ones you are likely to find near major education and health centers like Carbondale.

Decatur is a larger town of 69,646 residents. Decatur is home to Millikin University and Richland Community College, so it has a moderate proportion of employment in the educational services industry. Moreover, Decatur has several large manufacturing, agricultural, and food processing plants including Caterpillar and Archer Daniels Midland Co. (ADM).[57] In 2014, ADM moved their corporate headquarters from Decatur to Chicago following several federal investigations.[58] Following this and many other industrial plant closings in the early 2000s, Decatur saw a decline in its population, which is continuing.[59] Our analysis showed that Decatur, like other towns in this case study, contains neighborhood types **3** and **4**, which is consistent with the high poverty rate Decatur is currently facing.[60]

In the late 1800s, **Danville** became a major industrial city with its main economy coming from its many coal mines. Over the years, many of the mines closed along with several factories, including a General Motors foundry, and Danville's population began to decline significantly.[61,62] The mines that remain in operation and other industries including agriculture and manufacturing are Danville's largest industries. Danville is also home to Danville Area Community College. Danville neighborhoods are either type **3** or **4**, similar to the other towns in this section. Currently, Danville has 28,787 residents.[63]

Kankakee was founded as an industrial quarrying and railroad center and is currently home to 23,922 residents. Kankakee contains neighborhood types **3**, **4**, and **5**, indicating a diverse population. This is consistent with Kankakee's population of 41% Black residents and 20% Hispanic/Latino residents.[64] Kankakee does have a high poverty rate, which is consistent with our analysis of neighborhood type **3**.[64] Its major industries are educational services, health care,

and social assistance industries and manufacturing, which is also consistent with these neighborhood types.

Beardstown, Cairo, Decatur, Danville, and Kankakee have all seen persistent population declines over the last few decades. This is consistent with a national trend of rural communities and small to mid-size towns declining in population, with the Midwest seeing the largest decreases.[46,65] Moreover, large numbers of White residents are leaving these towns, and Black and Hispanic/Latino residents are more rooted in staying.[66] This may be why we see the inclusion of neighborhood types **3** and **5** because the racial/ethnic groups that make up these neighborhood types are more likely to stay in these towns than their White counterparts.

Limitations

There were two main limitations to this research study, and both regard the data excluded from our LPA models. We previously spoke on the limitations of the race/ethnicity data collected by the Census and the many approaches researchers can take to using and displaying the data.

The second limitation concerns the occupation industry variable. We collected data from 13 categories for occupation industry.[67] Our intent was to include all 13; however, this presented two issues. Because of the expansive list of categories, some categories had much smaller cell sizes than others, especially for Illinois. When including all 13 categories, the model could not reliably differentiate all 13. Further, having 13 categories of industries, some of which were very similar across most neighborhoods (e.g., construction, wholesale trade, and other services), may be too many to effectively distinguish which neighborhoods show unique industry patterns. Thus, we eliminated some categories[g] from our model based on limited variance. The seven categories we included showed the most variance (SD > 4) and theoretically would be more likely to show us where neighborhoods differ on the occupation industry variable. One industry category that was removed via this method was the agriculture category, which included agriculture, forestry, fishing and hunting, and mining. We understand that agriculture is an important industry for many parts of the state and may be of interest to readers. Thus, we ran a post-hoc analysis to determine if this industry category was more likely to be seen in some neighborhoods than others. This analysis found that neighborhood type **4** was more likely to have residents who reported the agriculture industry than any other neighborhood type (see Appendix D for detailed analysis). This is consistent with type **4** being in mostly rural areas of the state where agriculture and related industries are more common.

[g] The following occupation industries were removed from our analysis due to the least variance: Agriculture, forestry, fishing and hunting, and mining; Construction; Wholesale trade; Information; Public administration; and Other services, except public administration.

Conclusion

The purpose of this research study was to effectively characterize the neighborhoods of Illinois. We did this by using U.S. Census data and selecting several socio-demographic variables of interest that we think represent key demographic features of a neighborhood. We used latent profile analysis to group the neighborhoods based on underlying patterns in these variables and found that the state is made up of six distinct neighborhood types.

Neighborhoods were unique based on their racial/ethnic makeup and socio-economic variables such as income, poverty rates, unemployment rates, level of education, and occupation industry. In large, we observed these neighborhood types align with other research that shows how systemic injustices based on race and socio-economic status are enduring and are placed upon Black and Brown communities.[68,69] For example, many of the neighborhood types show a direct relationship between unemployment rate, poverty rate, and the proportion of Black and Hispanic/Latino peoples. Variables such as race and ethnic background, income, unemployment, and years in formal education did stand out as unique variables that made a neighborhood type distinct from another in many instances. For example, types **1** and **6** are quite similar in their high income, low unemployment, and high level of education but differ by their racial/ethnic composition – both mostly White but type **1** showing the highest proportion of Asian residents. Types **2** and **3** also shared characteristics (low income, high poverty rates, high unemployment, fewest years of formal education) but differ again by their racial/ethnic representation – type **2** being mostly Hispanic/Latino and type **3** being mostly Black/African American. We acknowledge the systemic racism that prolonged the effects of inequitable policies (e.g., redlining) that segregated towns and cities and limited opportunities for employment advancement and opportunities to build generational wealth within Illinois. Unfortunately, many neighborhoods within Illinois still show evidence of these systemic issues and were evident in the various neighborhood types resulting from this analysis and subsequent maps. Our intent is not to "gap-gaze" but to understand the extent of the inequities at play. Forthcoming reports on access in relation to neighborhoods will use these neighborhood descriptions as a means to orient a discussion of resource and opportunity equity.

Once we characterized the neighborhoods, we mapped them onto the state to analyze the neighborhoods geographically. We discussed differences in neighborhood types through four case studies which were selected based on interesting patterns found from the LPA: urban centers, border cities, Chicago and surrounding suburbs, and other points of interest. Overall, we found that (1) many urban centers in the state are highly segregated; (2) neighborhood types **1** and **6** acted as traditional suburban neighborhoods; (3) larger cities that border Illinois have neighborhood characteristics that bleed over to varying degrees in our state; and (4) several spots in Illinois that are idiosyncratic in their neighborhoods (Beardstown, Cairo, Decatur, Danville, and Kankakee) are largely Black and Hispanic/Latino communities that were once larger industrial cities in the state but have seen a decline in the White population with the downturn of various industries.

We observed each neighborhood type all over the state, which means same-type neighborhoods in different geographic regions share more socio-demographic characteristics than different-type neighborhoods in closer proximity. However, it does beg the question if a neighborhood type **3** in Cairo, IL and a neighborhood type **3** in Chicago, IL receive the same resources based on their shared characteristics. These findings provide a basis for further research into the relationship between neighborhood types and resident access to resources. Future projects will analyze various education and workforce resources in relation to these neighborhood types. These resources include workforce development programs, early childhood programs and services, K-12 schools with computer science programs, K-12 schools with varying evidence-based funding (EBF) tier levels, post-secondary institutions with teaching programs, internet access, and many others. It is in these future studies where we will evaluate equitable access and opportunity throughout the state.

References

1. Galster, G. C., & Killen, S. P. (1995). The geography of metropolitan opportunity: A reconnaissance and conceptual framework. *Housing and Policy Debate*, *6*(1), 7–43. https://doi.org/10.1080/10511482.1995.9521180
2. Humphrey, J. L., Lindstrom, M., Barton, K. E., Shrestha, P. M., Carlton, E. J., Adgate, J. L., Miller, S. L., & Root, E. D. (2019). Social and Environmental Neighborhood Typologies and Lung Function in a Low-Income, Urban Population. *International Journal of Environmental Research and Public Health*, *16*(7), 1133. https://doi.org/10.3390/IJERPH16071133
3. Kling, J. R., Liebman, J. B., & Katz, L. F. (2007). Experimental Analysis of Neighborhood Effects. *Econometrica*, *75*(1), 83–119. https://doi.org/10.1111/J.1468-0262.2007.00733.X
4. Sampson, R. J., Morenoff, J. D., & Gannon-Rowley, T. (2002). Assessing "Neighborhood Effects": Social Processes and New Directions in Research. *Annu. Rev. Sociol*, *28*, 443–478. https://doi.org/10.1146/annurev.soc.28.110601.141114
5. Chetty, R., Hendren, N., & Katz, L. F. (2016). The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment †. *American Economic Review*, *106*(4), 855–902. https://doi.org/10.1257/aer.20150572
6. Dupere, V., Leventhal, T., Crosnoe, R., & Dion, E. (2010). Understanding the positive role of neighborhood socioeconomic advantage in achievement: The contribution of the home, child care, and school environments. *Developmental Psychology*, *46*(5), 1227–1244. https://doi.org/10.1037/A0020211
7. Leventhal, T., & Brooks-Gunn, J. (2000). The Neighborhoods They Live in: The Effects of Neighborhood Residence on Child and Adolescent Outcomes. *Psychological Bulletin*, *126*(2), 309–337. https://doi.org/10.1037/0033-2909.126.2.309
8. Huang, H. (2021). A Spatial Analysis of Obesity: Interaction of Urban Food Environments and Racial Segregation in Chicago. *Journal of Urban Health*, *98*, 676–686. https://doi.org/10.1007/S11524-021-00553-Y/TABLES/3
9. Waitoller, F. R., & Radinsky, J. (2017). Geospatial Perspectives on Neoliberal Education Reform: Examining Intersections of Ability, Race, and Social Class. In D. Morrison, S. A. Annamma, & D. D. Jackson (Eds.), *Critical Race Spatial Analysis: Mapping to understand and address educational inequity*. Stylus.
10. Yu, C. Y., Blaine, T., Panagos, P. D., & Kansagra, A. P. (2021). Demographic Disparities in Proximity to Certified Stroke Care in the United States. *Stroke*, *52*(8). https://doi.org/10.1161/STROKEAHA.121.034493
11. Easton, J. Q., Francis, J., Farrar, I. C., Stein, A. G., Connors, M. C., Ehrlich, S. B., & Kabourek, S. E. (2020). *A new method for describing Chicago neighborhoods*.
12. Onésimo Sandoval, J. S. (2011). Neighborhood Diversity and Segregation in the Chicago Metropolitan Region, 1980-2000. *Urban Geography*, *32*(5), 609–640. https://doi.org/10.2747/0272-3638.32.5.609
13. Sampson, R. J. (2012). *Great American city: Chicago and the enduring neighborhood effect*. University of Chicago Press.
14. Elliott, D. S., Wilson, W. J., Huizinga, D., Sampson, R. J., Elliott, A., & Rankin, B. (1996). The Effects of

Neighborhood Disadvantage on Adolescent Development. *Journal of Research in Crime and Delinquency*, *33*(4), 389–426. https://doi.org/10.1177/0022427896033004002
15. United States Census Bureau. (2021). *Census Glossary*. https://www.census.gov/programs-surveys/geography/about/glossary.html#par_textimage_13
16. United States Census Bureau. (2020). *Census Reporter Profile page for Census Tract 8220, Cook, IL*. American Community Survey 5-Year Estimates. http://censusreporter.org/profiles/14000US17031822000-census-tract-8220-cook-il
17. United States Census Bureau. (2020). *Census Reporter Profile page for Census Tract 27, Sangamon, IL*. American Community Survey 5-Year Estimates. http://censusreporter.org/profiles/14000US17167002700-census-tract-27-sangamon-il
18. United States Census Bureau. (2020). *Census Reporter Profile page for Census Tract 9595, Shelby, IL*. American Community Survey 5-Year Estimates. http://censusreporter.org/profiles/14000US17173959500-census-tract-9595-shelby-il/
19. Proximity One. (n.d.). *Neighborhoods*. Proximity. Retrieved August 8, 2022, from http://proximityone.com/neighborhoods.htm
20. Ferguson, S. L., Moore, E. W. G., & Hull, D. M. (2020). Finding latent groups in observed data: A primer on latent profile analysis in Mplus for applied researchers. *International Journal of Behavioral Development*, *44*(5), 458–468. https://doi.org/10.1177/0165025419881721
21. Bauer, G. R., Mahendran, M., Walwyn, C., & Shokoohi, M. (2022). Latent variable and clustering methods in intersectionality research: systematic review of methods applications. *Social Psychiatry and Psychiatric Epidemiology*, *57*(2), 221–237. https://doi.org/10.1007/S00127-021-02195-6/TABLES/3
22. United States Census Bureau. (2022). *Census Bureau Data*. https://data.census.gov/cedsci/
23. Hess, C. (2021). Residential Segregation by Race and Ethnicity and the Changing Geography of Neighborhood Poverty. *Spatial Demography*, *9*, 57–106. https://doi.org/10.1007/S40980-020-00066-3
24. Brisson, D., Roll, S., & East, J. (2009). Race and Ethnicity as Moderators of Neighborhood Bonding Social Capital: Effects on Employment Outcomes for Families Living in Low-Income Neighborhoods: *Families in Society: The Journal of Contemporary Social Services*, *90*(4), 368–374. https://doi.org/10.1606/1044-3894.3919
25. Esposito, M., Sylvers, D., Clarke, P., Finlay, J., Jang, J. B., & Tang, S. (2020). Black-White Inequities in Perception of Access to Neighborhood Resources Among Older Adults. *Innovation in Aging*, *4*, 704. https://doi.org/10.1093/GERONI/IGAA057.2472
26. Levels, M., & Dronkers, J. (2008). Educational performance of native and immigrant children from various countries of origin. *Etnic and Racial Studes*, *31*(8), 1404–1425. https://doi.org/10.1080/01419870701682238
27. Foulkes, M., & Newbold, K. B. (2005). Geographic Mobility and Residential Instability in Impoverished Rural Illinois Places. *Environemtn and Planning A: Economy and Space*, *37*(5), 845–860. https://doi.org/10.1068/A34211
28. Winkler, H. (2011). The Effect of Homeownership on Geographic Mobility and Labor Market Outcomes. *SSRN Electronic Journal*. https://doi.org/10.2139/SSRN.1724455
29. Galobardes, B., Shaw, M., Lawlor, D. A., Lynch, J. W., & Davey Smith, G. (2006). Indicators of socioeconomic position (part 1). *Journal of Epidemiol Community Health*, *60*, 7–12. https://doi.org/10.1136/jech.2004.023531
30. United States Census Bureau. (n.d.). *Median Household Income*. https://www.census.gov/quickfacts/fact/note/US/INC110221
31. Brooks-Gunn, J. (1997). *Neighborhood poverty: Context and consequences for children (Vol. 1)*. Russell Sage Foundation.
32. Jargowsky, P. A. (1997). *Poverty and place: Ghettos, barrios, and the American city*. Russell Sage Foundation.
33. Taylor, R. L., Cooper, S. R., Jackson, J. J., & Barch, D. M. (2020). Assessment of Neighborhood Poverty, Cognitive Function, and Prefrontal and Hippocampal Volumes in Children. *JAMA Network Open*, *3*(11). https://doi.org/10.1001/JAMANETWORKOPEN.2020.23774
34. Glomm, G., & Ravikumar, B. (2003). Public education and income inequality. *European Journal of Political Economy*, *19*(2), 289–300. https://doi.org/10.1016/S0176-2680(02)00178-7
35. Hill, H. D., Morris, P., Gennetian, L. A., Wolf, S., & Tubbs, C. (2013). The Consequences of Income Instability for Children's Well-Being. *Child Development Perspectives*, *7*(2), 85–90. https://doi.org/10.1111/CDEP.12018
36. United States Census Bureau. (2021). *About Industry and Occupation*.

https://www.census.gov/topics/employment/industry-occupation/about.html
37. Humphrey, C. R., Erickson, R. A., & Mccluskey, R. E. (1989). Industrial Development Groups, External Connections, and Job Generation in Local Communities: *Economic Development Quarterly*. https://doi.org/10.1177/089124248900300104
38. Pew Research Center. (2016). *The State of American Jobs*. https://www.pewresearch.org/social-trends/2016/10/06/3-how-americans-view-their-jobs/
39. Wang, H. Lo. (2018). No Middle Eastern Or North African Category On 2020 Census, Bureau Says. *NPR*. https://www.npr.org/2018/01/29/581541111/no-middle-eastern-or-north-african-category-on-2020-census-bureau-says
40. Pew Research Center. (2021). *Black and Hispanic Americans See Their Origins as Central to Who They Are, Less So for White Adults*. https://www.pewresearch.org/social-trends/wp-content/uploads/sites/3/2021/05/ST_2021.05.14_Census-Identity_FINAL.pdf
41. Parker, K., Horowitz, J. M., Morin, R., & Lopez, M. H. (2015). *The Many Dimensions of Hispanic Racial Identity*. https://www.pewresearch.org/social-trends/2015/06/11/chapter-7-the-many-dimensions-of-hispanic-racial-identity/
42. Mathews, K., Phelan, J., Jones, N. A., Konya, S., Marks, R., Pratt, B. M., Coombs, J., & Bentley, M. (2017). *2015 National Content Test Race and Ethnicity Analysis Report: A New Design for the 21st Century*. https://apps.npr.org/documents/document.html?id=4316468-2015nct-Race-Ethnicity-Analysis
43. Wang, H. Lo. (2021). Biden Revives An Effort To Change How The U.S. Census Asks About Race and Ethnicity. *NPR*. https://www.npr.org/2021/07/19/1017629384/biden-is-reviving-an-effort-to-change-how-the-census-asks-about-race-and-ethnici
44. Schuster, L. (2021). *We're Reporting Census Data All Wrong*. Boston Indicators. https://www.bostonindicators.org/article-pages/2021/december/census_reporting
45. Austin Turner, M., & Greene, S. (n.d.). *Causes and Consequences of Separate and Unequal Neighborhoods*. Urban Institute. Retrieved August 3, 2022, from https://www.urban.org/racial-equity-analytics-lab/structural-racism-explainer-collection/causes-and-consequences-separate-and-unequal-neighborhoods
46. Pew Research Center. (2018). *What Unites and Divides Urban, Suburban and Rural Communities*. www.pewresearch.org.
47. Pew Research Center. (2020). *Prior to COVID-19, Urban Core Counties in the U.S. Were Gaining Vitality on Key Measures*.
48. United States Census Bureau. (2021). *U.S. Census Bureau QuickFacts: Beardstown city, Illinois*. https://www.census.gov/quickfacts/beardstowncityillinois
49. Wisniewski, M., & Stebbins, C. (2012). Midwest farm town, transformed by immigration, thrives. *Reuters*. https://www.reuters.com/article/us-usa-immigration-meatpacking-idUSBRE85J0FA20120620
50. United States Census Bureau. (2020). *Census Reporter Profile page for Cairo, IL*. American Community Survey 5-Year Estimates.
51. *Abandoned Town of Cairo, Illinois*. (2016). Atlas Obscura. https://www.atlasobscura.com/places/cairo-illinois
52. Weiser-Alexander, K. (2020). *Cairo, Illinois – Death by Racism*. Legends of America. https://www.legendsofamerica.com/il-cairo/
53. United States Census Bureau. (2021). *U.S. Census Bureau QuickFacts: Alexander County, Illinois*. https://www.census.gov/quickfacts/fact/table/alexandercountyillinois/PST045221
54. Werner, S. M. (2022). *Trauma-Informed Care for Supporting the Mental and Physical Health of Youth Experiencing Homelessness (YEH)*. https://dpi.uillinois.edu/applied-research/iwerc/current-projects/trauma-informed/
55. United States Census Bureau. (2021). *U.S. Census Bureau QuickFacts: Carbondale city, Illinois*. https://www.census.gov/quickfacts/fact/table/carbondalecityillinois/PST045221
56. U.S. News & World Report. (2022). *Southern Illinois University--Carbondale*. Profile, Rankings and Data. https://www.usnews.com/best-colleges/southern-illinois-university-carbondale-1758
57. Economic Development Corporation. (2022). *Industries Here: Decatur-Macon County Illinois*. https://www.decaturedc.com/industries-here/
58. New Hampshire Public Radio. (2013). ADM To Move Its Headquarters Out Of Decatur. *Here and Now*. https://www.nhpr.org/2013-10-01/adm-to-move-its-headquarters-out-of-decatur
59. United States Census Bureau. (2020). *Southern and Western Regions Experienced Rapid Growth This Decade*.

https://www.census.gov/newsroom/press-releases/2020/south-west-fastest-growing.html
60. United States Census Bureau. (2021). *U.S. Census Bureau QuickFacts: Decatur city, Illinois*. https://www.census.gov/quickfacts/fact/table/IL,decaturcityillinois/PST045221
61. Franklin, S. (2001). Another Plant Closing, Another Blow to Danville. *Chicago Tribune*. https://www.chicagotribune.com/news/ct-xpm-2001-01-15-0101150237-story.html
62. Crane, T. (2018). *Decades later, community still scarred by GM Foundry's closing*. The News-Gazette. https://www.news-gazette.com/news/decades-later-community-still-scarred-by-gm-foundrys-closing/article_52f9f128-6728-514b-916f-4b0ade94b31b.html
63. United States Census Bureau. (2021). *U.S. Census Bureau QuickFacts: Danville city, Illinois*. https://www.census.gov/quickfacts/fact/table/danvillecityillinois,IL/PST045221
64. United States Census Bureau. (2021). *U.S. Census Bureau QuickFacts: Kankakee city, Illinois*. https://www.census.gov/quickfacts/fact/table/kankakeecityillinois,IL/PST045221
65. University of New Hampshire. (2019). *Shrinking population in more than a third of rural U.S. counties*. Science Daily. https://www.sciencedaily.com/releases/2019/02/190206115611.htm
66. Raphael, S., & Riker, D. A. (1999). Geographic Mobility, Race, and Wage Differentials. *Journal of Urban Economics*, *45*(1), 17–46. https://doi.org/10.1006/JUEC.1998.2081
67. United States Census Bureau. (2021). *About Industry*. https://www.census.gov/topics/employment/industry-occupation/about/industry.html
68. Dawkins, C. J., Shen, Q., & Sanchez, T. W. (2005). Race, space, and unemployment duration. *Journal of Urban Economics*, *58*(1), 91–113. https://doi.org/10.1016/J.JUE.2005.02.001
69. Reardon, S. F., Fox, L., & Townsend, J. (2015). Neighborhood Income Composition by Household Race and Income, 1990–2009: *The ANNALS of the American Academy of Political and Social Science*, *660*(1), 78–97. https://doi.org/10.1177/0002716215576104

Appendix

Appendix A – Census variables

All tract-level Census data was collected from the 2019 American Community Survey using 5-year estimates. Table 4 includes all the variables included in our model, how they are labeled in the Census data, and from which Census table they were pulled.

Table 4. Our model variable, the variable as displayed in Census data, and the table from which it was pulled from the 2019 ACS.

Model Variable	Census Variable	Table ID
Race and ethnic background	Race and ethnicity	DP05
Language	Language spoken at home	S1601
Age	Median age	B01002
Geographic Mobility	Geographic mobility	B07013
Income	Household income	S1903
Poverty	Population for whom poverty status is determined (total, below poverty level)	S1701
Education	Educational attainment (population over 25 years old)	S1501
Unemployment	Population 16 years and over (unemployment rate)	S2301
Occupation industry	Civilian employed population 16 years and over	DP03

It is important to note that the Education variable was transformed before our analysis from its original categorical data type to continuous. We did this in order to have an average number of years associated with the variable. Table 5 includes the conversions.

Table 5. Conversion of level of education from categorical to continuous variable.

Level of education indicated	Years of formal education
No schooling	0 years
Elementary education completed	6 years
High school not completed	11 years
High school completed	12 years
Some college	13 years
Associate's degree completed	14 years
Bachelor's degree completed	16 years
Master's degree completed	18 years
Professional degree or doctorate	20 years

Appendix B – Latent Profile Analysis

Approach 1

The LPA resulted in a 6-profile solution (Table 6). The 6-profile solution fit best for several reasons. The 7-profile solution did not fit because the smallest profile made up less than 5% of all cases. If we were to choose a solution where the smallest profile included less than 5% of the population, there would be less confidence that the profile is distinct from another. After removing the 7-profile solution, the 6-profile solution had the lowest log likelihood, AIC, BIC, and SABIC, all indicating better fit than the others. The entropy index, which indicates classification membership accuracy, indicates the 6-profile solution is better than the 5-profile solution due to its higher value. Lastly, the LMR LRT is significant for the 6-profile solution, which means the model is a better representation than the 5-profile solution. Moreover, the 6-profile solution made the most sense theoretically for our study. The 5-profile solution did not show much variation in profiles and the 7-profile solution, would it have been viable, showed profiles too granularly.

Table 6. Model fit criteria for latent profile analysis for Approach 1. *p<.001

Number of profiles	Log likelihood	AIC	BIC	SABIC	Smallest profile (N, %)	LMR LRT	Entropy
2	-86587.179	173302.357	173689.336	173485.982	529, 16.9%	12665.124*	0.990
3	-81063.222	162298.444	162818.447	162545.189	382, 12.2%	10985.855*	0.987
4	-77545.416	155306.832	155959.859	155616.699	388, 12.4%	6996.091*	0.953
5	-74668.473	149596.947	150382.998	149969.935	285, 9.13%	5721.564*	0.962
6	-72840.332	145984.664	146903.740	146420.773	218, 6.98%	3635.745, p = .0711	0.967
7	-71545.063	143438.127	144490.226	143937.356	146, 4.68%	2575.986, p = .5624	0.967

Approach 2

The second LPA (with the revised race/ethnicity data) had several viable solutions. The 5-, 6-, and 7-profile solutions all showed decreasing values of the Log likelihood, AIC, BIC, and SABIC criteria, indicating better fit than lower number of profiles. High entropy indices indicate better fits for the 6- and 7-profile solutions (omitting 2- and 3-profile solutions for being too broad theoretically). All models met the required smallest class of 5% or more of the population. Lastly, the 5-, 6-, and 7-profile solutions showed significant LMR LRT statistics, indicating better fit than lower number profiles. The model fit criteria led us to either a 6- or 7-profile solution to be the best representation of the sample. For theoretical purposes, we chose to use the 6-profile solution. This solution not only made the most sense, but it was nearly identical to the 6-profile solution from the first LPA attempt.

Table 7. Model fit criteria for latent profile analysis for Approach 2. *p<.001

Number of profiles	Log likelihood	AIC	BIC	SABIC	Smallest class (N, %)	LMR LRT	Entropy
2	-97336.695	182627.894	183033.013	182820.127	400, 12.81%	12114.040	0.987
3	-91246.947	169926.122	170470.311	170184.344	397, 12.71%	12679.262	0.989
4	-84873.061	162490.802	163174.062	162815.015	393, 12.58%	7441.113	0.956
5	-81132.401	156140.824	156963.155	156531.027	293, 9.38%	6361.604, p=.0011	0.963
6	-77934.412	151821.462	152782.864	152277.655	230, 7.37%	4341.901, p=.5878	0.968
7	-75751.731	148862.593	149963.065	149384.776	217, 6.95%	2988.720, p=.1855	0.968

Appendix C – Neighborhood type descriptives

Table 8 includes the descriptives for each neighborhood type, all Census variables, as well as other aspects of the neighborhood.

Table 8. Means and medians of variables for each of the six neighborhood types.

Variable	Neighborhood type 1	Neighborhood type 2	Neighborhood type 3	Neighborhood type 4	Neighborhood type 5	Neighborhood type 6	State
Proportion of Census tracts	10%	7%	14%	39%	12%	19%	--
Proportion of Population	11.0%	7.7%	9.8%	38.5%	12.4%	20.5%	--
Average Tract Population	4,618	4,276	2,952	4,034	4,401	4,492	4,089
Average Tract Area (square mi)	1.04	0.50	0.99	43.67	2.26	2.61	18.05
Average Tract Density (people per square mi, rounded)	4,440	8,552	2,981	92	1,947	1,721	226
Average Proportion of Race and ethnic background							
AIAN/NHPI	0.43%	0.19%	0.37%	0.26%	0.40%	0.26%	0.30%
Asian	21.02%	2.43%	0.86%	1.32%	4.40%	7.74%	4.81%
Black or African American	7.02%	5.45%	81.29%	5.75%	14.51%	4.91%	17.01%
Hispanic or Latino	13.87%	77.54%	6.44%	5.73%	38.60%	8.07%	16.14%
White	55.22%	13.72%	9.39%	84.55%	40.00%	76.67%	59.61%
Two or more races	2.43%	0.67%	1.65%	1.81%	2.09%	2.34%	1.90%
Average Proportion of Language							
English only	55.17%	25.74%	91.91%	93.45%	58.73%	82.61%	78.46%
Spanish	10.33%	69.21%	5.49%	3.59%	31.32%	5.49%	12.92%
Other	34.50%	5.05%	2.61%	2.94%	9.95%	11.90%	8.60%
Median Age	39.4	31.9	36.5	41.9	35.3	40.4	39.4
Average Geographic Mobility	13.92%	9.43%	13.47%	11.62%	12.47%	13.12%	12.31%
Median Income	$70,505	$49,973	$32,995	$59,945	$60,162	$112,404	$61,462
Average Poverty Rate	12.97%	18.57%	30.40%	12.52%	14.75%	5.53%	14.41%
Average Years of Formal Education	14.6	11.6	13.0	13.6	13.0	15.9	13.8

Average Unemployment Rate	4.75%	8.03%	17.27%	5.42%	6.53%	3.43%	6.93%
Average Proportion of Occupation industry							
AERAFS	9.90%	13.66%	10.39%	8.20%	11.32%	7.23%	9.25%
AFFHM	0.16%	0.26%	0.17%	2.85%	0.44%	0.25%	1.27%
ESHCSA	25.05%	15.18%	28.49%	24.19%	19.26%	23.59%	23.52%
FIRE	7.69%	4.09%	5.25%	5.56%	5.33%	11.84%	6.76%
MANU	9.81%	17.64%	7.66%	13.47%	14.16%	8.75%	11.83%
PSMAWM	13.18%	12.13%	10.36%	7.24%	11.53%	19.31%	11.35%
RTT	10.10%	10.72%	10.97%	11.69%	11.55%	7.98%	10.66%
TWU	6.80%	6.92%	11.06%	6.27%	7.75%	4.11%	6.79%

Appendix D – Group differences for Agriculture Industry

A Kruskal-Wallis H test was conducted to determine if there were differences in proportion of residents who indicated the *agriculture, forestry, fishing and hunting, and mining* category as their occupation industry between neighborhood types. Boxplots indicated that the distributions of "scores", or in this case the proportion of the industry, were similar for all neighborhoods, which meets the assumption of examining groups by their medians. Median proportion of agriculture was statistically significantly different between neighborhood types, $\chi^2(5) = 1000.324$, $p < .001$.

Post hoc pairwise comparisons were conducted with a Bonferroni correction (adj. $p < 0.003$) for multiple comparisons to determine which neighborhood clusters had statistically different proportions of agriculture. Neighborhood type 4 (mdn = 1.33) had significantly higher proportions of the agriculture industry category than all other neighborhood types (Table 9).

Table 9. Median percent of agriculture industry category in each neighborhood type. A median of zero means that more than half the tracts in that neighborhood type reported 0% of their residents worked in the agriculture industry.

Neighborhood type	N	Median Percent of Agriculture Industry Category (%)
1	304	0.00
2	230	0.00
3	426	0.00
4	1219	1.33
5	361	0.00
6	583	0.00