Understanding Residential Patterns across Asian Ethnic Groups and U.S. Metropolitan Areas

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Abstract

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This paper explores the residential patterns of the six largest Asian ethnic groups – Chinese, Asian Indian, Filipino, Vietnamese, Korean, and Japanese – across fifty-seven U.S. metropolitan areas, which are categorized into seven types of immigrant gateways. Using 2010 U.S. decennial census data, I discover that the application of multiple residential segregation measures, each of which captures a unique aspect of residential experiences, leads to diverging results across subgroups and across places. On the basis of the dissimilarity index, Vietnamese are the most segregated; Chinese and Asian Indians are the most segregated when using the isolation index; and Filipinos are the most segregated along the clustering dimension. Older and more traditional immigrant gateways experience higher dissimilarity scores than newer gateways, while destinations that have received a high share of the foreign-born population in the second-half of the 20th century, namely after the enactment of the 1965 Immigration and Nationality Act, contain more clusters. These findings underscore the importance of examining residential patterns at a more granular level

than the broad, pan-ethnic grouping of Asians; beyond the oft-studied large metropolitan areas; and with more refined differentiation of immigrant gateway types than the dichotomy of new versus traditional immigrant destinations. Importantly, the results reveal that settlement dynamics of Asian groups need to be understood at the intersection of a group's immigration route and a metropolitan area's ecological structure as an immigrant destination. Finally, I identify a new neighborhood model, characterized as a "socially constrained resurgent community," which broadens the role that ethnic neighborhoods play in the settlement experiences of Asian groups and highlights the need to refine traditional theoretical ethnic neighborhood models in the literature.

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A. Introduction

Asians in aggregate are the fastest growing racial or ethnic group in the United States, with immigrants hailing from more than twenty East, South, and Southeast Asian nations (Pew Research Center 2017a). Between 2000 and 2015, the Asian population in the U.S. grew 72 percent from 11.9 million to 20.4 million. In comparison, Hispanics – the second-fastest growing population – grew 60 percent (Pew Research Center 2017a). Yet, sociologists have limited knowledge about the contemporary residential patterns of this rapidly growing and diverse population across the U.S., specifically the variations in settlement patterns within this heterogeneous population.

Developing a deeper understanding of the residential patterns of the subgroups within the large diverse Asian population is an important endeavor due to the inextricable relationship between residential segregation and broader patterns of inequality. A large body of research has shown how the residential area where racial, ethnic, and immigrant groups choose to settle can significantly influence their exposure to poverty, violence, and pollution; their access to institutions, including schools and health centers; and their patterns of incorporation in the United States (Sharkey and Faber 2014; Ellis and Almgren 2009). Research on contemporary settlement patterns of the diverse subgroups in the swelling Asian population is thus important and imperative in order to better understand life course trajectories and implications for inequality between and within the Asian ethnic groups.

Existing studies on the topic suffer from two major shortcomings, which carry major theoretical and practical ramifications. First, of great concern, most existing research on residential patterns has used the broad racial category of Asian Americans. By only studying the pan-ethnic grouping and failing to account for the heterogeneity within this simple, lump-sum group of Asians, scholars have developed theoretical conceptual

frameworks that could misrepresent the assorted experiences within the Asian category. In addition, public policies, which are largely formed based on research that utilizes the broad Asian grouping, could fail to properly address and support subgroups that have different characteristics than overall average measures suggest.

Second, although a few sociologists have broken down the broad Asian category and examined variations in the residential patterns of different Asian ethnic groups (e.g., Walton 2015, Hall 2013, Logan et al. 2002), these few studies have restricted generalizability beyond a few metropolitan areas or a limited number of immigrant gateway types. These studies have either developed theoretical ethnic neighborhood models for Asian ethnic groups in just New York, Los Angeles, and San Francisco, or they have primarily analyzed segregation patterns of Asian subgroups in the dichotomous categories of new versus traditional immigrant destinations. These limited geographic areas of study leave open a key substantive question: How do residential patterns vary across a diverse range of metropolitan areas that each have their own local historical, social, economic, political, and ecological characteristics? Indeed, previous studies have underscored the importance of the metropolitan structure in shaping residential segregation scores (White et al. 2003; Farley and Frey 1994). This major shortcoming in geographic variation means that the theoretical and conceptual contributions are very likely not going to be appropriately utilized beyond the three metropolitan areas (and perhaps some other metropolitan areas that share similar characteristics), or beyond the two types of immigrant gateways. This is particularly important because a large and increasing share of the Asian population are settling outside of these traditional immigrant gateways (Zhou and Xiong 2005).

In addition to these two shortcomings in the literature, current studies that have examined residential segregation levels of Asian groups in different immigrant gateways

have reached conflicting conclusions. Some scholars find that segregation is higher for Asians and immigrant groups in new destination metropolitan areas (e.g., Hall 2013), while others conclude that segregation is lower in new destination regions (e.g., Park and Iceland 2011). The divergence in depictions of settlement patterns likely reflects the diversity of experiences across groups and across different places, which needs to be further illuminated. Altogether, this research project is motivated by the importance of (a) understanding the residential patterns of the diverse Asian subgroups in order to improve the efforts to understand broader dynamics of inequality across groups, (b) addressing the major shortcomings of existing research, and (c) engaging in the ongoing debate regarding residential segregation experiences in new versus traditional destinations.

My research contributes to the literature in three important ways. First, I examine the residential patterns of various Asian ethnic groups rather than the pan-ethnic Asian American category – namely, Chinese, Asian Indian, Filipino, Vietnamese, Korean, and Japanese. This allows me to contribute to the rather limited volume of literature that differentiates across the distinct Asian subgroups, to develop theoretical frameworks on residential segregation that can be applied more appropriately to a diverse set of ethnic groups, and to help policy-makers effectively target different Asian subgroups that have various residential experiences.

Second, I examine such patterns in fifty-seven metropolitan areas across the United States, each categorized into one of seven different types of immigrant gateways. Through this classification of metropolitan areas, I extend previous studies by comparing and contrasting residential patterns across a wider range of geographic regions. This also allows me to contribute to the current discussion about the relationship between new immigrant destinations and residential segregation levels.

Third, I provide an updated analysis of the residential patterns of Asian ethnic groups in a wide set of metropolitan areas using 2010 decennial census data. With this contemporary

analysis, I can investigate the extent to which the theoretical ethnic neighborhood models in the literature, which were primarily developed using 1990 and 2000 census data, are relevant for understanding more contemporary residential patterns of Asian ethnic groups in different places. Given the rapidly changing structure of the Asian population and the increasing share of Asians living outside of traditional destinations, a more up-to-date understanding of the settlement experiences among these groups in different metropolitan areas is warranted. This project is ultimately guided by the following three research questions:

1) What are the residential patterns of various Asian ethnic groups in metropolitan areas?
2) To what extent, and how, do the residential patterns of distinct Asian ethnic groups vary across different types of immigrant gateways?
3) To what extent, and how, are the residential patterns that I find in my study consistent with the theoretical ethnic neighborhood models in existing literature?

In this paper, I first discuss the significance of studying residential patterns, the value of focusing on Asian ethnic groups, and the importance of examining different metropolitan areas. Then, I turn to current literature on residential patterns of Asian ethnic groups. In this section, I also provide an overview of the theoretical ethnic neighborhood models that guide my research, while hypothesizing for which groups and in which immigrant gateway types these neighborhoods are likely to appear. Next, I discuss the limitations of current literature. I then turn to the data and methodology of my study. Finally, I present my results and discuss the implications of my research in the discussion and conclusion section. For the remainder of this paper, I use "Asian ethnic groups," "Asian subgroups," and "Asian groups" interchangeably.

B. Significance of studying residential patterns

Understanding the contemporary layout of residential patterns of diverse Asian ethnic groups across the U.S. is a necessary first step to dive into further analyses about the evolution of Asian ethnic neighborhoods over time, the location attainment of Asians, and the neighborhood effects of living in ethnic neighborhoods for Asians and members of other racial or ethnic groups. Each of these areas has received little attention with regard to the diverse Asian population, leaving the field with an incomplete picture of residential patterns and dynamics across these diverse racial and ethnic groups in the country.

Neighborhoods, as a source of both opportunities and constraints (Park 1925), play a significant role in shaping an individual's life-course trajectories in diverse ways. The residential environment affects exposure to opportunities and risks, as well as access to resources and institutions, which in turn shape various aspects of one's life, such as academic achievement, health, cognitive skills, and income, among other things (Sharkey and Faber 2014). These contextual effects do not only happen at one point in time. Rather, racial inequality and stratification in these residential contexts are perpetuated across generations (Sharkey 2013). Given the significant effects of place of residence, developing an understanding of the contemporary residential patterns of all racial and ethnic groups in the population is clearly an important endeavor. I contribute to this effort by studying Asian ethnic groups, which are grossly under-studied despite their rising growth. Only with a descriptive, foundational understanding can scholars subsequently examine how individuals from diverse racial and ethnic groups sort into ethnic neighborhoods and the social repercussions for residing in these residential locations.

C. Significance of examining distinct Asian ethnic groups

One major goal of my project is to problematize the pan-ethnic Asian grouping that has been frequently used in social sciences studies. By and large, studies examining

residential patterns have used the pan-ethnic term of Asians or Asian Americans. According to these studies, relative to blacks and Hispanics, Asians have been and continue to be the least segregated from whites (Alba et al. 2000; Iceland 2009; Logan and Zhang 2013; Lee et al. 2014). Examining long-term trends, Asian Americans are at least as segregated or slightly more segregated from whites today as they were in 1980 (Iceland 2009; Logan and Zhang 2013). By using the pan-ethnic Asian American grouping, however, these studies have overlooked and masked the significant variations in residential patterns across Asian ethnic groups within the heterogeneous Asian umbrella category (Lee and Kye 2016). Specifically, in this growing population, there are six Asian ethnic groups with a total population of more than 500,000 across all metropolitan areas in the United States. Based on the 2010 U.S. decennial census, the six largest Asian ethnic groups, in descending order, are: Chinese, Asian Indian, Filipino, Vietnamese, Korean, and Japanese. The failure to account for differences across this diverse set of Asian ethnic groups means that the gamut of experiences of Asian groups, in particular those relegated to the lower rungs of the socioeconomic ladder, are largely ignored.

Understanding the differences in mode of entry, point in time arrival to the United States, circumstances in the origin countries, context of arrival to the U.S., and the availability of social and economic resources across Asian ethnic groups is critical for helping to understand variations in residential patterns across and within Asian groups. The insights gained from understanding how these forces influence Asian ethnic groups will also help future scholars understand the extent to which such factors affect the settlement dynamics and incorporation of other racial and ethnic groups. I thus summarize the historical and current immigration trends to the U.S. for each of the six Asian groups in my study in order to help (i) reinforce the diversity of immigration experiences across and

within Asian groups and (ii) contextualize the impact of group immigration differences on neighborhood arrangements and residential locations.

1. Chinese

Although small numbers of Chinese arrived in the U.S. in the early 19th century, the first large-scale wave of immigration from China occurred in 1849 during the Gold Rush in California (Yin 2007). Thousands of Chinese, mostly from Guangdong (Canton) Province, arrived in the U.S. not only to search for gold, but also to work as manual laborers, specifically in the construction of the First Transcontinental Railroad. From the onset of their arrival, Chinese immigrants faced discrimination. White laborers viewed Chinese immigrants as competition, which led to an anti-Chinese movement filled with resentment, hostility, and violence. Such resentment led to the enactment of the Chinese Exclusion Act in 1882, which prohibited immigration of Chinese laborers to the U.S. for 10 years. In 1892, the Chinese Exclusion Act was extended for another 10 years and then was made permanent in 1902. During this period, Chinese immigrants already living in the U.S. began to move east, settling predominantly in New York and Boston (White et al. 2003). The 1943 Magnuson Act repealed the Chinese Exclusion Act and allowed Chinese immigration flows to the United States for the first time since 1882, albeit only a national quota of 105 Chinese immigrants per year were allowed to enter. Although the repeal of the Chinese exclusion laws in 1943 opened a steady flow of Chinese immigration once again, the 1965 Immigration and Nationality Act marked the next major wave of immigration from different parts of China, including Taiwan and Hong Kong (Xie and Goyette 2005).

Today, Chinese Americans are a diverse ethnic group (Yin 2007) and the largest Asian subgroup in the United States, comprising approximately one quarter of the total number of Asians in the U.S. (Logan and Zhang 2013). Up until the 1940s, 90 percent of the Chinese

arriving from the People's Republic of China (PRC) to the U.S. came from the Pearl River Delta in Guangdong Province. They were predominantly poor immigrants arriving to work as manual laborers. In 2000, those coming from this region accounted for only 8 percent of immigrants from the PRC, with the rest coming from other parts of China (Yin 2007). Ethnic Chinese immigrants also now come from countries and regions outside of the PRC, including Taiwan, Hong Kong, Vietnam, the Caribbean, and South America (Yin 2007; Acolin and Vitiello 2018).

Moreover, since the implementation of the H-1B visa program[1] in 1990, a new wave of highly skilled and highly educated immigrants has arrived from China. As the second major source of foreign-workers receiving the H-1B visa, Chinese nationals accounted for 9 percent of the beneficiaries of H-1B visas in 2003 and again in 2017 (U.S. Citizenship and Immigration Services Annual Report 2006, 2018).

2. Asian Indians

A small number of immigrants from India started to arrive in the late 19th century, mostly settling in the West, such as California, and working in the agricultural sector. Prior to 1965, there were tight immigration laws that restricted the flow of Asian Indian immigrants. Since the passing of the 1965 Immigration and Nationality Act, immigration from the Indian subcontinent has grown dramatically. The post-1965 wave of immigrants from India was comprised largely of well-educated professionals (Leonard 2007). In particular, at the turn of the 21st century, a significant number of highly educated Indians have arrived on H-1B visas.

[1] The H-1B visa program allows employers in the United States to temporary employ highly educated foreign professionals in occupations that "require theoretical and practical application of a body of highly specialized knowledge and a bachelor's degree or higher in the specific specialty," according to the U.S. Citizenship and Immigration Services. Since 1990, this program has ushered in a new wave of highly skilled and highly educated foreign-born immigrants, especially working in the fields of science, technology, engineering, or mathematics (STEM). The creation of the H-1B visa program has shaped more recent waves of immigration, especially from Asian countries. In 2017, the top five receiving countries of H-1B visas were: India, China, Canada, Philippines, and South Korea.

Since at least 2003, Indian nationals have been the largest source of foreign workers under the H-1B visa program. In 2003, 79,000 Indians received H-1B visas, accounting for 36 percent of the total number of H-1B visas issued in that year. By 2017, the number of Indians with H-1B visas increased by more than threefold to 276,000, which was equivalent to 76 percent of the total number of H-1B visas issued in that year (U.S. Citizenship and Immigration Services Annual Report 2006, 2018).

3. Filipinos

The first wave of mass migration from the Philippines occurred in the late 19th century following the end of the Spanish-American war when the Philippines became an overseas territory of the United States. During this time, Filipinos were considered U.S. nationals and were free to migrate to the United States. Immigrants in this first wave were predominantly unskilled laborers and settled primarily in Hawaii and California, working in sugar plantations and the agricultural sector. Moreover, Filipinos arriving in the U.S. in the early 20th century included those enlisted in the United States Navy. These individuals who immigrated from the Philippines to the U.S. for military service were exempt from the national quota restriction of fifty Filipino immigrants per year, which was implemented by the Tydings-McDuffie Independence Act in 1934 (Espiritu and Wolf 2001).

The next major wave of immigrants from the Philippines occurred after the 1965 Immigration and Nationality Act. Many Filipino immigrants in this wave arrived as working professionals, mainly nurses, or to reunite with family members, who had arrived prior to 1965 as unskilled or semiskilled laborers (Espiritu and Wolf 2001; Choy 2007). Moreover, highly educated Filipino immigrants have recently started to arrive since the implementation of the H-1B visa program. Between 2001 and 2015, around 53,000 Filipinos have received

H-1B visas, representing 3 percent of H-1B visas issued during this time (Pew Research Center 2017b).

In contrast to immigrants from other Asian nations, Filipino immigrants arriving in the U.S. had more familiarity with American culture and a higher level of English language proficiency (Alba and Logan 1991; Zhou and Xiong 2005). The "Americanization" of Filipino culture through U.S. colonization, including the transition to an American-based educational system taught in English (Ling 2009), has helped to facilitate their integration into mainstream American society and the labor market (Zhou and Xiong 2005).

4. Vietnamese

Immigration flows from Vietnam to the U.S. remained low prior to 1970 (Xie and Goyette 2005). Before the South Vietnamese government collapsed in 1975, over 100,000 people were evacuated from the country. In general, Vietnamese refugees leaving before 1975 had more financial capital than the general Vietnamese population (Xie and Goyette 2005). After the communists captured Saigon in 1975, some Vietnamese left as political refugees with fewer capital than the first wave who fled the country (Xie and Goyette 2005). This second wave of refugees remained in refugee camps in the Philippines, Malaysia, and Thailand, and waited for years to be admitted to the United States. During this time in the refugee camps, children learned English but did not receive any other form of education (Xie and Goyette 2005).

Of the six largest Asian ethnic groups, Vietnamese are the most disadvantaged, resulting in higher unemployment rates, lower income levels, and lower levels of education (Logan and Zhang 2013). In the 1970s, Vietnamese refugees settled in dispersed places across the country due to the U.S. government's refugee placement policies (Rumbaut 2007). Starting in the 1980s and well into the 2000s, Vietnamese refugees arriving in the U.S. have

been able to settle in areas with family and kinship ties instead of being resettled by the government (Rumbaut 2007). Moreover, Vietnamese are the only group out of the six Asian ethnic groups that are not among the top 20 recipient countries of the H-1B visa program.

5. Koreans

Korean migration to the U.S. occurred in three waves (Ling 2009). The first wave, recorded in the early 20th century, was relatively small and comprised of laborers working on plantations in Hawaii or in mines and fisheries on the West coast. Approximately 40 percent of Korean immigrants in this first wave were Christians, building churches and establishing Christian associations in Hawaii (Xie and Goyette 2005). The second wave occurred after the Korean War and comprised mainly of war orphans or wives of American servicemen who were stationed in Korea during the war. The third wave started after the 1965 Immigration and Nationality Act, and predominantly consisted of middle-class professionals (Min 2007; Ling 2009). Since 2004, the number of H-1B visas received by Koreans has decreased from 8,100 to 3,300 in 2017 (U.S. Citizenship and Immigration Services Annual Report 2006, 2018).

Overall, many Korean Americans successfully run small businesses in retail or services industries, such as grocery and liquor stores, and dry cleaning and manicure services (Min 2007; Ling 2009; Laux and Thieme 2006). In addition, Koreans have maintained high levels of ethnic solidarity and ethnic attachment through church participation and entrepreneurship in small businesses (Min 2007; Ling 2009).

6. Japanese

Japanese arrived in the U.S. in the late 19th century as laborers, many working in the plantations in Hawaii. A number of Japanese immigrants, mostly men, moved to California,

where they established farms or businesses. Soon after establishing themselves, their wives and children back in Japan joined them. Compared to other Asian immigrants during this time, Japanese came to the U.S. to settle and raise their families. Given this intention, Japanese children attended American public schools and learned American culture (Xie and Goyette 2005).

Yet, their efforts to integrate into American society did not prevent discrimination. From early on, Japanese faced racial hostility, discrimination, and school segregation (Oishi 2007). Such discrimination led to the signing of the 1908 Gentlemen's Agreement between the U.S. and Japan to prevent Japanese laborers entering the U.S. in exchange for better treatment of Japanese Americans and for a solution to school segregation in San Francisco (Oishi 2007).

During World War II, almost 120,000 Japanese Americans in the U.S. mainland were sent to internment camps across the deserts in Arizona, California, Utah, Idaho, Colorado and Wyoming (Oishi 2007). This incident had a significant effect on Japanese community development and their ethnic identity (Oishi 2007). After the war, about 45 percent of Japanese Americans resettled outside the West coast. Those who returned to the West coast decided to reside in the suburbs rather than the Japanese urban enclaves known as Japantown or Nihonmachi because they feared anti-Japanese sentiments (Oishi 2007). Following the Immigration and Nationality Act of 1965, Japanese immigration numbers have remained low as Japan's economy was developed by then (Xie and Goyette 2005). Over the past few decades, the Japanese population size has declined slightly. Moreover, the number of highly-educated foreign-born Japanese immigrants receiving H-1B visas has decreased by 77 percent from 5,700 in 2003 to 1,300 in 2017 (U.S. Citizenship and Immigration Services Annual Report 2006, 2018).

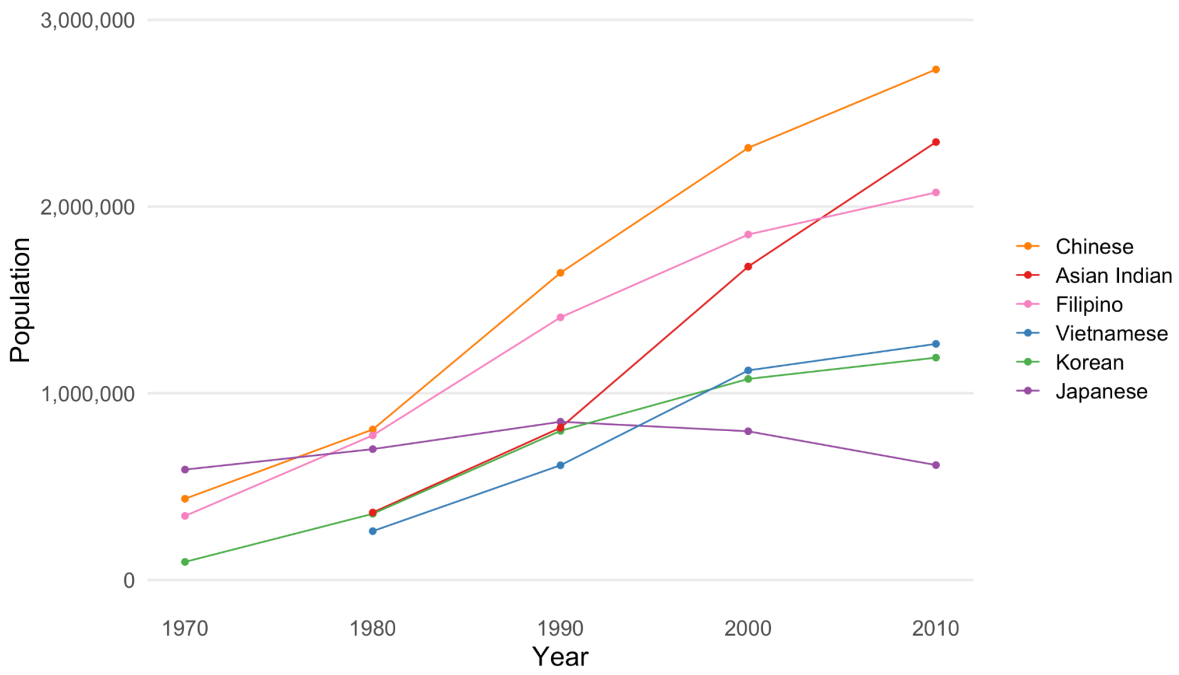

Figure 1. Population size of the six Asian ethnic groups in the U.S., 1970-2010. Note: the population size for Asian Indians and Vietnamese were not available in 1970. Source: U.S. Census Bureau

This overview of historical and current immigration trends underscores noteworthy differences and variations across and even within Asian ethnic groups. This background ultimately lays the foundation to help better understand how group differences, specifically with regard to immigration routes and contexts of arrival, have shaped neighborhood locations and arrangements. To summarize more recent population trends, Figure 1 shows how the population size of each group has grown or declined since the implementation of the Immigration and Nationality Act in 1965. Between 1970 and 2010, all Asian groups, except for Japanese, have seen increases in their population size in the U.S.

D. Significance of focusing on different metropolitan areas

The context of the local metropolitan area is important to consider when examining residential patterns (Charles 2003; White et al. 2003; Farley and Frey 1994). In the residential segregation literature, the ecological model stipulates that various metropolitan-level factors

– including but not limited to population size, housing stock, age of metropolitan area, and migration flows – influence settlement patterns and residential opportunities (Crowder et al. 2012; Kim and White 2010).

Given the growth of the immigrant population in the U.S. and their settling in newer regions, scholars have increasingly turned their attention to understanding differential residential segregation patterns among immigrant groups in old destinations, such as New York, versus new destinations, such as Atlanta. Given that immigration history and immigrant population size, coupled with the development of institutions to support immigrant populations, vary significantly across new and old immigration destinations (Waters and Jiminez 2005; Park and Iceland 2011), research has sought to understand differences in settlement experiences across gateways. Massey (2008) posits that older destinations have (i) well-established resources to buttress immigrant incorporation and (ii) a native-born population that are more accustomed to interacting with immigrants. In contrast, newer destinations lack the institutions that enable immigrant incorporation into mainstream society. In addition, the native population in newer metropolitan areas lacks familiarity with and exposure to immigrants (Massey 2008).

Nevertheless, scholars have reached diverging conclusions about whether the length of time a metropolitan area has received immigrants leads to a higher or a lower segregation pattern. Some scholars have found higher segregation in metropolitan areas that have recently started to receive immigrants. Hall (2013) found that Vietnamese and Korean immigrants are significantly more segregated in new destinations than in established ones. Moreover, these two aforementioned groups and Asian Indians are significantly more segregated in minor destinations than in established areas (Hall 2013). Lichter et al. (2010) buttress this argument by finding that Hispanics are highly segregated from native whites in new destinations compared to traditional destinations. On the other hand, Massey and Denton (1987) claim

that older metropolitan areas with an ecological structure that include "densely settled cores and thickly packed working-class neighborhoods" (p. 818) are more favorable for higher segregation levels. Indeed, Park and Iceland (2011) found that Hispanics and Asians in more established metropolitan areas, which have received immigrants for a longer period of time, experience higher levels of segregation than newer destinations. Moreover, other scholars have found that newer, smaller metropolitan areas with recent housing construction experience lower levels of segregation (Iceland et al. 2003; Farley and Frey 1994).

The conflicting findings across these studies could be attributed to the differing definitions of an established destination and a new gateway. For example, Hall (2013) defined an established metropolitan area as one where a group's percentage of the total metropolitan area was higher than the mean across all metropolitan areas in 1970 or 1980, and where the group's absolute metropolitan population size was higher than the metropolitan average; while a new gateway was defined as a metropolitan area where the group's percentage of the total population exceeded the metropolitan average in 1990 or 2000, and where the group's growth rate during the 1980s and 1990s was at least twice the corresponding metropolitan average. Similarly, Lichter et al. (2010) delineated an established place as one where the percentage Hispanic in a population exceeded 18 percent in 1990 and a new destination as a place that had a small Hispanic population in 1990 but rapidly grew after 1990. Both of these studies thus identified established destinations as ones with a high concentration of a group in the late 20th century. The drawback of these characterizations of established and new destinations is that these studies have failed to adequately differentiate between new and old waves of immigrants throughout the 20th century. For example, under Hall's (2013) definition, an established destination would include a metropolitan area that started to receive Vietnamese refugees in the 1970s and a metropolitan area that received Chinese immigrants in the early 1900s. These different waves of immigrants experienced

different resources and varying contexts of arrival, which could in turn result in varying residential experiences. As such, these differentiations would not be properly captured in Hall's (2013) study.

On the other hand, Park and Iceland (2011) have provided a more comprehensive definition of both established and new gateways than the aforementioned studies. By adopting Audrey Singer's (2004) gateway typology, Park and Iceland (2011) defined established gateways as metropolitan areas where the foreign-born share exceeded the national average for every decade in the 20th century or started to experience a higher than average immigrant population after World War II. New destinations are defined as metropolitan areas where the foreign-born population remained low until the 1970s and then experienced rapid growth from 1980 onwards (Park and Iceland 2011). Nevertheless, Park and Iceland (2011) simplify Singer's six-categorical typology into three categories. As such, they overlook potential key differences across different gateways that are collapsed into one category. Moreover, Park and Iceland (2011) only focus on the pan-ethnic groupings of Hispanic and Asian, thereby overlooking the variations within these broad categories.

Ultimately, previous studies have highlighted how residential patterns vary significantly across different types of immigrant gateways that have varying ecological structures. Accounting for the context of the local metropolitan areas is thus important for understanding settlement dynamics of groups. Moreover, the lack of agreement among scholars about whether segregation is higher or lower in newer destinations relative to traditional gateways indicates that further research is needed in this area to help resolve the debate. One goal of this study is thus to contribute to this ongoing discussion in the literature about segregation patterns in newer versus more traditional destinations.

E. Current literature on the residential patterns across distinct Asian groups

Although many studies on residential patterns have focused on the pan-ethnic Asian grouping, some studies have broken down the single racial category into distinct Asian ethnic groups. The studies that differentiate between different Asian groups could be divided into two separate bodies of literature, discerned by their methodology. One set of literature employs ethnographic fieldwork to identify the characteristics and formation of ethnic neighborhoods of a specific Asian ethnic group in a certain metropolitan area. These rich ethnographies tend to focus on the residential, cultural, commercial, and economic dynamics of a particular neighborhood in an urban area, such as Chinatowns (Zhou 1995). Although such ethnographies are insightful, they suffer from questionable external validity. That is, these ethnographies are limited to the extent that they primarily focus on one Asian ethnic group in a single city.

The other group of literature, which distinguishes between Asian subgroups, follows a quantitative approach. These studies largely use segregation indices to understand the residential patterns of distinct Asian ethnic groups. Within this set of literature, scholars have followed two trajectories – using either "global" measures of segregation or "local" measures of segregation.

1. Studies of distinct Asian ethnic groups using "global" segregation measures

One group of scholars has examined the residential patterns of distinct Asian subgroups using "global" measures of segregation, specifically the dissimilarity and isolation indexes. These indices are considered "global" in nature because they tend to capture residential patterns at the aggregate scale, specifically at the metropolitan-level.

In an average metropolitan area, segregation from whites, using the dissimilarity index, varies across distinct Asian groups (White et al. 2003; Logan and Zhang 2013). Logan and Zhang (2013) found that, averaged across all metropolitan areas in the U.S., the dissimilarity

scores of distinct Asian groups from whites ranged from 0.336 for Japanese to 0.558 for Vietnamese. Japanese was the only group out of the six Asian ethnic groups that had a segregation level lower than the overall Asian pan-ethnic segregation measure of 0.407. Moreover, the average segregation for Vietnamese from whites in 2010 (dissimilarity score = 0.558) was slightly below the average black-white segregation level (dissimilarity score = 0.591). And Chinese and Indians recorded higher average levels of segregation in 2010 (0.487 and 0.492, respectively) than Hispanics with an average segregation score from whites of 0.485 in 2010. Clearly, there are significant variations in residential segregation levels across different Asian groups, some of which are comparable to the residential experiences of blacks and Hispanics.

2. Studies of distinct Asian ethnic groups using "local" segregation measures

The other group of scholars that have differentiated between Asian ethnic groups have quantitatively examined residential patterns using "local" measures of segregation. These scholars claim that studies using dissimilarity and isolation segregation indexes suffer from two disadvantages. First, measures of evenness and exposure, specifically the dissimilarity and isolation indexes, are considered "aspatial" (Reardon and O'Sullivan 2004:122). As illustrated with the "checkerboard problem" (for explanation, see White 1983; Reardon and O'Sullivan 2004), neither of the two measures consider the spatial relationships of neighborhoods or the composition of nearby neighborhoods (White 1983; Reardon and O'Sullivan 2004; Brown and Chung 2006). Second, due to the global characteristic of the dissimilarity index, it glosses over local variation in residential patterns within metropolitan areas (Brown and Chung 2006) and fails to account for other factors at the individual- or household-level that can affect neighborhood patterns (Alba et al. 2000). Overlooking the local-level measures of segregation prevents scholars from capturing the "richness in spatial

variation" (Brown and Chung 2006:125), which is necessary for understanding residential dynamics and patterns of ethnic groups.

In response to criticisms about global measures of residential segregation, a few scholars have harnessed the spatial measures of segregation to study ethnic neighborhoods of distinct Asian ethnic groups at the local-level. Specifically, these scholars have used census data to conceptualize ethnic neighborhoods along two commonly used dimensions of segregation: concentration and spatial clustering (Logan et al. 2002; Walton 2015). In contrast to segregation measures of evenness and exposure, which are considered "aspatial" (Reardon and O'Sullivan 2004:122), both concentration and clustering encompass a spatial dimension (White 1983; Reardon and O'Sullivan 2004). That is, concentration refers to the density of a group in a small physical area, while clustering refers to members of a racial or ethnic group living in close proximity to other members, thereby forming a single, contiguous, and large enclave (Massey and Denton 1988). Only a small number of studies (e.g., Logan et al. 2002; Wen et al. 2009; Walton 2015) have utilized these concentration and/or clustering concepts to understand residential patterns of distinct Asian ethnic groups. These studies have articulated and developed ethnic neighborhood models harnessing the clustering dimension. I describe these theoretical ethnic neighborhood models in the following section.

F. Theoretical ethnic neighborhood models

Studies that have analyzed residential patterns of Asian ethnic groups (Logan et al. 2002; Wen et al. 2009; Walton 2015) present three theoretical ethnic neighborhood models. The three models are: (1) immigrant enclave (Logan et al. 2002); (2) community of constraint (Walton 2015); (3) and resurgent community (Walton 2015) or ethnic community (Logan et al. 2002). In addition to these three models, I include a fourth model, the global neighborhood

(Logan and Zhang 2010), in my analysis, which has not been used in previous studies to understand settlement dynamics among Asian groups. Altogether, these four models guide my analysis on Asian residential patterns. I now describe each of these models, as well as hypothesize for which Asian group each neighborhood model is likely to reflect their settlement pattern and in which immigrant gateway type each neighborhood model is likely to emerge.

1. Immigrant enclave

An immigrant enclave[2] is the predominant type of ethnic neighborhood that was first identified using the urban ecology framework developed by the Chicago School in the 1920s (Logan et al. 2002). The immigrant enclave model is the starting point in the traditional spatial assimilation framework (Massey and Denton 1985) where immigrant groups first settle because they have limited resources and are more comfortable living with co-ethnics to access cultural, economic, and language support (Wilson and Portes 1980; Iceland 2009). Traditionally, immigrant enclaves are defined as "transitional neighborhoods" (Logan et al. 2002:299), typically home to foreign-born immigrants, with limited English proficiency, fewer years of education, and lower economic means (Logan et al. 2002, Walton 2015). Once immigrant groups make gains in education, occupational attainment, income, and English-language proficiency, they are more likely to pursue better residential opportunities. They would then move out of immigrant enclaves and into neighborhoods that are occupied by members of the dominant racial/ethnic group (Massey and Denton 1985; South et al. 2005; Lee et al. 2014).

[2] This immigrant enclave model is primarily a residential ethnic neighborhood, which stands in contrast to an ethnic enclave. The latter is a distinct ethnic economy and entails "the spatial concentration of immigrants who organize a variety of enterprises to serve their own ethnic market and the general population" (Portes and Bach 1985:203).

Accordingly, immigrant enclaves are more likely to characterize the settlement patterns of more recent arrivals with low socioeconomic status and poor resources, specifically Vietnamese. Given their more recent migration to the U.S. in the 1970s, their context of arrival as refugees, and their limited economic, social, and cultural resources upon arrival, Vietnamese are more likely than other Asian ethnic groups to settle in neighborhoods that resemble immigrant enclaves. Indeed, Walton (2015) found that about half of the Vietnamese ethnic neighborhoods in California were characterized as immigrant enclaves.

Moreover, I hypothesize that immigrant enclaves are also likely to appear among some Chinese ethnic neighborhoods. In particular, traditional Chinatowns are likely to be characterized as immigrant enclaves because they have already developed well-established institutions, support systems, social networks, and language resources, which recently arrived immigrants with few means can find valuable. In this regard, Chinatowns can be considered "transitional" neighborhoods for immigrant groups to the extent that once foreign-born immigrants gain more social, human, and financial capital they "transition" out of Chinatowns into other neighborhoods. Indeed, in New York, Chinese ethnic neighborhoods are primarily identified as immigrant enclaves, with no ethnic neighborhoods found in the suburbs (Logan et al. 2002).

In contrast, I do not expect to find immigrant enclaves among Indian and Japanese ethnic neighborhoods. Waves of Indian immigrants have primarily comprised of highly educated individuals, especially since the creation of the H-1B visa program, which suggests that few foreign-born Indians have low socioeconomic status and would reside in neighborhoods that resemble immigrant enclaves. The effects of post-World War 2 (WW2) on Japanese settlement patterns in the suburbs and outside of urban Japantowns, in combination with the declining flow of Japanese immigrants since the mid-20th century,

suggests foreign-born Japanese neighborhoods, including immigrant enclaves, are less likely to exist in general.

Immigrant enclaves are more likely to appear in metropolitan areas that either have continuously received immigrant populations or at least had high shares of immigrant populations in the past and recently started to receive immigrants again. These metropolitan areas have experienced a longer history of receiving immigrants. As a result, organizations that provide resources and services in languages other than English, as well as social networks, kin, and neighbors who share similar cultural familiarity and language, are more likely to be accessible and well-established in these regions for recent arrivals with limited human and financial capital (Massey and Denton 1987; Alba and Nee 1997).

Nonetheless, since the late 20th century, a number of scholars (e.g., Alba and Nee 1997; Logan et al. 2002; Alba et al. 2014) have questioned the pertinence of the spatial assimilation perspective and, in turn, the relevance of the immigrant enclave model. The spatial assimilation framework was created on the basis of the experiences of predominantly European-origin immigrants arriving in the U.S. in the late 19th century (Logan et al. 2002; South et al. 2005). Critics have questioned the applicability of this perspective in the contemporary era due to the influx of Latino and Asian immigrant groups (Betancur 1996; Logan et al. 2002). First, Latino groups have experienced more discrimination, prejudice, and marginalization than their European counterparts. This experience, in turn, limits their ability to mobilize upwards in terms of socioeconomic and residential status (Betancur 1996). Second, the spatial assimilation perspective was developed on the premise that immigrants arrived in the U.S. with little economic means, which was predominantly the case in the late 19th century (Logan et al. 2002). However, since the late 20th century, some immigrant groups have arrived in the U.S. with high levels of human and financial capital, such as Asian Indians (Logan et al. 2002). These trends of Latino and Asian immigrant groups thus diverge

from the classical spatial assimilation perspective and, to some extent, distort the traditional meaning of the immigrant enclave as a transitional neighborhood where immigrants with limited resources first settle. These critiques led to the development of two neighborhood models that follow alternative frameworks: "community of constraint" and "resurgent community".

2. *Community of constraint*

A community of constraint (Walton 2015) model was developed on the basis of the downward mobility path of segmented assimilation and the place stratification theory. First, the segmented assimilation perspective suggests that different individual- and group-level factors, such as low socioeconomic status, shape different trajectories of immigrant incorporation, especially for second-generation immigrants (Portes and Zhou 1993). In contrast to the classical assimilation theory, which posits upward mobility and eventual integration with the dominant racial/ethnic group, the segmented assimilation perspective suggests there are three possible trajectories for immigrants. A first pathway follows the spatial assimilation theory whereby immigrant and ethnic groups gain upward economic and social mobility, acculturate, and integrate into the white middle-class. A second route leads in the opposite direction to downward mobility, permanent poverty, and eventual assimilation into an urban underclass (Portes and Zhou 1993; Zhou 1997). The third track entails economic advancement in relatively isolated immigrant communities with "deliberate preservation of the immigrant community's values and tight solidarity" (Portes and Zhou 1993:82). A community of constraint follows the second trajectory of segmented assimilation toward downward mobility.

Second, another key framework that shapes living in a community of constraint is the place stratification theory (Alba and Logan 1991). This theory posits that racial and ethnic

minorities face prejudice and discrimination from members of the majority racial/ethnic group and institutions. This in turn prohibits residential integration and limits residential mobility possibilities (Charles 2003; Pais, South, and Crowder 2012). Racial and ethnic minorities could be discriminated against either by real estate agents during housing market transactions or by members of the majority racial group who avoid neighborhoods where minorities reside (Massey and Denton 1993). Equally as significant as discriminatory action is the concept of "white flight" (Farley et al. 1997), whereby whites are increasingly likely to move out of a neighborhood with growing minority and immigrant populations (Crowder et al. 2011; Pais et al. 2009). Given that the majority of Asian population is foreign-born, these findings suggest that white flight may be occurring in Asian neighborhoods.

Both the place stratification framework and the downward mobility trajectory of segmented assimilation suggest that ethnic minorities, in particular second-generation, are relegated to disadvantaged, underprivileged, isolated, and constrained neighborhoods where members of the majority racial group do not live. In these communities of constraint, native-born immigrants and ethnic minorities come into contact with members of other immigrant and ethnic minority groups, who are more likely to be poor, thereby limiting opportunities for assimilation (Zhou 1997). This outcome, whereby immigrants do not attain socioeconomic or residential gains, thus diverges from the spatial assimilation perspective, which claims that, over time, immigrants achieve economic advancement and then integrate into residential spaces with the majority racial group.

The community of constraint model is particularly applicable to studying native-born, second-generation groups that have lower levels of financial capital and education. I expect to find a few communities of constraint among Vietnamese ethnic neighborhoods. Native-born second-generation Vietnamese are likely to follow the segmented assimilation trajectory (Bankston and Zhou 1997), especially given that their foreign-born first-generation parents

arrived with few resources, financial capital, and human capital. This cohort of Vietnamese are thus more likely to have grown up in resource-poor neighborhoods where the government placed their families. Indeed, in California, Walton (2015) found that seven out of nineteen Vietnamese neighborhoods were classified as communities of constraint.

Communities of constraint are more likely to surface in metropolitan areas that have higher shares of Vietnamese, as well as in traditional gateways, which are metropolitan areas that have a longer history of receiving immigrants and minority groups. These traditional metropolitan areas are more likely to have enforced institutionalized discriminatory practices of redlining against minority and immigrant groups. The consequences of such structural segregation in these metropolitan areas may have persisted over time, which suggests that communities of constraint are more likely to emerge in these regions.

3. Resurgent community

A resurgent community model follows the resurgent ethnicity perspective or ethnic retention approach (Walton 2015). These perspectives follow the in-group hypothesis that stresses preference, choice, and desire to live with co-ethnics instead of with members of the majority racial group (Wen et al. 2009; Kim and White 2010; Walton 2015). Such spatial behavior of ethnic minorities to reside with members of their same group arises not from economic limitations, as signified in an immigrant enclave, or racial discrimination, as suggested in a community of constraint. Rather, a resurgent community departs from the two aforementioned theoretical neighborhood models in two ways. First, foreign-born immigrants who enter the U.S. with high financial capital and market resources are not constrained by economic means and they thus may prefer to reside with members of their own ethnic group due to cultural familiarity or shared understanding through language, religion, and history (Logan et al. 2002; Kim and White 2010). Second, another way the resurgent community

differs from the immigrant enclave and community of constraint models is that native-born groups choose to stay in these ethnic neighborhoods despite social mobility and economic advancement in mainstream society (Logan et al. 2002; Walton 2012). In this respect, the resurgent ethnicity perspective also parallels the third pathway of segmented assimilation, whereby immigrants choose to live with co-ethnics and to preserve the immigrant community's values despite attaining improved socioeconomic status.

Logan et al. (2002), who were the first scholars to articulate the resurgent ethnicity framework, developed the "ethnic community" model, which is synonymous to the resurgent community model. They referred to this type of neighborhood model as "ethnic neighborhoods that are selected as living environments by those who have wider options based on their market resources" (Logan et al. 2002:300). According to their definition, both immigrant enclaves and ethnic communities are considered as ethnic neighborhoods. The degree to which three economic variables – income, employment, and housing tenure – conform to the spatial assimilation model are the distinguishing factors between residing in an immigrant enclave and an ethnic community (Logan et al. 2002). Specifically, those who live in ethnic neighborhoods, yet have higher income, are employed outside the ethnic sector, or own a house, are classified as living in an ethnic community (Logan et al. 2002).

Accordingly, resurgent community (Walton 2015) and ethnic community (Logan et al. 2002) encompass processes from both the resurgent ethnicity perspective and the third pathway of segmented assimilation. Specifically, immigrants with high socioeconomic status choose and prefer to live in these neighborhoods with co-ethnics. For the remainder of this paper, I use "resurgent community" to reference this type of neighborhood.

The resurgent community, which embodies the resurgent ethnicity framework, is likely to be relevant for all Asian ethnic neighborhoods, except for Vietnamese neighborhoods. For Indians, the 1965 Immigration and Nationality Act and the H-1B visa program have produced

a flow of highly educated professionals. These groups have the financial and cultural capital to reside in neighborhoods with the majority-white population, yet they may choose to live with co-ethnics perhaps due to shared cultural understanding (Logan et al. 2002; Kim and White 2010). Nevertheless, previous research has found conflicting depictions of Indian neighborhood patterns. In New York, the ethnic neighborhoods that Asian Indians reside in with co-ethnics comprise of homeowners who work outside the enclave labor market, which reflects the ethnic community model. However, they are also home to those with lower income, which parallels the immigrant enclave model (Logan et al. 2002).

Similar to Indian immigrants, a noteworthy flow of highly educated and high socioeconomic status Chinese immigrants have arrived since 1965 and since the implementation of the H-1B visa program. These immigrants have the economic means to choose where to reside and they thus are likely to settle in neighborhoods that resemble the resurgent community model. However, noting the diversity in socioeconomic characteristics, point of arrival, and migration routes among the Chinese immigrant population, several scholars have observed a bi-modal distribution pattern of Chinese residences, specifically in California, which has resulted in an "uptown" and "downtown" phenomenon (Walton 2015, Yin 2007). The former refers to professional and affluent Chinese who are more likely to reside in the suburbs and to integrate into mainstream society, while the latter signifies working-class immigrants who are more likely to reside in "poverty-stricken urban ghettos" (Yin 2007:346) with limited resources. The resurgent ethnicity model is likely to resemble the "uptown" neighborhoods, while the immigrant enclave model is likely to characterize the "downtown" neighborhoods.

The history of Filipino migration to the U.S., with the Philippines being a former American colony, has resulted in generally more positive residential outcomes. In New York, Filipinos are the only ethnic group that fit the ethnic community model (Logan et al. 2002).

Resurgent communities have also been discovered among Filipino neighborhoods in California. In Logan et al.'s (2002) study, Filipinos fit the ethnic community model in Los Angeles. Similarly, Walton (2017) found that Filipinos in California are mostly living in more affluent ethnic neighborhoods.

Japanese neighborhoods are also likely to exhibit characteristics similar to the resurgent community model. Given that Japanese were one of the earliest Asian ethnic groups to arrive in the U.S., in the late 1800s, and that their immigration numbers have decreased since the end of WW2, they are the only Asian group that is majority native-born. Japanese, specifically those that are native-born, are more likely to have higher levels of cultural capital, including English-language proficiency and familiarity with the American culture. As such, the resurgent community model appears to capture these attributes of Japanese. Nonetheless, given these characteristics of the Japanese group, Logan et al. (2002) found that Japanese and their associated residential patterns are considered an "exceptional case" (p. 319). In Los Angeles in 1990, Japanese ethnic neighborhoods were indistinguishable from non-ethnic neighborhoods (Logan et al. 2002). 56 percent of Japanese in ethnic neighborhoods spoke only English, while 58 percent in non-ethnic neighborhoods did. In addition, in both ethnic and non-ethnic neighborhoods, 31 percent of Japanese were immigrants. By contrast, ethnic neighborhoods of other immigrant groups in Los Angeles in 1990 were differentiated from non-ethnic neighborhoods by having lower shares of those speaking only English and higher shares of immigrants (Logan et al. 2002). As such, I may find a pattern of resurgent communities among Japanese ethnic neighborhoods, as well as a generally unique quality of Japanese ethnic neighborhoods.

Finally, I expect many Korean ethnic neighborhoods to be characterized as resurgent communities. Their characteristics of prosperous entrepreneurship and ethnic solidarity suggest that Koreans are likely to reside in resurgent communities where a high percentage of

affluent and fairly fluent English speakers live. Indeed, Walton (2015) found that a majority of Korean American ethnic neighborhoods in California (12 out of 16) are categorized as resurgent communities.

Furthermore, I hypothesize that resurgent communities are more likely to appear in metropolitan areas that have received a large proportion of immigrants from the 1960s onwards, specifically after the enactment of the 1965 Immigration and Nationality Act and the implementation of the H-1B visa program. These two events, in particular, are key turning points that have led to a surge in highly-skilled professional Asian immigrants, who are more likely to reside in resurgent community types of neighborhoods. To summarize the three theoretical ethnic neighborhood models in the literature, Table 1 below provides an overview of the differences in neighborhood characteristics across the three theoretical ethnic neighborhood models.

Table 1. Summary of theoretical neighborhood models

Characteristic	Immigrant enclave	Community of constraint	Resurgent community
Socioeconomic status	Low	Low	High
English-language proficiency	Low	High	High
Nativity	Foreign	Native	Foreign/Native

4. Global neighborhood

A multi-ethnic neighborhood model considers how the continuing growth of immigrant groups from Asia and Latin America is reshaping the racial and ethnic boundaries, particularly in the residential space (Parisi et al. 2015). Neighborhoods are becoming increasingly integrated and diverse with multiple racial and ethnic groups residing together (Denton and Massey 1991; Fong and Shibuya 2005; Wen et al. 2009; Farrell and Lee 2011).

Logan and Zhang (2010) developed a "global neighborhood" model to capture this multi-ethnic neighborhood concept. Global neighborhoods are "neighborhoods where the simple place categories of predominantly white, predominantly black, or racially mixed are no longer adequate" (Logan and Zhang 2010:2). This model encompasses the emergence of neighborhoods with concentrations of individuals from four racial groups: whites, blacks, Hispanics, and Asians. Through their analysis of global neighborhoods across 24 metropolitan regions[3], Logan and Zhang (2010) found that "the all-white neighborhood is becoming a relic of the past" (p. 19), as many whites, Asians, Hispanics, and blacks are living in diverse neighborhoods.

In these multiethnic neighborhoods, Asians and Hispanics serve as a "buffer" between residences of whites and blacks (Farley and Frey 1994). According to the buffering hypothesis, the presence of Hispanics and Asians facilitates black entry into a neighborhood where whites remain (Denton and Massey 1991; Iceland 2009), which leads to steady declines in residential segregation over time (Farley and Frey 1994; Logan and Zhang 2010; Parisi et al. 2015). However, there is also evidence of continued white flight in such global neighborhoods. Whites are more likely to leave neighborhoods with more blacks, Hispanics or Asians, which suggests there may be a new type of residential zone with increasing numbers of minorities where whites are unlikely to reside (Logan and Zhang 2010).

Although this neighborhood model has not been used thus far to understand the residential patterns of distinct Asian ethnic groups, I believe it is a useful theoretical model to consider in an increasingly diverse society. This is a particularly instructive model to describe neighborhoods in metropolitan areas that are home to a sizeable population of racial and ethnic minorities and where segregation levels are relatively high. In these diverse and

[3] The 24 metropolitan areas selected to be in Logan and Zhang's (2010) study had to meet the following criteria: at least two minority groups in the metropolitan area were either the same as or above their average national levels and a third minority group was either the same as or above one-half of their average national level in 1980, 1990, and 2000.

segregated metropolitan areas, there are more opportunities for these global- and buffer-neighborhoods to develop between highly segregated groups. In addition, I hypothesize that the global neighborhood model is more relevant for understanding the lived experiences of Asian ethnic groups that are more likely to interact with non-Hispanic blacks and Hispanics. Specifically, since Vietnamese arrived in the U.S. as refugees and were placed in neighborhoods by government policies, they are more likely to reside in multiethnic neighborhoods, alongside other racial and ethnic minorities. For example, in Seattle, WA, some Vietnamese refugees were placed in a neighborhood called High Point, which, during the late 20th century and early 21st century, was home to non-Hispanic blacks, Hispanics, and other Asian ethnic groups, including Cambodians.

In sum, these four theoretical ethnic neighborhood models form the crux of the analytical framework for addressing my third research question. Given that these theoretical neighborhood models were primarily developed in three metropolitan areas, using 1990 and 2000 census data (Walton 2015; Logan et al. 2002), my third research question assesses the extent to which the theoretical neighborhood models emerge in contemporary residential patterns of Asian groups across fifty-seven metropolitan areas.

G. Limitations of current literature

The current literature on Asian ethnic neighborhoods suffers from three limitations. First and foremost, residential patterns have largely been examined in a few metropolitan areas or a few immigrant destinations. Specifically, the dissimilarity patterns have predominantly been analyzed in new and traditional immigrant gateways. Similarly, the theoretical ethnic neighborhood models have primarily been developed and tested in large metropolitan areas that have served as traditional immigrant gateways, specifically New York, Los Angeles, and San Francisco (Logan et al. 2002; Walton 2015). The residential

patterns of Asian ethnic minorities and immigrant groups in other gateways and metropolitan areas across the country have generally been disregarded. Given that residential patterns are dispersed unevenly across various geographic places (Lee et al. 2014; Parisi et al. 2015), studies need to shed more light on such patterns in other areas besides the oft-studied large metropolitan areas. In other words, empirical works need to incorporate "spatial inclusivity" (Parisi et al. 2015:153). By accounting for spatial inclusivity, scholars will be able to build more comprehensive theoretical frameworks. Moreover, the ecological, social, economic, and political structures (Crowder et al. 2012), as well as place-specific local history of racial exclusion policies (Hall 2013) and integration contexts of subgroups (Crul 2016), vary widely across metropolitan areas. Such variations can significantly influence the development of and changes in neighborhood dynamics.

Second, the studies are generally outdated – Logan et al. (2002) used 1990 decennial census data, while Walton (2015) used 2000 decennial census data to examine ethnic neighborhoods. Although Walton (2017) examined ethnic neighborhoods of four Asian groups using 2010 decennial census data, she only assessed these patterns in California, which ties back to the first limitation of current studies.

This generally outdated picture of Asian residential patterns is cause for concern, given two recent significant trends in the Asian population. First, over the past thirty years, residential isolation among Asians in the U.S. has increased (Krysan and Crowder 2017). This means that the average Asian American in metropolitan areas is residing in a neighborhood in which the share of Asian residents in that neighborhood has risen from 1980 to 2010 (Krysan and Crowder 2017). Second, since 2000, Asians have been the fastest growing major racial or ethnic group in the U.S. (Pew Research Center 2017a). This drastically changing landscape of Asian neighborhoods and the effects of these shifts for the growing number of Asians across the country have not been documented or studied.

Moreover, sociologists do not know which specific Asian subgroups are residing in increasingly isolated neighborhoods and how they are faring in these changing residential spaces. An up-to-date understanding of Asian residential patterns for different Asian ethnic groups across different metropolitan areas is thus warranted.

Third, the ethnic neighborhood studies have primarily focused on the concentration and clustering of single Asian ethnic groups. They have overlooked experiences and exposures to other racial and ethnic groups within the neighborhoods. Such oversight leaves open a few questions, such as to what extent are Asian ethnic groups residing in neighborhoods with other racial and ethnic groups; with whom are Asian ethnic groups sharing neighborhoods; and which Asian ethnic groups show higher proportions of such spatial patterns?

As such, this study addresses the limitations described above in three key ways. First, this study focuses on fifty-seven metropolitans, which allows me to achieve broader generalizability beyond the three oft-studied metropolitan areas. These metropolitan areas are also categorized within seven different immigrant gateways, thereby allowing me to examine spatial patterns beyond the common dichotomy of new versus traditional immigrant destinations. Examining seven different types of immigrant destinations also allows me to contribute to the current debate in the literature about whether segregation is more or less extreme in newer destinations. Second, I use more recent data to investigate Asian ethnic neighborhoods, thereby providing a more up-to-date picture of residential patterns. And third, this study examines the neighborhood dynamics with other racial and ethnic groups, including non-Hispanic whites, non-Hispanic blacks, and Hispanics, in ethnic neighborhoods. Ultimately, through my research, I provide novel insights about the more contemporary residential dynamics of under-studied Asian minority groups in a diverse set of metropolitan areas. Only then can we better understand the extent to which residential experiences are not a phenomenon transpiring only in large segregated metropolitan areas that serve as traditional

immigrant gateways, but rather a complex and multidimensional concept occurring across and within racial and ethnic groups in geographical spaces with different historical and ecological contexts.

H. Data and methodology

I use the 2010 U.S. decennial census data, combined with 2006-2010 American Community Survey (ACS) data, to analyze residential patterns of Asian ethnic groups. Given that I would like to understand as much of the residential experiences of the diverse Asian population in the U.S. as possible, including those from smaller Asian groups, the decennial census data is the most appropriate option. The decennial census provides the counts for the population, capturing those of smaller Asian ethnic groups. The 2006-2010 ACS data provides neighborhood characteristics, including median income, education, nativity, and English-language proficiency of residents. These neighborhood characteristics inform the neighborhood models that I utilize to answer my third research question. Since the ACS uses the latest available geographic boundaries, it was imperative for me to use the 2006-2010 ACS data for neighborhood features since I used 2010 decennial census to identify ethnic neighborhoods by group concentration. That way, I am consistently using 2010 geographic boundaries.

In my study, I examine the "Asian alone" population. That is, I only account for individuals who reported a single race in the Asian category and no other race in the census survey. Using Asian alone population counts means I only incorporate those who are exclusively from a single Asian ethnic group, which allows me to be as parsimonious as

possible. My choice of using Asian alone is also based on theoretical assumptions and implications, as well as findings from previous research.[4]

1. Study area

This study explores Asian ethnic neighborhoods in fifty-seven metropolitan areas,[5] which are the largest metropolitan areas in the United States that have had or continue to have above-average foreign-born populations. This selection of metropolitan areas is based on Singer's (2015) immigrant gateway typology, which identifies seven different types of immigrant gateways based on the size of foreign-born populations[6] in metropolitan areas throughout the 20th century (see Appendix B for detailed descriptions of each immigrant gateway type). Table 2 presents the metropolitan areas that are part of each gateway and provides the total Asian population size for each metropolitan area.

Table 2. Categorization of metropolitan areas in each immigrant gateway type, as defined by Audrey Singer (2015), and the total Asian population in each metropolitan area

Immigrant Gateway	Metropolitan Area	Total Asians
Former	Detroit-Warren-Livonia, MI Metro Area	139,219
Former	St. Louis, MO-IL Metro Area	58,919
Former	Milwaukee-Waukesha-West Allis, WI Metro Area	45,247
Former	Pittsburgh, PA Metro Area	40,246
Former	Cleveland-Elyria-Mentor, OH Metro Area	39,887
Former	Providence-New Bedford-Fall River, RI-MA Metro Area	39,399
Former	Buffalo-Niagara Falls, NY Metro Area	25,186
Major-Continuous	New York-Northern New Jersey-Long Island, NY-NJ-PA Metro Area	1,846,050
Major-Continuous	San Francisco-Oakland-Fremont, CA Metro Area	977,425
Major-Continuous	Chicago-Joliet-Naperville, IL-IN-WI Metro Area	523,463
Major-Continuous	Boston-Cambridge-Quincy, MA-NH Metro Area	288,297
Minor-Continuous	Honolulu, HI Metro Area	383,534

[4] I analyzed the results for both "Asian alone" and "Asian alone or in combination," and found that the results are substantially equivalent. Please see Appendix A for more details on the theoretical reasoning for using Asian alone.

[5] The metropolitan areas follow the U.S. Census Bureau December 2009 delineation of Metropolitan Statistical Areas.

[6] Singer (2015) uses foreign-born populations of all races and ethnicities to delineate her typology.

Minor-Continuous	Stockton, CA Metro Area	95,865
Minor-Continuous	Fresno, CA Metro Area	87,693
Minor-Continuous	Oxnard-Thousand Oaks-Ventura, CA Metro Area	54,116
Minor-Continuous	Hartford-West Hartford-East Hartford, CT Metro Area	46,510
Minor-Continuous	San Antonio-New Braunfels, TX Metro Area	44,318
Minor-Continuous	Bridgeport-Stamford-Norwalk, CT Metro Area	41,393
Minor-Continuous	Bakersfield-Delano, CA Metro Area	34,236
Minor-Continuous	Worcester, MA Metro Area	31,207
Minor-Continuous	New Haven-Milford, CT Metro Area	29,670
Minor-Continuous	Rochester, NY Metro Area	26,237
Minor-Continuous	Modesto, CA Metro Area	25,447
Minor-Continuous	Tucson, AZ Metro Area	25,042
Minor-Continuous	El Paso, TX Metro Area	8,164
Minor-Continuous	McAllen-Edinburg-Mission, TX Metro Area	7,383
Post WW2	Los Angeles-Long Beach-Santa Ana, CA Metro Area	1,828,195
Post WW2	Washington-Arlington-Alexandria, DC-VA-MD-WV Metro Area	507,290
Post WW2	Houston-Sugar Land-Baytown, TX Metro Area	381,228
Post WW2	Dallas-Fort Worth-Arlington, TX Metro Area	334,921
Post WW2	San Diego-Carlsbad-San Marcos, CA Metro Area	327,356
Post WW2	Riverside-San Bernardino-Ontario, CA Metro Area	251,264
Post WW2	Miami-Fort Lauderdale-Pompano Beach, FL Metro Area	122,358
Re-Emerging	San Jose-Sunnyvale-Santa Clara, CA Metro Area	557,614
Re-Emerging	Seattle-Tacoma-Bellevue, WA Metro Area	380,458
Re-Emerging	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metro Area	289,309
Re-Emerging	Sacramento--Arden-Arcade--Roseville, CA Metro Area	248,116
Re-Emerging	Minneapolis-St. Paul-Bloomington, MN-WI Metro Area	184,076
Re-Emerging	Portland-Vancouver-Hillsboro, OR-WA Metro Area	122,921
Re-Emerging	Baltimore-Towson, MD Metro Area	120,933
Re-Emerging	Denver-Aurora-Broomfield, CO Metro Area	91,504
Re-Emerging	Tampa-St. Petersburg-Clearwater, FL Metro Area	79,299
Major-Emerging	Atlanta-Sandy Springs-Marietta, GA Metro Area	248,902
Major-Emerging	Las Vegas-Paradise, NV Metro Area	163,742
Major-Emerging	Phoenix-Mesa-Glendale, AZ Metro Area	135,436
Major-Emerging	Orlando-Kissimmee-Sanford, FL Metro Area	83,403
Major-Emerging	Austin-Round Rock-San Marcos, TX Metro Area	80,716
Major-Emerging	Charlotte-Gastonia-Rock Hill, NC-SC Metro Area	54,327
Minor-Emerging	Columbus, OH Metro Area	56,280
Minor-Emerging	Raleigh-Cary, NC Metro Area	49,135
Minor-Emerging	Indianapolis-Carmel, IN Metro Area	39,047
Minor-Emerging	Nashville-Davidson--Murfreesboro--Franklin, TN Metro Area	35,576
Minor-Emerging	Salt Lake City, UT Metro Area	33,562
Minor-Emerging	Durham-Chapel Hill, NC Metro Area	21,788
Minor-Emerging	Greensboro-High Point, NC Metro Area	20,519

Minor-Emerging	Lakeland-Winter Haven, FL Metro Area	9,518
Minor-Emerging	Cape Coral-Fort Myers, FL Metro Area	8,317

Source: 2010 U.S. Decennial Census.
Note: Total Asians encompasses the Asian alone population. Immigrant gateway categories are from Singer's (2015) immigrant gateway typology. Metropolitan areas follow the U.S. Census Bureau December 2009 delineation.

2. Dimensions of residential patterns

To answer the first and second research questions of my study, which ask what are the residential patterns across Asian ethnic groups and to what extent do such patterns vary across immigrant gateways, I leverage a multi-dimensional strategy, which has been advocated by several scholars (e.g., Massey and Denton 1988; Brown and Chung 2006). The application of a multi-dimensional approach in my study allows me to capture different aspects and variations of residential patterns that I would otherwise overlook if I only used one dimension. In this regard, I depart from previous research that used either only global measures of segregation or only local measures. My study employs the following dimensions and respective measures of segregation to capture the different aspects of residential patterns: (i) evenness, measured using the dissimilarity index, (ii) isolation calculated as exposure to own group, and (iii) clustering, operationalized using Local Moran's I. In the following subsections, I elaborate on each of these measures.

a. Evenness

Evenness denotes the differential distribution of two racial or ethnic groups in a city (Massey and Denton 1988). Segregation occurs when a group is unevenly distributed across areal units. The dimension of evenness is most commonly measured using the dissimilarity index, which is also the most frequently used segregation measure in the residential segregation literature (Massey and Denton 1988). The dissimilarity index, a measure of

evenness, is considered global in nature, whereby a single value for each metropolitan area indicates the proportion of one group that would have to move to another area of residence (in my study, another census tract) in order to achieve an even racial/ethnic distribution in the metropolitan area overall. The Dissimilarity Index is computed as:

$$D = \frac{1}{2}\sum_{i=1}^{n} \left| \left(\frac{a_i}{A}\right) - \left(\frac{b_i}{B}\right) \right|$$

where a_i is the population of group A (e.g., Chinese) in census tract *i*; *A* is the total population of group A in the metropolitan area; b_i is the population of group B (e.g., whites) in census tract *i*; *B* is the total population of group B in the metropolitan area; and *n* is the number of tracts in the metropolitan area.

Dissimilarity is not an absolute measure; rather, it is scaled relative to another racial or ethnic group (Massey and Denton 1988). For my study, I calculate the dissimilarity index for each Asian ethnic group compared to non-Hispanic whites, which is the commonly used reference group for the dissimilarity index in the literature (Iceland 2004).

b. Isolation (Exposure to own group)

Exposure indicates the degree of potential interaction or contact between members of a racial or ethnic group within a city (Massey and Denton 1988). Compared to evenness, exposure attempts to capture the experience of segregation felt by the average member of a racial or ethnic group, specifically the potential social interactions with members of the same group by virtue of sharing the same neighborhood. The isolation index is a common measure of exposure used in the residential segregation literature. Similar to the dissimilarity index, the isolation index is another global measure of segregation. It measures the average percentage of members of a group that lives in a neighborhood with others of their same

group (Massey and Denton 1988; Iceland 2009). The formula for calculating the isolation index is as follows:

$$I = \sum_{i=1}^{n} \left(\frac{a_i}{A} \cdot \frac{a_i}{t_i} \right)$$

where a_i is the population of group A (e.g., Chinese) in census tract *i*; *A* is the total population of group A in the metropolitan area; t_i is the total population in census tract *i*; and *n* is the number of census tracts in the metropolitan area.

c. Clustering

The third measure that I use in my analysis of Asian residential patterns is clustering, which is a local-level measure of segregation that highlights the spatial nature of residential patterns. Clustering measures the extent to which geographic areal units populated by members of a racial or ethnic minority group adjoin or cluster together in space. A high level of clustering, whereby members of an ethnic group reside with others from the same group in a contiguous and closely packed space, leads to the formation of a single racial or ethnic enclave (Massey and Denton 1988; Logan et al. 2002; Wilkes and Iceland 2004; Brown and Chung 2006). Clustering in adjacent tracts has the potential to highlight the ethnic character of a neighborhood by combining group members in a defined space (Logan et al. 2002). Such clustering along contiguous areal units provides opportunities for an ethnic group to develop social structures, including religious institutions, community newspapers, inter-personal networks, and cultural institutions, which foster distinct ethnic neighborhoods (Alba and Nee 1997; Massey and Denton 1988; Breton 1964).

In addition to capturing the ethnic characteristic of a neighborhood, clustering has two additional advantages for studying neighborhoods. First, studies have shown that the local conditions and environment in a certain neighborhood is influenced by the surrounding neighborhoods (e.g., Crowder and South 2008). Second, for those residents who live closer to

the outer edge of a tract, they may be closer to or more affiliated with residents in the adjacent tract than with those in their own tract (Logan 2011). For these reasons, clustering is a vital measurement to consider for studying and understanding ethnic neighborhood dynamics. Using this clustering dimension and accounting for neighboring tracts helps me to develop a more complete understanding of the residential patterns of Asian ethnic groups.

In the neighborhood literature, clustering is commonly measured as a local indicator of spatial autocorrelation (LISA) (Logan et al. 2002; Alba et al. 2014). The most common LISA in the literature is Local Moran's I (LM-I) (Anselin 1995). Following previous literature, I similarly use LM-I to identify clusters or ethnic neighborhoods. From the *spdep* package in R, the LM-I is calculated as follows:

$$I_i = \frac{(x_i - \overline{x}) \sum_{j=1}^{n} w_{ij}(x_j - \overline{x})}{\sum_{i=1}^{n}(x_i - \overline{x})^2/(n-1)}$$

where x_i is the percentage of a group (e.g., Chinese) in census tract *i*; x_j is the percentage of a group in census tract *j*; $\overline{x}$ is the mean percentage of the group for the metropolitan area; *n* is the number of census tracts in the metropolitan area; and w_{ij} is the spatial weights matrix between *i* and *j*. Under this definition, clustering is a measure of "the degree to which each census tract's proportional representation of a given group is similar to that of surrounding tracts, relative to the group's mean proportional representation of the entire metropolitan region" (Alba et al. 2014:5).[7]

A key component of calculating the LM-I is how to define neighbors.[8] Following previous studies (Logan et al. 2002; Alba et al. 2014; Walton 2015), I use a queen's definition of contiguous neighbors, which are tracts that share boundaries and vertices. Using

[7] Before running the Local Moran's I calculation, I filter out tracts that have a code range in the 9800s and 9900s, which are areas that have little or no residential population, such as large parks, or are areas that cover large bodies of water, respectively.

[8] I ran sensitivity checks to assess whether the occurrence, location, and size of clusters changed when I altered inputs and attributes of the Local Moran's I calculation. For example, I checked whether the number of clusters and the location of clusters changed when I altered the neighbor definition from queen's adjacency to distance-based. Please see Appendix A for a summary of the sensitivity checks that I conducted.

a contiguity definition of neighbors suggests that the nearest and adjacent spatial units affect each other more so than those that do not share a border (Getis 2009). In addition, a contiguity definition captures the idea that clusters are composed of continuous tracts in a given area and are not isolated spatial entities (Logan et al. 2002). I therefore use the queen's contiguity definition because it not only has been utilized in other studies but also closely emulates Massey and Denton's (1988) definition of clustering, which encompasses an aspect of contiguity or adjacency.

Identifying clusters or ethnic neighborhoods using LM-I requires an amalgamation of three different measures. LM-I, as a single value, does not provide sufficient evidence to determine whether there is high significant clustering of a racial or ethnic group. Instead, to identify significant clusters, I rely on three values: (i) the z-score, (ii) a relative concentration measure, and (iii) the p-value. A positive z-score indicates there is spatial clustering of similar values, where either the census tract has a high proportion of an ethnic group and the neighboring tracts similarly have high proportions or the census tract has low values and the neighboring tracts similarly have low values. In this regard, a positive z-score does not indicate whether the clustering is of high or low values. In order to classify a cluster of high values or high ethnic concentration, I use a relative concentration measure (the second indicator that I use to identify a cluster), which is the proportion of a group in a tract relative to the average proportion of that group in the metropolitan area. A relative concentration measure that is greater than 1 suggests that there is high ethnic concentration compared to that in the metropolitan area. In addition to assessing the z-score and relative concentration, I ensure that the p-value (the third indicator that I use to label a cluster) is less than 0.05 to confirm that the cluster is statistically significant. With these three criteria, I identify a cluster as a group of tracts that have positive and significant ($p < 0.05$) z-values and with a relative group concentration score above 1. In other words, a cluster or ethnic neighborhood is a "hot

spot" where there is a high ethnic concentration of a group in the focal census tract and, if present, in neighboring tracts (Logan et al. 2002).

Rather than adopting a universal criterion across all metropolitan areas, I use criteria that are tailored and specific to each individual metropolitan area. Given that metropolitan areas have different demographic profiles, local histories, and ecological structures, which could in turn affect residential processes and patterns of different Asian ethnic groups, I am interested in looking at ethnic neighborhoods within the local metropolitan area in which they are situated. By taking this approach, I am able to capture the extent to which the residential patterns of Asian ethnic groups are consistent with the local racial and ethnic demographic makeup of metropolitan areas and gateways. This methodological strategy is especially crucial for addressing my second question, whereby I seek to understand how residential patterns vary across metropolitan areas that are categorized into different immigrant gateway types, each with a different ecological structure.

In addition to identifying the number of ethnic neighborhoods for each ethnic group, I assess two other characteristics of the clusters. First, I identify whether a cluster is urban or suburban. I operationalize an urban ethnic neighborhood when more than half of the tracts within the cluster are within central city limits.[9] Given that previous studies have found increased suburbanization rates among Asian immigrants (Wen et al. 2009; Alba et al. 1997; Alba and Nee 1997), it is imperative for me to disaggregate the location of the ethnic neighborhood in urban versus suburban areas. I thus examine whether clusters in an average metropolitan area and in each immigrant gateway are located in suburban areas or urban regions, which will either confirm or diverge from previous research.

[9] A tract within central city limits is one that is part of a "principal city," as defined by the Census Bureau. A principal city is typically the largest incorporated place with at least 10,000 people in the Core Based Statistical Area.

The second characteristic that I explore is the average racial and ethnic composition of residents residing in an ethnic neighborhood, including the percentage of residents who are non-Hispanic white, non-Hispanic black, and Hispanic. Examining the average racial composition of the neighborhood allows me to delve deeper into the level of racial/ethnic diversity that Asian groups experience, thereby capturing the underlying framework of the global neighborhood model. Previous work (e.g., Walton 2015; Logan et al. 2002) has not pursued this particular phenomenon. Although Walton (2015) acknowledged that Asian groups in the Asian ethnic neighborhoods in California do not make up the majority of the neighborhood population, she did not conduct any further analyses to actually examine the racial and ethnic composition of Asian ethnic neighborhoods.

3. Assessing theoretical ethnic neighborhood models

To tackle my third research question, which asks to what extent the theoretical ethnic neighborhood models in the literature emerge in the residential patterns that I find, I classify the ethnic neighborhoods that I identified into neighborhood types, each with a different combination of the following four neighborhood characteristics: median household income, education, nativity, and English-language proficiency. Median household income in combination with education captures the socioeconomic status of residents in ethnic neighborhoods. According to the spatial assimilation model, socioeconomic achievements determine opportunities for residential mobility (Massey and Denton 1985). Therefore, in order to capture the underpinnings of the spatial assimilation framework, income and education are included as characteristics in the neighborhood models. Nativity, which is one of the two best predictors of living in an ethnic neighborhood (Logan et al. 2002), indicates the first-generation or second-generation and beyond standing of residents. Nativity helps to distinguish between the spatial assimilation framework and place stratification theory.

Finally, English-language proficiency is deemed to be the other most successful predictor of living in an ethnic neighborhood (Logan et al. 2002).

In order to identify neighborhood models, I aggregate tract-level data on median household income, education, nativity, and English-language proficiency of residents[10] to the cluster level. Then, I examine the distribution of each variable for all tracts in a metropolitan area. I use the 33rd and 66th percentiles of the distribution for the metropolitan area as the cutoffs to designate high and low values. If an ethnic neighborhood has a median household income that is below the 33rd percentile of the distribution of median household income among tracts in the metropolitan area, then it is designated as a low-income neighborhood. If an ethnic neighborhood has a median household income that is above the 66th percentile of the distribution of median household income in the metropolitan area, then it is classified as a high-income neighborhood. These thresholds for low and high designation are similarly used for percentage of residents in the neighborhood with a bachelor's degree or higher, proportion of residents who are native-born, and percentage of residents who speak English less than "very well."[11] These thresholds were chosen because I wanted to ensure that I (i) had an equal distribution of neighborhoods in the high and low categories, and (ii) identified clearly distinguishable neighborhood types.[12]

[10] These characteristics are for all residents living in the cluster and are not limited to the Asian groups living in the neighborhood. I am interested in understanding the neighborhood characteristics, resources, and opportunities that Asian ethnic groups experience or have access to in their place of residence. As such, it is imperative to account for the attributes of everyone living in the clusters, not just a subset of the population in the neighborhoods.

[11] To elaborate, a low education neighborhood is one where the percentage of residents in the neighborhood with a bachelor's degree is less than the 33rd percentile of the distribution in the metropolitan area. A high education neighborhood is a neighborhood where the percentage with a bachelor's degree is higher than the 66th percentile. A foreign-born neighborhood contains a proportion of native-born residents that is less than the 33rd percentile in the metropolitan area, whereas a native-born neighborhood has a native-born proportion that is higher than the 66th percentile. When the percentage of residents who speak English "less than very well" in an ethnic neighborhood falls below the 33rd percentile, the neighborhood is categorized as a high English-speaking neighborhood; while one that is above the 66th percentile is identified as a low English-speaking neighborhood.

[12] The thresholds that I utilize for the neighborhood models diverge from those used by Walton (2015), who developed these neighborhood models. Appendix A elaborates on the differences between my approach and Walton's approach.

With these thresholds, I categorize each ethnic neighborhood as one of the theoretical ethnic neighborhood models. All four characteristics have to be met in order to be identified as one of the four neighborhood models. Table 3 below summarizes the variables used to identify each neighborhood type, which follows the conceptual frameworks from Walton (2015) and Logan et al. (2002). I disaggregate the resurgent community by nativity, which allows me to clearly assess whether resurgent communities exist among foreign- or native-born ethnic neighborhoods.

Table 3. Neighborhood characteristics of ethnic neighborhood models

Characteristic	Immigrant enclave	Community of constraint	Resurgent community (foreign)	Resurgent community (native)
Income	Low	Low	High	High
Education	Low	Low	High	High
English-language	Low	High	High	High
Nativity	Foreign	Native	Foreign	Native

Using below-the-33rd-percentile and above-the-66th-percentile thresholds means that no less than one-third of the neighborhoods in a metropolitan area will have at least one characteristic that falls between the 33rd and 66th percentiles. I identify these neighborhoods as "residual neighborhoods." I argue that these residual neighborhoods in the middle third of the distribution have neither low nor high attributes. For example, consider an ethnic neighborhood with a median household income that is in the 49th percentile and another neighborhood with a median household income that is in the 51st percentile. If I were to use the median as a threshold to identify high versus low income neighborhoods, the former would be classified as a low-income neighborhood and the latter a high-income neighborhood. However, I contend that the median income in these two neighborhoods are too similar to clearly differentiate them as being low or high. Therefore, with my thresholds, these two neighborhoods would not be categorized as neither low- nor high-income

neighborhoods. Rather, the thresholds that I utilize help to clearly differentiate between low and high neighborhood characteristics.

Furthermore, I identify neighborhood models within the local metropolitan area, which follows the same strategy that I employ to define ethnic neighborhoods using LM-I. It is important to understand neighborhood conditions within the local metropolitan area context, especially since metropolitan areas have different ecological structures, histories, and demographic configurations, which in turn shapes residential formation in different ways (Charles 2003). However, this strategy means that, for example, a metropolitan area with a smaller immigrant population would have a severely left-skewed distribution of percentage native-born, which means the 66th percentile cutoff will be extremely high. In comparison, a metropolitan area with a larger immigrant population would have a slightly more normal distribution of percentage native-born, which means the 66th percentile threshold will be somewhat lower. Table 4 corroborates this point – the average threshold used to identify a native-born neighborhood in Former gateways is 97%, while the average threshold is 86% for Major-Continuous gateways. Former gateways have smaller immigrant populations, whereas Major-Continuous gateways have more diverse and larger immigrant populations. Therefore, native-born neighborhoods in Former gateways might be considered "more native" than those in Major-Continuous gateways.

Table 4. The average 33rd and 66th percentile thresholds used to classify neighborhood models for metropolitan areas categorized under each immigrant gateway

	Proportion of residents in neighborhood with poor English skills		Proportion of residents in neighborhood who are native		Proportion of residents in neighborhood with a Bachelor's degree or higher		Median household income in neighborhood	
Immigrant Gateway	33rd %tile	66th %tile	33rd %tile	66th %tile	33rd %tile	66th %tile	33rd %tile	66th %tile
Former	1%	3%	93%	97%	18%	32%	43,869	60,828
Major-Continuous	6%	16%	72%	86%	27%	46%	57,037	82,189
Minor-Continuous	9%	17%	79%	87%	17%	31%	46,137	65,951
Post WW2	9%	20%	69%	82%	20%	38%	50,367	73,195
Re-Emerging	4%	10%	82%	90%	24%	41%	53,486	74,398
Major-Emerging	4%	10%	83%	91%	20%	37%	46,350	65,382
Minor-Emerging	3%	7%	89%	94%	20%	37%	44,454	60,625

I. Limitations of my study

The contributions of this study should be deliberated in light of several limitations. The first limitation is that my study focuses on metropolitan areas in the United States. I do not examine residential patterns of Asian ethnic groups in other geographic regions, such as rural or micropolitan areas. The settlement experiences in these places may vary substantially than those in metropolitan areas given different demographic profiles, historical development, and infrastructure. As such, although I embrace "spatial inclusivity" by moving beyond the oft-studied metropolitan areas and by focusing on more than two immigrant destinations, future work should analyze the residential patterns of Asian groups in other geographic areas, including rural areas.

A second limitation is that, as noted in the methodology section, the ethnic neighborhoods and neighborhood models are tailored to a metropolitan area's demographic, economic, and social structure. For example, a Chinese ethnic neighborhood, Chinese immigrant enclave, and Chinese resurgent community possess group concentrations and neighborhood characteristics that are distinctive within individual metropolitan areas. While

employing this methodology allows me to capture the degree to which residential patterns align with the the ecological structure of the local metropolitan area, I am not able to identify similar kinds of Chinese ethnic neighborhoods (and neighborhoods defined by the other five groups, as well as neighborhood models) across metropolitan areas and across gateway types. As a consequence, my study technically encompasses an assortment of ethnic neighborhoods and neighborhood models that cannot be compared across metropolitan areas. Future research should consider using a national or universal average to operationalize ethnic neighborhoods in order to capture comparability across regions.

Finally, my study is limited by the fact that the neighborhood models – immigrant enclave, community of constraint, and resurgent community – are "ideal types" (Weber 1904; Parsons 1929). The neighborhood types generalize and simplify aspects of the complex reality that Asian ethnic groups actually experience and live in (Walton 2015). Future investigations should consider leveraging well-developed qualitative methods to compare and contrast on-the-ground experiences, lived realities, and residential contexts of Asian ethnic groups in different types of immigrant destinations.

J. Results

1. Residential patterns of Asian ethnic groups overall and by gateway

I present results that examine the overall residential patterns, which are averaged across 57 metropolitan areas, as well as the patterns by immigrant gateway type. In this regard, I concurrently address my first two research questions, which ask what the residential patterns of Asian ethnic groups are and to what extent do these patterns across different kinds of immigrant gateways vary. As a reminder, this study applies a multidimensional approach to understand these residential patterns. In the first two subsections, I present Asian ethnic groups' residential patterns along dissimilarity and isolation indices, which are global

measures of segregation. I then turn my attention to clustering, which is the local measure of segregation that I leverage.

a. Evenness

Figure 2 presents the evenness segregation dimension across Asian ethnic groups and across immigrant gateways. There is a wide range in the level of evenness across Asian subgroups and immigrant gateway types. Vietnamese have the highest average dissimilarity score from non-Hispanic whites, while Japanese and Filipinos have the lowest average dissimilarity scores, which is consistent with previous findings (e.g., Logan and Zhang 2013). Vietnamese are the most segregated from non-Hispanic whites, with a dissimilarity score (D) of 0.53. This means that 53% of Vietnamese would need to move to a different neighborhood for there to be an even distribution of Vietnamese across all the neighborhoods in an average metropolitan area. In general, Filipinos (D = 0.40) and Japanese (D = 0.41) are the least segregated along the dissimilarity index out of the six Asian ethnic groups.

Across gateways, the pattern of dissimilarity among Asian ethnic groups varies according to the age of the metropolitan area and the period in which the metropolitan area received a higher than the national average share of the immigrant population. In gateways that had a high foreign-born population in the early 20th century, namely Former and Major-Continuous gateways, the dissimilarity scores for the six Asian groups are generally clustered at higher values. Specifically, in Former gateways, the dissimilarity scores of Asian ethnic groups, with the exception of Filipinos, fall into a narrow range at the upper end of the index, from 0.48 for Koreans to 0.55 for Asian Indians. By the same token, in Major-Continuous gateways, the dissimilarity values reach a high of 0.58 for Vietnamese and a low of 0.47 for Filipinos. In comparison, in gateways that only had a high foreign-born population starting in the late 20th or early 21st century, the dissimilarity scores are generally lower and more

varied. For example, in Minor-Emerging gateways, the dissimilarity scores range from 0.37 for Filipinos to 0.51 for Vietnamese. These findings conform with previous studies showing that older and larger metropolitan areas report higher segregation scores than smaller and newly emerging metropolitan areas (Iceland et al. 2013; Timberlake and Iceland 2007; White et al. 2003).

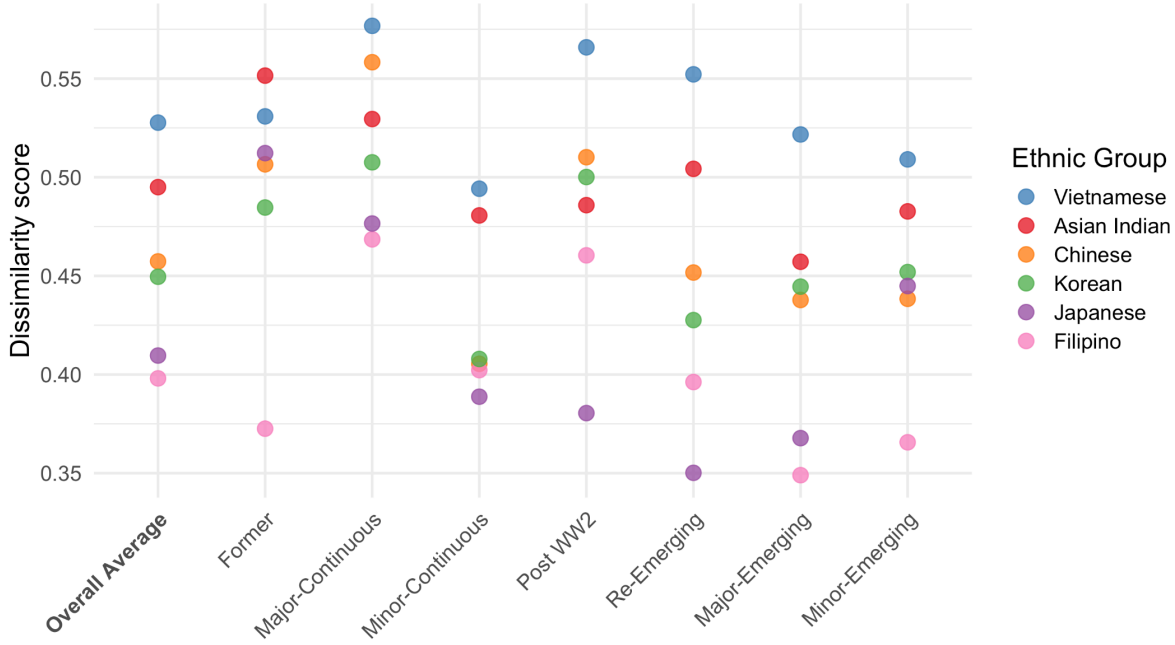

Figure 2. Dissimilarity of Asian Ethnic Groups from non-Hispanic Whites, Overall and by Gateway, 2010

Minor-Continuous gateways are an exception to this pattern. In Figure 2, the dissimilarity levels of Asian subgroups for metropolitan areas categorized as Minor-Continuous gateways are lower than those in other gateways. Minor-Continuous gateways are metropolitan areas that have taken on an above-average share of immigrants between 1900 and 1950, and then received a share of the immigrant population above or near the national average since 2014. Although they are categorized as Minor-*Continuous* gateways, which implies that they have a long history of receiving immigrants, they have essentially

only experienced a high immigration growth rate in the early 20th century, especially from Asian countries. As such, the segregation experiences in these gateways may be less pronounced than in other gateways that have received a high share of immigrants throughout the 20th century.

b. Isolation (Exposure to own group)

In addition to examining evenness, this study explores the isolation dimension of Asian ethnic groups, both overall and across immigrant gateways. In contrast to evenness, which describes the differential distribution of two racial/ethnic groups in a metropolitan area, exposure captures the average potential residential interaction or contact with members of one's own group or with members of other racial/ethnic groups (Massey and Denton 1988).

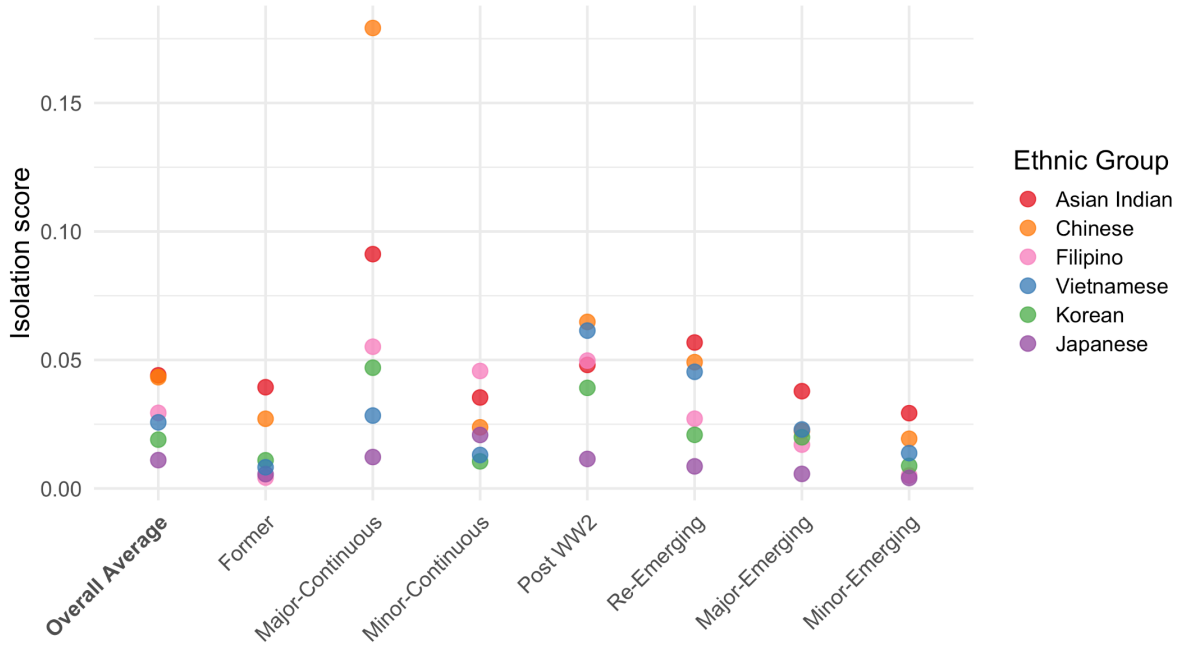

Figure 3. Isolation of Asian Ethnic Groups, Overall and by Gateway, 2010

Compared to the evenness measures, a different residential pattern emerges along the exposure dimension (see Figure 3). The isolation values vary across Asian ethnic groups, but less dramatically compared to the dissimilarity index. In an average metropolitan area, the isolation scores remain below 0.05. Asian Indians and Chinese are the most isolated, with an average isolation score (I) of 0.044 and 0.043, respectively. This means that, in an average metropolitan area, Asian Indians live in a neighborhood in which 4.4 percent of their neighbors are Asian Indian. At the other end of the spectrum, Japanese (I = 0.011) and Koreans (I = 0.019) are the least isolated. These findings are somewhat consistent with Logan and Zhang (2013).

It should be noted that the isolation index is sensitive to the relative population size of a group. Larger Asian ethnic groups – such as Chinese, Asian Indians, and Filipinos, each with a total population of over 2 million in the 57 metropolitan areas in my study – are more likely to have higher average isolation scores than smaller Asian subgroups, such as Japanese, who have a total population size of around 600,000 in the 57 metropolitan areas (see Table 5). This relationship is clearly evident for Chinese in Major-Continuous gateways where the isolation score is noticeably high at 0.18. This extreme value is influenced by the fact that Major-Continuous gateways are home to 30% of the total Asian population and that Chinese represent the largest share (approximately 34%) of the Asian population in these sizeable Major-Continuous gateways.

Table 5. Population counts of the six largest Asian ethnic groups by immigrant gateway type, 2010

Immigrant Gateway	Chinese	Asian Indian	Filipino	Vietnam-ese	Korean	Japanese	Total Asian*
Former Major-Continuous	74,145	127,221	35,375	25,428	30,186	13,621	388,103
	1,233,064	880,290	547,347	137,129	324,777	107,387	3,635,235

Minor-Continuous	127,241	131,657	261,140	55,290	54,002	173,461	940,815
Post WW2	716,023	528,922	771,528	587,999	479,906	187,950	3,752,612
Re-Emerging	419,176	410,441	291,088	326,007	193,482	94,010	2,074,230
Major-Emerging	114,594	187,496	147,718	102,404	84,638	26,761	766,526
Minor-Emerging	50,287	79,516	21,680	30,387	23,903	12,461	273,742
Total	2,734,530	2,345,543	2,075,876	1,264,644	1,190,894	615,651	11,831,263

* Total Asian includes counts from Asian subgroups other than the six largest Asian ethnic groups listed in the table.
Note: Counts are for Asian alone population.

In sum, along the global measures of segregation, residential patterns vary among different Asian ethnic groups, specifically in ways that are not captured by the typical standard of examining all Asian groups together. In addition, variations in residential segregation levels across different immigrant gateways are revealed in ways that previous studies using a dichotomous gateway classification could not effectively uncover. Based on the dissimilarity index values, in an average metropolitan area, Vietnamese are the most segregated, while Filipinos and Japanese are the least segregated. The variability and concentration of dissimilarity levels differ according to the gateway type. Specifically, metropolitan areas that have experienced high shares of the immigrant population for a longer period of time, such as Major-Continuous and Post WW2 gateways, have higher segregation scores relative to newer, emerging metropolitan areas. In contrast, focusing on the isolation index figures, Chinese and Asian Indians are found to be the most segregated. This pattern is primarily shaped by the relatively large population size of these two groups.

c. Clustering

This section focuses on the spatial residential patterns of Asian ethnic groups, specifically examining clusters or ethnic neighborhoods of each group. To reiterate, in comparison to the global and aspatial nature of evenness and isolation measures, clustering

accounts for the spatial composition of settlement patterns at a local level. This differentiation means that evenness and exposure examine the distribution of groups in a metropolitan area and the degree of potential contact between co-ethnics, respectively, while clustering focuses on the spatial distribution of group members in relation to one another (Massey and Denton 1988). As a spatial measure, clustering reveals whether areas inhabited by members of a minority group are adjoined or connected to similar nearby areas. Clustering can thus exaggerate either the advantages or the disadvantages of living in an isolated neighborhood. On the one hand, clustering is conducive to creating resources and institutions that are communal and beneficial for members of a particular group. On the other hand, if surrounding areas are similarly isolated, residents have to travel further in order to escape the isolation that is produced through clustering. As a recap, I operationalize a cluster or an ethnic neighborhood using Local Moran's I, whereby there is a high concentration of a group in tracts and surrounding tracts relative to the concentration of that group in the entire metropolitan area.

I examine three aspects of clusters: (i) occurrence, (ii) location in urban versus suburban areas, and (iii) average racial and ethnic composition. As I mentioned in greater detail in the methodology section, I examine the location of neighborhoods in urban and suburban regions because previous research has shown that suburbanization is a key process of residential location among Asians (Wen et al. 2009). I also explore the average racial and ethnic composition of Asian ethnic neighborhoods, which allows me to capture the fundamental aspects of the global neighborhood model in these neighborhoods. Similar to the proceeding section, I simultaneously address my first two research questions by presenting the results summed and averaged across the fifty-seven metropolitan areas, as well as disaggregated by immigrant gateway type.

i. Occurrence

Figure 4 reveals the frequency of ethnic neighborhoods for each Asian ethnic group across the fifty-seven metropolitan areas in my study. Filipinos have the highest number of ethnic neighborhoods with 294 clusters, followed by Japanese, with 275 clusters, while Chinese have the fewest, with 210 neighborhoods (see Figure 4). The occurrence of clustering across groups suggests that Filipinos are the most segregated as they have more neighborhoods with high concentrations of Filipinos congregated together, while Chinese are the least segregated.

A somewhat surprising finding from Figure 4 is that although Chinese are one of the larger Asian ethnic groups, they have the fewest number of ethnic neighborhoods. A plausible explanation for this result is the operationalization of ethnic neighborhoods in my study. Specifically, Local Moran's I, the measurement that I used to define ethnic neighborhoods, identifies a cluster or ethnic neighborhood by accounting for a high concentration of a group in a tract and its surrounding tracts relative to the entire metropolitan area. As such, due to the relatively large population size of Chinese (see Table 5), in order to designate a Chinese ethnic neighborhood, the concentration of Chinese in a tract and its neighboring tracts would need to be higher than the concentration of a smaller Asian group (e.g., Japanese). In other words, it takes significantly higher concentrations of Chinese to identify an ethnic neighborhood, as opposed to other Asian ethnic groups that have relatively smaller concentrations.

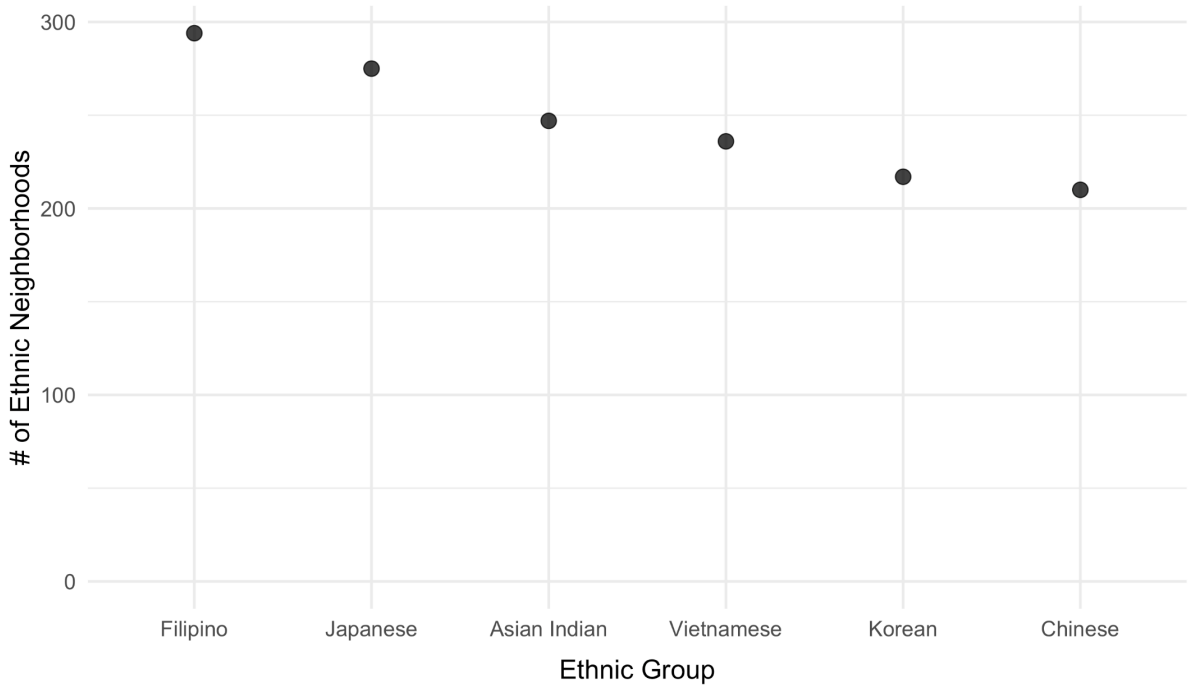

Figure 4. Total Number of Ethnic Neighborhoods for each Asian Ethnic Group Across the 57 Metropolitan Areas, 2010

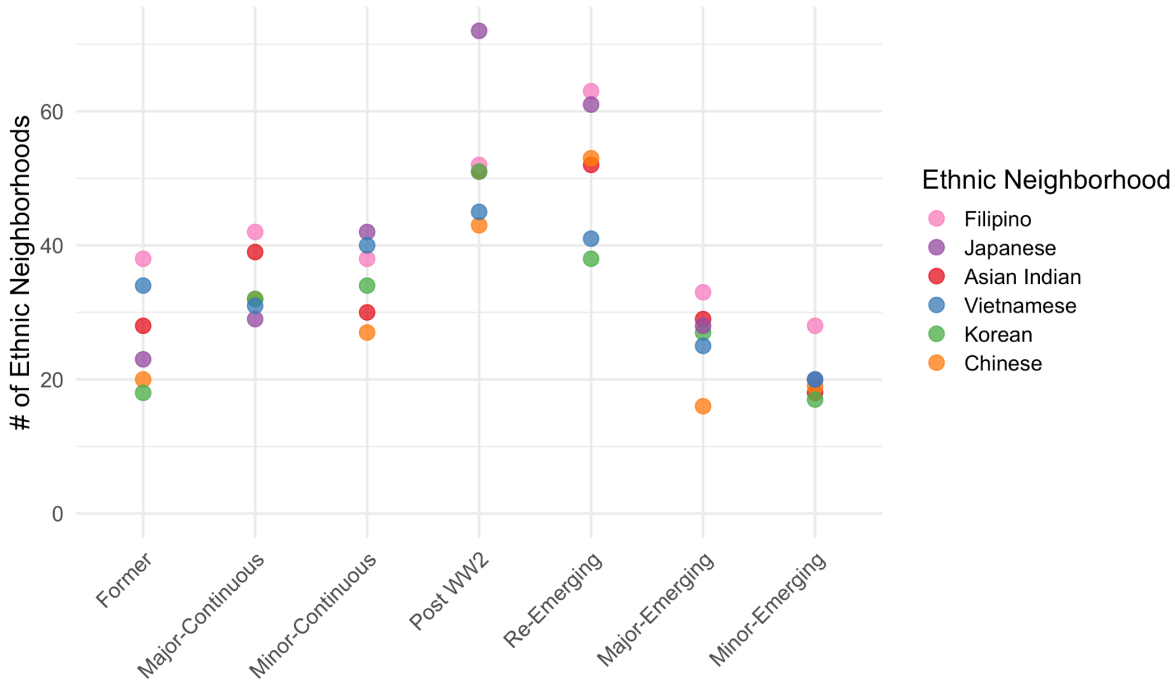

Figure 5. Total Number of Asian Ethnic Neighborhoods, by Gateway, 2010

Across gateways, the occurrence of Asian ethnic neighborhoods is highest in Post WW2 and Re-Emerging gateways, as shown in Figure 5. Overall, these two aforementioned gateways have 314 and 308 total neighborhoods summed across all six groups, respectively. In particular, over 70 Japanese ethnic neighborhoods are located in Post WW2 gateways. In comparison, Major- and Minor-Emerging gateways have approximately half as many neighborhoods as Post WW2 and Re-Emerging gateways, with 158 and 122 total neighborhoods, respectively. The period in which the metropolitan area received immigrants, especially immigrants from Asian nations after the enactment of the Immigration and Nationality Act of 1965, as well as the size of the Asian population appear to be key factors that are consistent with the occurrence of ethnic neighborhoods. Indeed, altogether the seven metropolitan areas that are categorized as Post WW2 gateways have a total Asian population of 3.7 million; the seven metropolitan areas that are classified as Re-Emerging gateways have over 2 million Asians (see Table 5). Accordingly, the concentration of the group in the metropolitan area, the period in which a metropolitan area received Asian immigrants, and the size of the Asian population in the metropolitan area reflect the occurrence of ethnic neighborhoods.

ii. Location

Figure 6 reveals an emerging suburbanization pattern among Asian ethnic neighborhoods, which is consistent with previous research that has found suburban settlement locations among Asian groups (Wen et al. 2009). The percentage of neighborhoods located in urban versus suburban areas, however, depends on the ethnic group and the gateway type. In an average metropolitan area, the majority of Chinese, Japanese, and Vietnamese neighborhoods are urban (58, 57, and 55 percent, respectively), while the majority of

Filipino, Indian, and Korean neighborhoods are suburban (54, 51, and 51 percent, respectively).

Across gateways, the age of the metropolitan area appears to influence the suburbanization rate of Asian neighborhoods. In Former gateways, which are older metropolitan areas, the majority of ethnic neighborhoods for each group, except for Vietnamese, are suburban, from 65 percent of Chinese neighborhoods to 77 percent of Korean neighborhoods. In comparison, in Minor-Emerging gateways, which are newer metropolitan areas with more recent immigration growth, the majority of ethnic neighborhoods for each group are urban, from 70 percent of Japanese neighborhoods to 89 percent of Indian neighborhoods. In the other gateways, there is a mix of both urban and suburban neighborhoods among the six groups. For example, urban Asian ethnic neighborhoods are more prominent than suburban neighborhoods in Major- and Minor-Continuous gateways, whereas suburban Asian ethnic neighborhoods are marginally more common in Re-Emerging gateways. Of particular note, in Post WW2 gateways, Chinese neighborhoods are more likely to be suburban than those in other gateways, which aligns with research that has shown the existence of "ethnoburbs" – traditional ethnic enclaves in the suburbs – among the Chinese population in Los Angeles, which is categorized as a Post WW2 gateway (Li 1998; Wen et al. 2009).

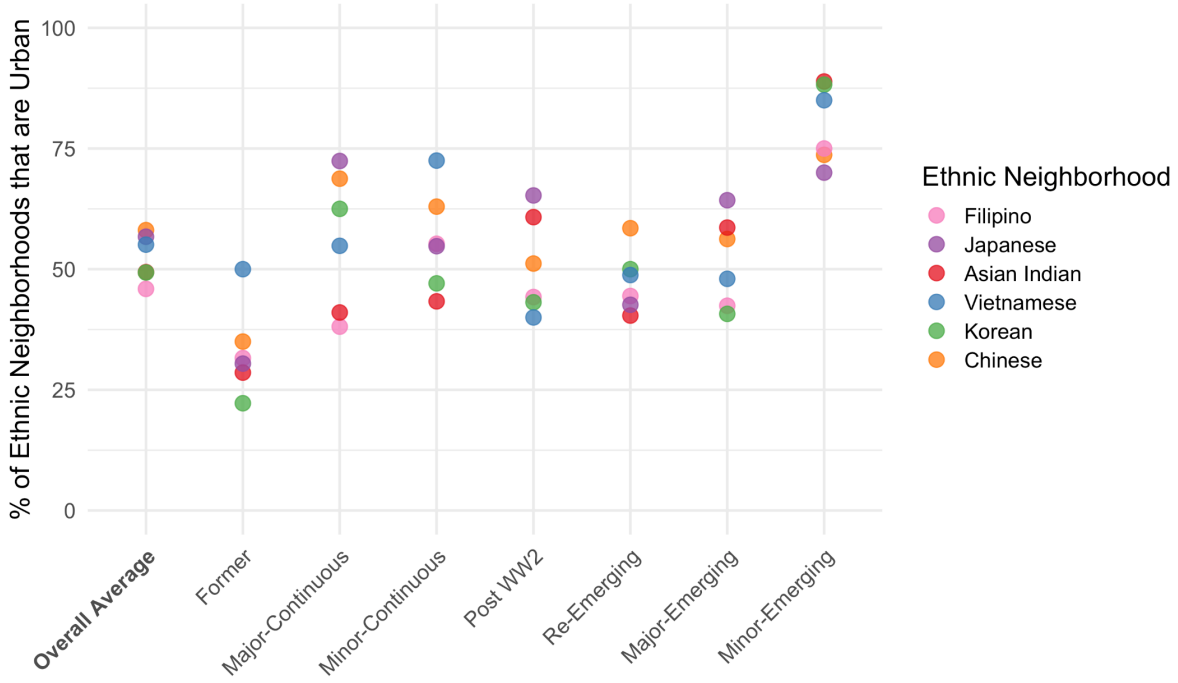

Figure 6. Percentage of Asian Ethnic Neighborhoods that are Urban by Gateway, 2010

To underscore the variation of clustering across Asian groups and across immigrant gateway types that I have found thus far, I present maps that reveal the spatial location of suburban and ethnic neighborhoods across Asian groups in Detroit, New York, Los Angeles, and Columbus (Figures 7, 8, 9, and 10, respectively). These metropolitan areas represent Former, Major-Continuous, Post WW2, and Minor-Emerging gateways, respectively.[13] Ethnic neighborhoods, which are contiguous tracts that have a significantly high concentration of a group relative to the metropolitan area, are represented in the shaded regions.

The maps reinforce the degree to which the patterns of ethnic neighborhoods vary drastically across groups, specifically in terms of location and size. For example, in the New

[13] I chose the metropolitan area with the largest Asian population in each of the Former, Major-Continuous, Post WW2, and Minor-Emerging gateway categories. I do not show maps of Minor-Continuous, Re-Emerging, and Major-Emerging gateways because (i) the neighborhood patterns in Minor-Continuous gateways are somewhat similar to those in Major-Continuous metropolitan areas in terms of the urban vs. suburban location of neighborhoods, and (ii) the patterns in Re-Emerging and Major-Emerging gateways are similar to that in Post WW2 gateways.

York metropolitan area, an example of a Major-Continuous gateway, Chinese neighborhoods are mostly urban (located in Manhattan and Queens), whereas Asian Indian neighborhoods are predominantly suburban, with a large cluster located in New Brunswick, Princeton, and Edison in New Jersey (see Figure 8). In addition, the Chinese neighborhoods are relatively smaller in geographic size than the Indian neighborhoods.

In terms of differences across gateways, the relationship between the location of neighborhoods and the age of the metropolitan area, which was uncovered in Figure 6, is evident in the maps. The ethnic neighborhoods across the six groups in Detroit (a Former gateway) are mostly in suburban locations, while the ethnic neighborhoods in Columbus (a Minor-Emerging gateway) are predominantly urban.

Moreover, the maps reveal that there is some spatial overlap between various neighborhoods of different groups and some proximity of non-overlapping clusters for different ethnic groups. Asian ethnic neighborhoods in newer gateways, which have only recently started to receive large shares of the foreign-born population, appear to be situated in similar areas. For example, in Columbus (a Minor-Emerging gateway), Chinese, Indian, Japanese, and Korean neighborhoods are mostly located in the Dublin area. In comparison, in somewhat older gateways, neighborhoods for each Asian group appear to have more distinctive locations yet are in close proximity to one another. For example, in Los Angeles (a Post WW2 gateway), the single largest Vietnamese neighborhood is in Garden Grove, while a large Korean neighborhood is located in Hacienda Heights. Similarly, in New York (a Major-Continuous gateway), distinctive neighborhoods that are inhabited by different Asian ethnic groups are located near each other throughout Queens.

The preceding point regarding close proximity of non-overlapping clusters of different subgroups is a particularly important finding that relates back to the motivation and need to move away from the traditional pan-ethnic grouping of Asians. Specifically, the maps

clearly reveal that in some metropolitan areas Asian ethnic groups live in distinctive neighborhoods, which likely lead to varied socioeconomic and demographic dynamics and implications for residents. As such, if one were to use the pan-ethnic category of Asians, one would probably find an Asian neighborhood that is essentially an agglomeration of distinct neighborhoods that are dominated by different ethnic groups. Such a finding would mask the true heterogeneity that exists in these neighborhoods and would thus distort the reality of different groups living in different areas with varied neighborhood characteristics. Accordingly, these maps further support the importance of focusing on different Asian ethnic groups rather than the broad simple Asian grouping.

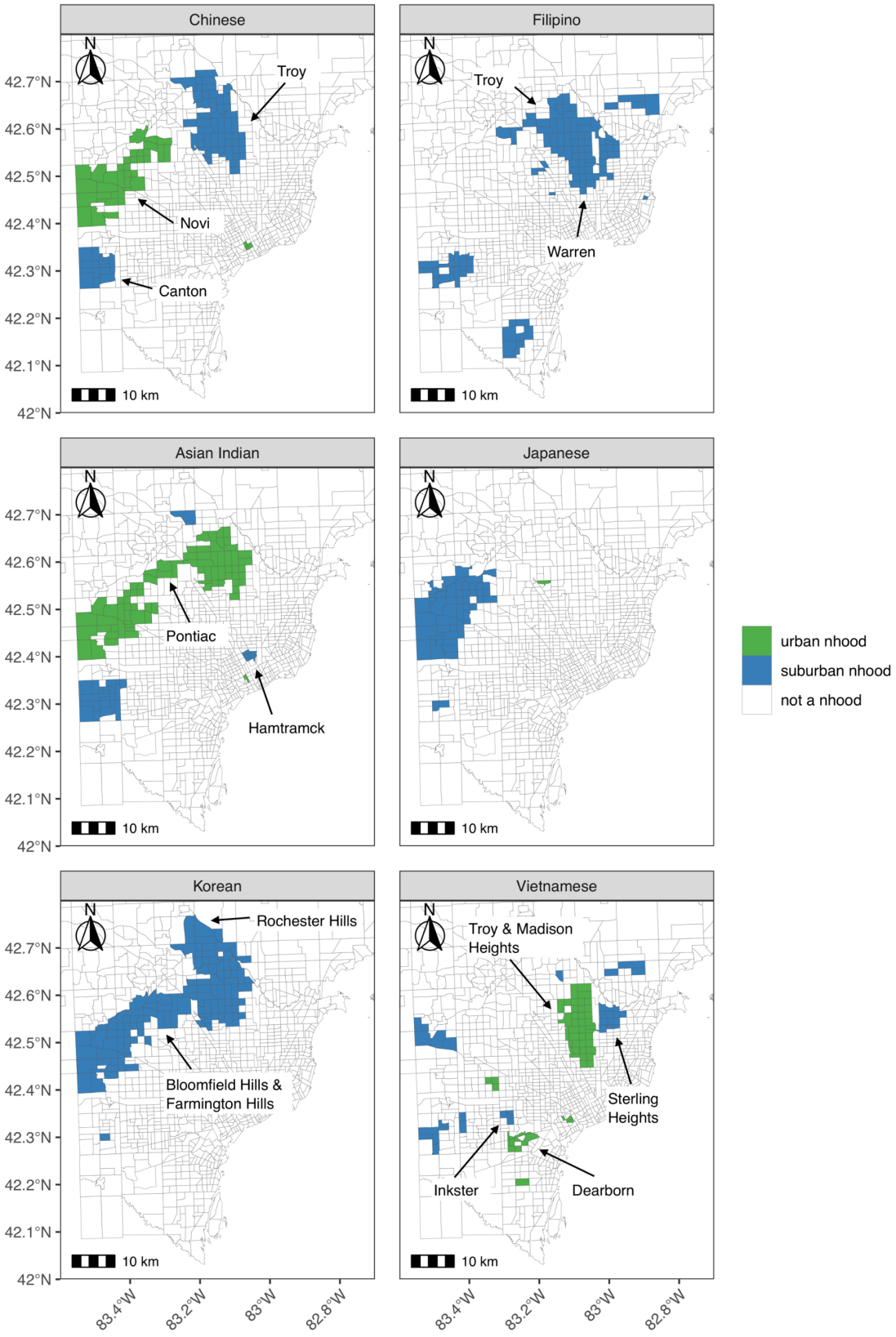

Figure 7. Spatial distribution of ethnic neighborhoods in Detroit-Warren-Livonia, MI metropolitan area (example of Former gateway), by Asian ethnicity, 2010

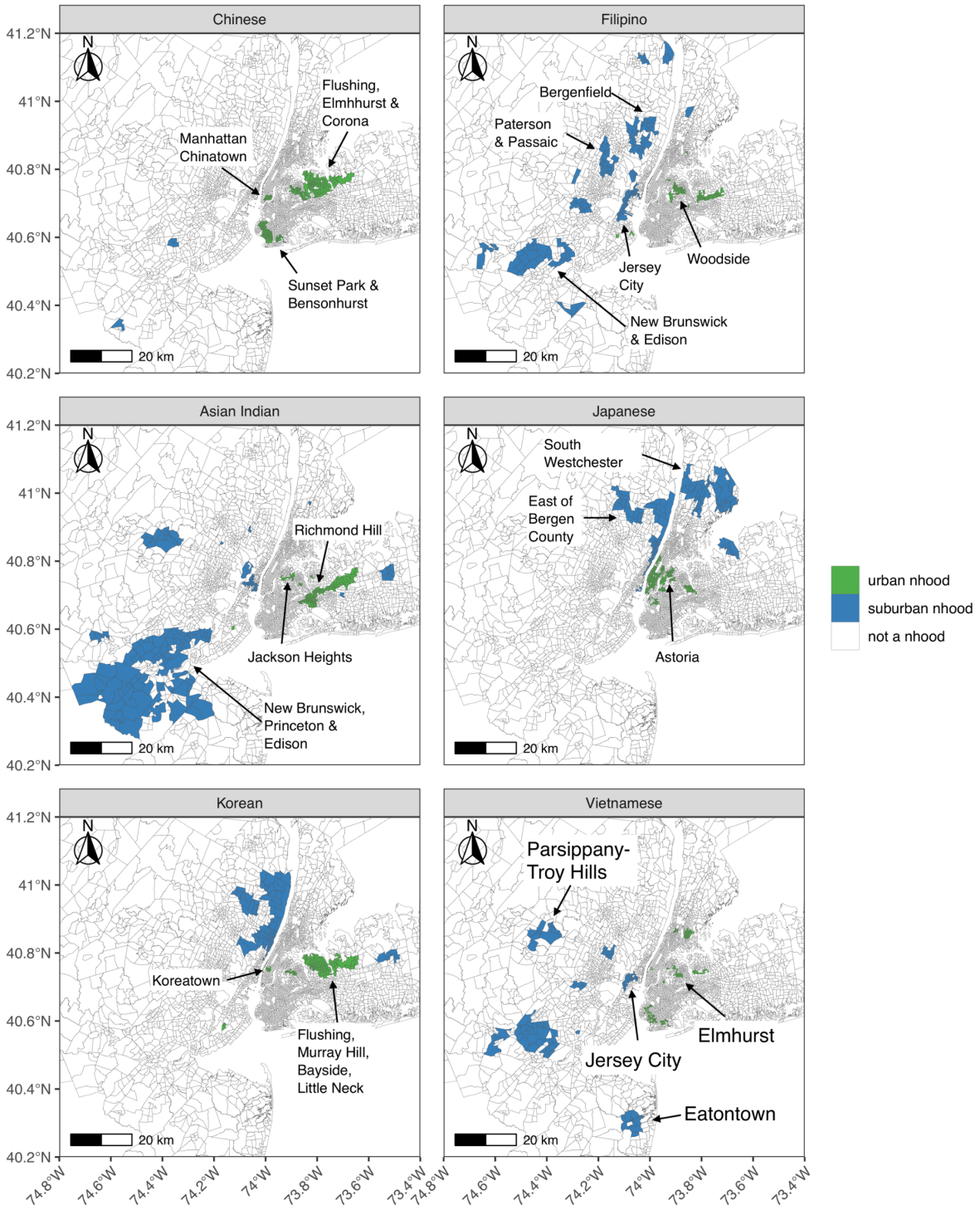

Figure 8. Spatial distribution of ethnic neighborhoods in New York-Northern New Jersey-Long Island, NY-NJ-PA metropolitan area (example of Major-Continuous gateway), by Asian ethnicity, 2010

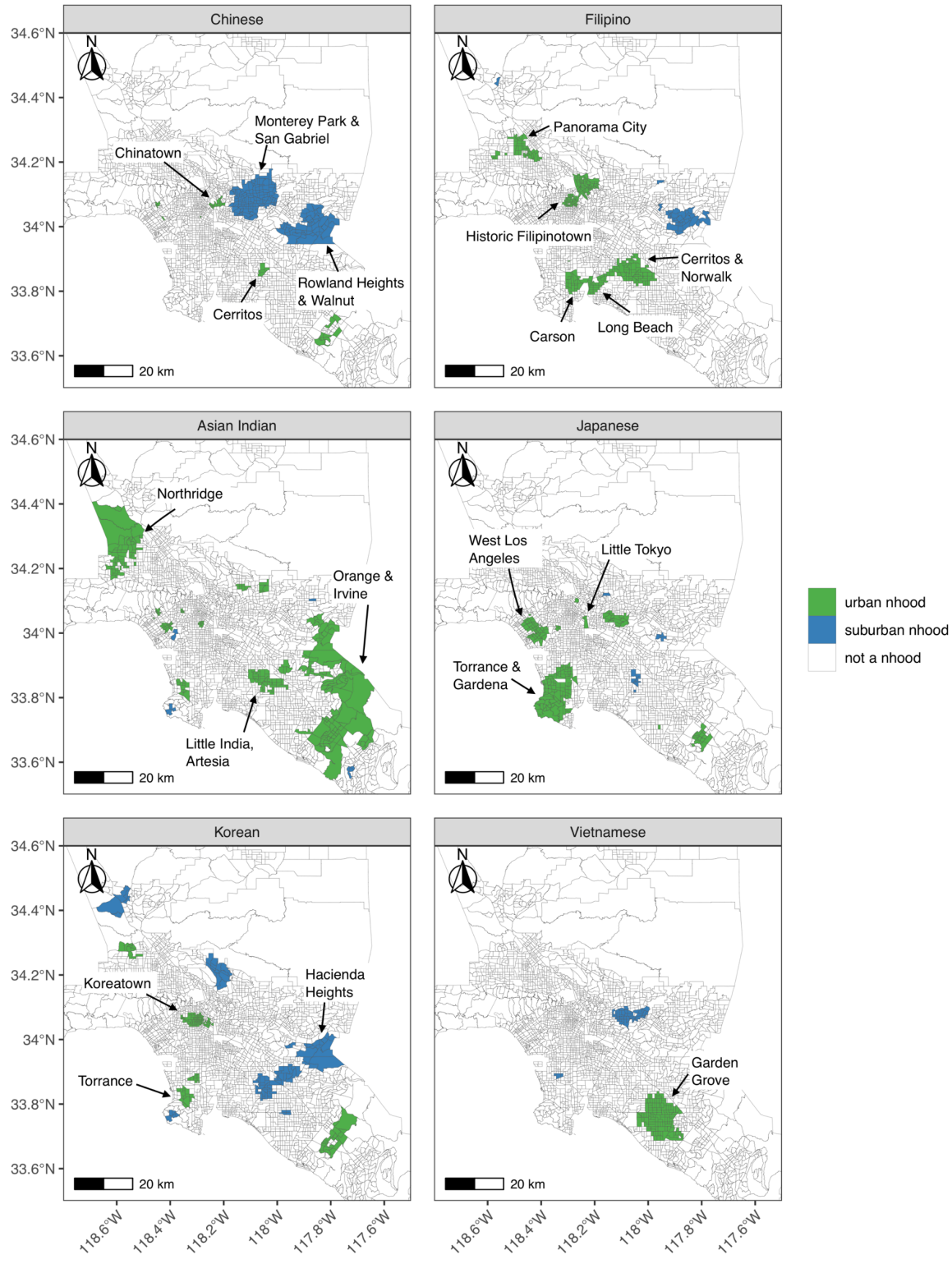

Figure 9. Spatial distribution of ethnic neighborhoods in Los Angeles-Long Beach-Santa Ana, CA metropolitan area (example of Post WW2 gateway), by Asian ethnicity, 2010

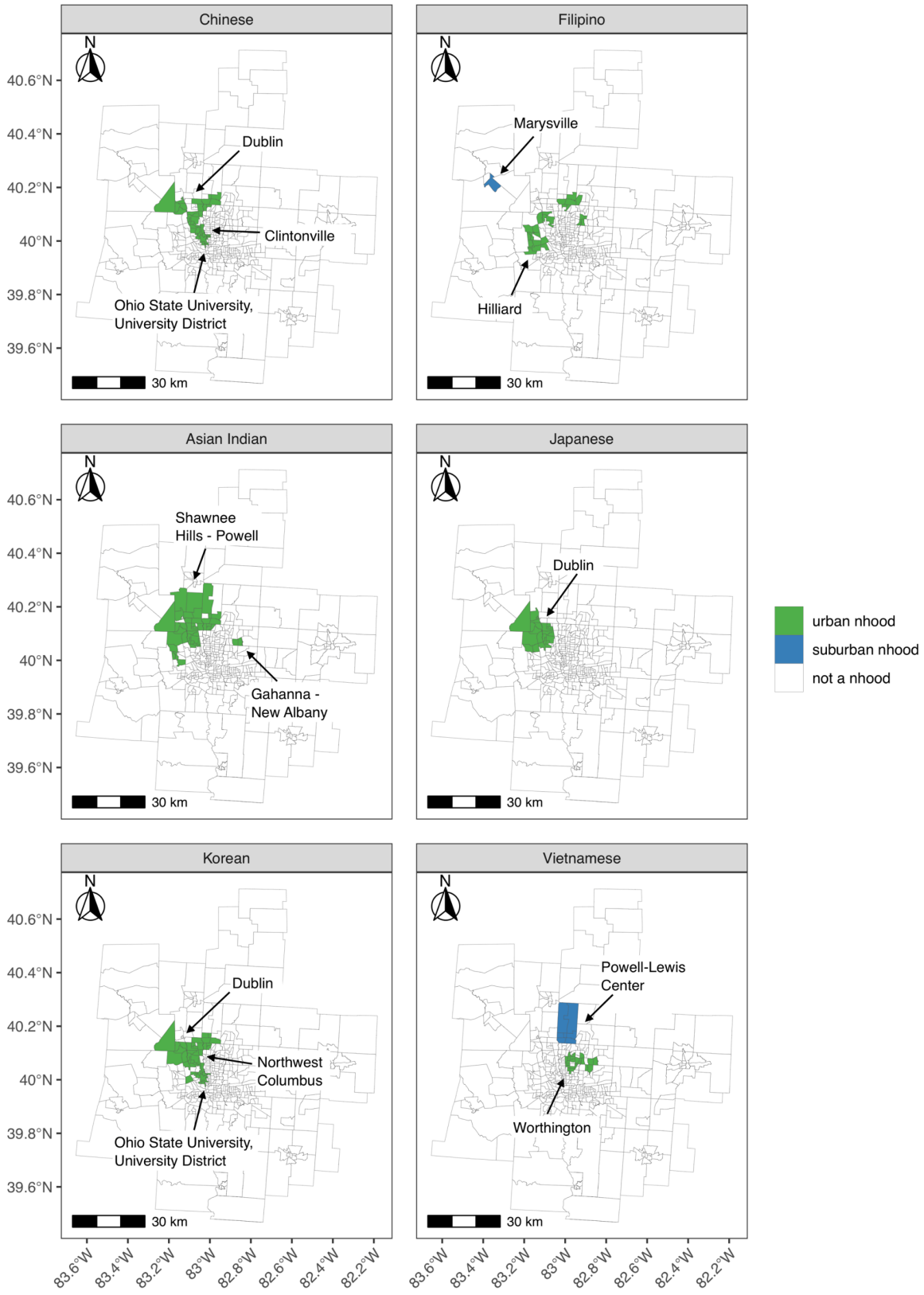

Figure 10. Spatial distribution of ethnic neighborhoods in Columbus, OH metropolitan area (example of Minor-Emerging gateway), by Asian ethnicity, 2010

iii. Racial and ethnic composition

Figure 11 shows the average racial and ethnic composition of residents across ethnic and non-ethnic neighborhoods in an average metropolitan area. The top panel of Figure 11 presents the results with the six Asian ethnic groups combined as "Six Asian groups"; the bottom panel of Figure 11 breaks this down into the individual Asian groups. Figure 11 also presents the composition of residents in each group's non-ethnic neighborhoods[14] to act as counterfactuals.

Overall, non-Hispanic whites represent the bulk of residents in ethnic neighborhoods for each Asian subgroup, except for Vietnamese ethnic neighborhoods (see Figure 11). This finding thus confirms Walton's (2015) statement that Asians are not the majority group in an Asian ethnic neighborhood, which Walton (2015) did not substantiate. Less than 15 percent of residents in ethnic neighborhoods for each Asian group are Asian, which highlights the fact that the majority of those living in Asian ethnic neighborhoods are non-Asian.

Across Asian ethnic neighborhoods, there are variations in the average racial and ethnic composition of residents. In an average metropolitan area, Chinese and Indian ethnic neighborhoods have smaller shares of non-Hispanic blacks and Hispanics compared to Chinese and Indian non-ethnic neighborhoods, respectively. There is an approximately 9-percentage point difference in the average non-Hispanic black share between Chinese/Indian neighborhoods and their non-ethnic neighborhood counterparts. In addition, Chinese and Indians make up more than five percent of the average racial/ethnic composition of their respective ethnic neighborhoods, as shown in Figure 11.

[14] Non-ethnic neighborhoods are tracts that were not identified as ethnic neighborhoods based on the Local Moran's I.

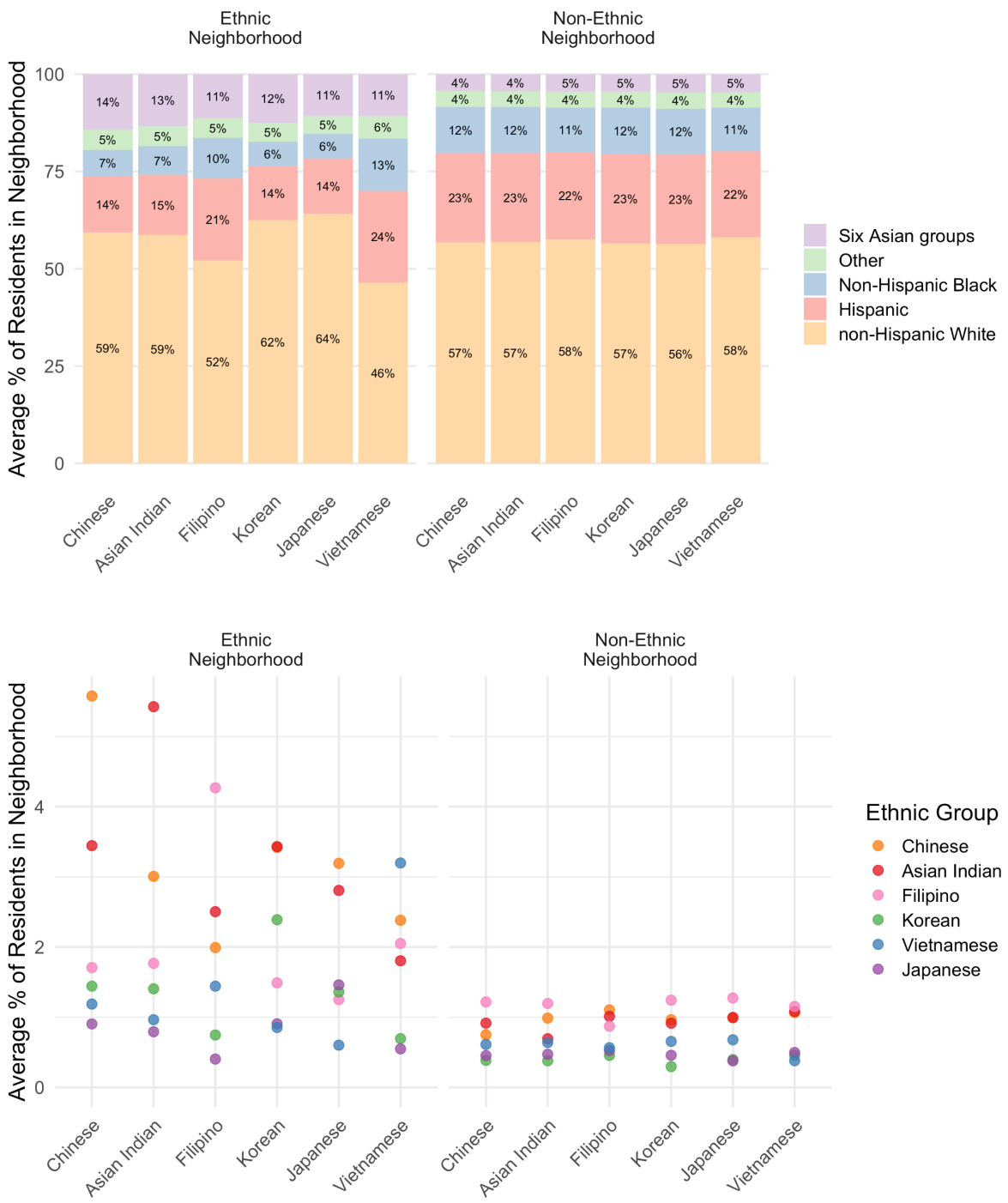

Figure 11. Average Racial and Ethnic Composition of Each Asian Ethnic and Non-Ethnic Neighborhood in the Average Metropolitan Area, 2010. The six Asian groups (shaded purple) in the top panel are broken down by specific Asian ethnic group in the bottom panel

Filipino and Vietnamese ethnic neighborhoods experience a higher level of racial/ethnic heterogeneity compared to other Asian ethnic neighborhoods in an average metropolitan area. Filipino and Vietnamese neighborhoods have a similar share of non-

Hispanic blacks and Hispanics (approximately 12 and 23 percent, respectively) as their non-ethnic neighborhood equivalents, as shown in Figure 11. Filipinos and Vietnamese are also the prevailing Asian ethnic groups in their ethnic neighborhoods. Nevertheless, these two ethnic neighborhoods are less likely to house non-Hispanic whites compared to their non-ethnic neighborhood counterparts. The non-Hispanic white share in Filipino and Vietnamese neighborhoods is 6 and 12 percentage points lower, respectively, than that in the non-ethnic neighborhoods. Overall, these two neighborhoods have a higher level of racial and ethnic diversity than do ethnic neighborhoods defined by other groups, which indicates a higher level of integration.

Although Korean and Japanese ethnic neighborhoods have a smaller proportion of non-Hispanic blacks and Hispanics in their neighborhoods, which follows a similar pattern as Chinese and Indian ethnic neighborhoods, there are higher shares of non-Hispanic whites than in their non-ethnic neighborhood equivalents. The non-Hispanic black concentration in Korean and Japanese neighborhoods are 5- and 8-percentage points lower, respectively, than the concentration in their non-ethnic neighborhood counterparts. In addition, Koreans and Japanese are not the dominant Asian ethnic groups in their respective ethnic neighborhoods. Instead, Indians and/or Chinese represent a larger portion of Asian representation in these two ethnic neighborhoods. This pattern observed in Korean and Japanese neighborhoods posits that these two ethnic neighborhoods do not appear to be truly Korean or Japanese ethnic neighborhoods since there are larger shares of other Asian ethnic groups. Moreover, the minimal differentiation of Japanese and Korean concentrations between their ethnic neighborhoods and non-ethnic neighborhoods further supports the notion that Korean and Japanese neighborhoods may not actually be distinctive ethnic neighborhoods in an average metropolitan area. Indeed, this finding that Japanese ethnic neighborhoods are unique

conforms with the findings that Logan et al. (2002) presented for Japanese neighborhoods in Los Angeles.

Spatially visualizing the concentrations of Asian ethnic groups in their own neighborhoods helps to elucidate these differences across groups, specifically the concentration of a group in their own neighborhood. Figure 12 reveals the concentration of each group in their neighborhood in the Detroit metropolitan area.[15] For each group, except Asian Indians, the percentage of residents in each tract that is part of an ethnic neighborhood is less than 5 percent (or at most 10 percent). Indian neighborhoods in Detroit have high concentrations of Indians – more than 30 percent of the population in a tract are Asian Indian. In comparison, in the Los Angeles metropolitan area, Asian Indian and Japanese neighborhoods contain a smaller concentration of Indians and Japanese, respectively, as shown in Figure 13. Less than 20 percent of the residents in tracts are Indian/Japanese. There are, however, high concentrations (between 60 and 80 percent) of Chinese, Korean, and Vietnamese in each of their neighborhoods.

[15] Due to space limitations, I only present maps for Detroit and Los Angeles. Equivalent maps for the New York and Columbus metropolitan areas are in Appendix B.

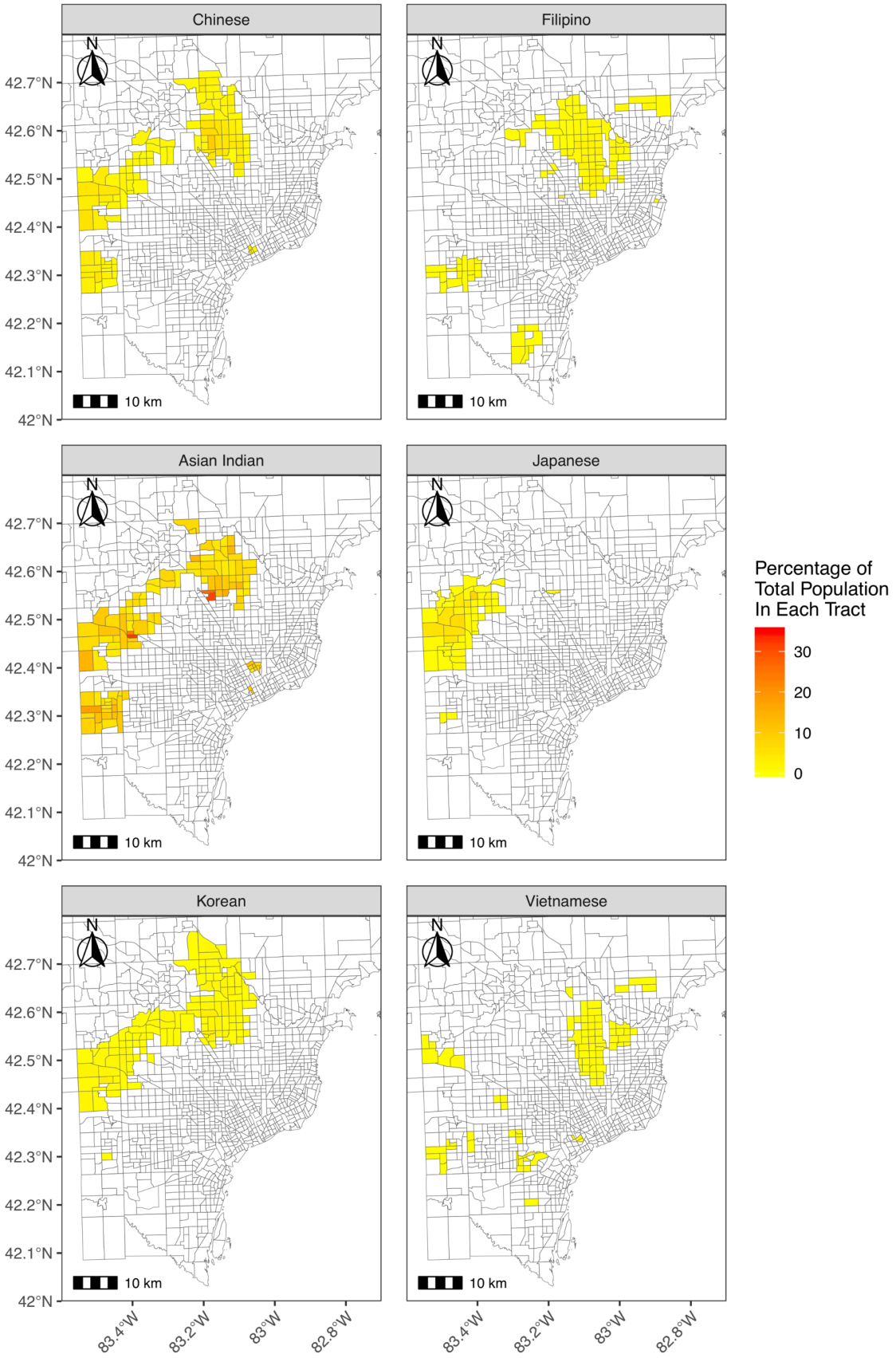

Figure 12. Concentration of groups in their own ethnic neighborhoods in Detroit-Warren-Livonia, MI metropolitan area (example of Former gateway), 2010

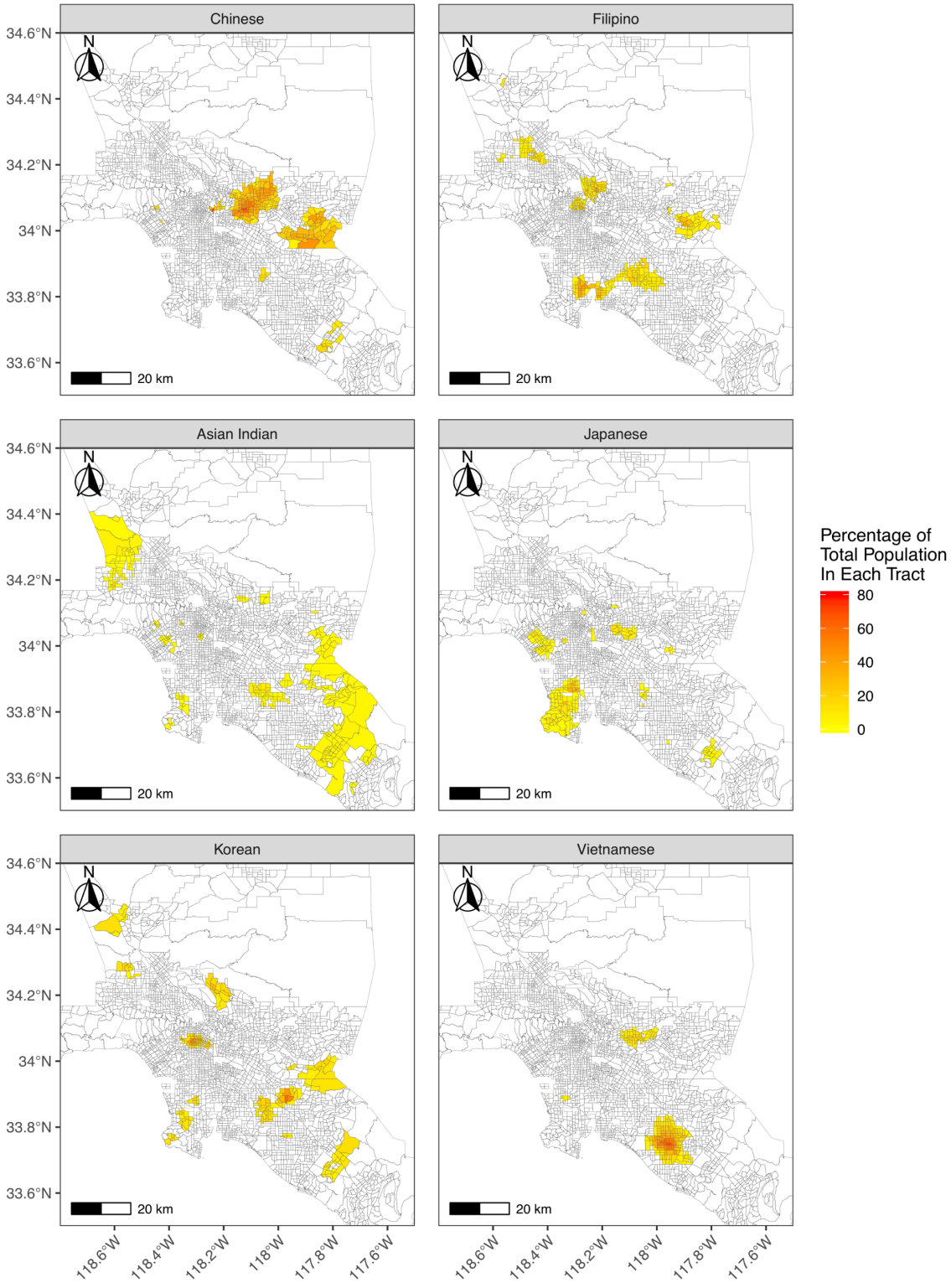

Figure 13. Concentration of groups in their own ethnic neighborhoods in Los Angeles-Long Beach-Santa Ana, CA metropolitan area (example of Post WW2 gateway), 2010

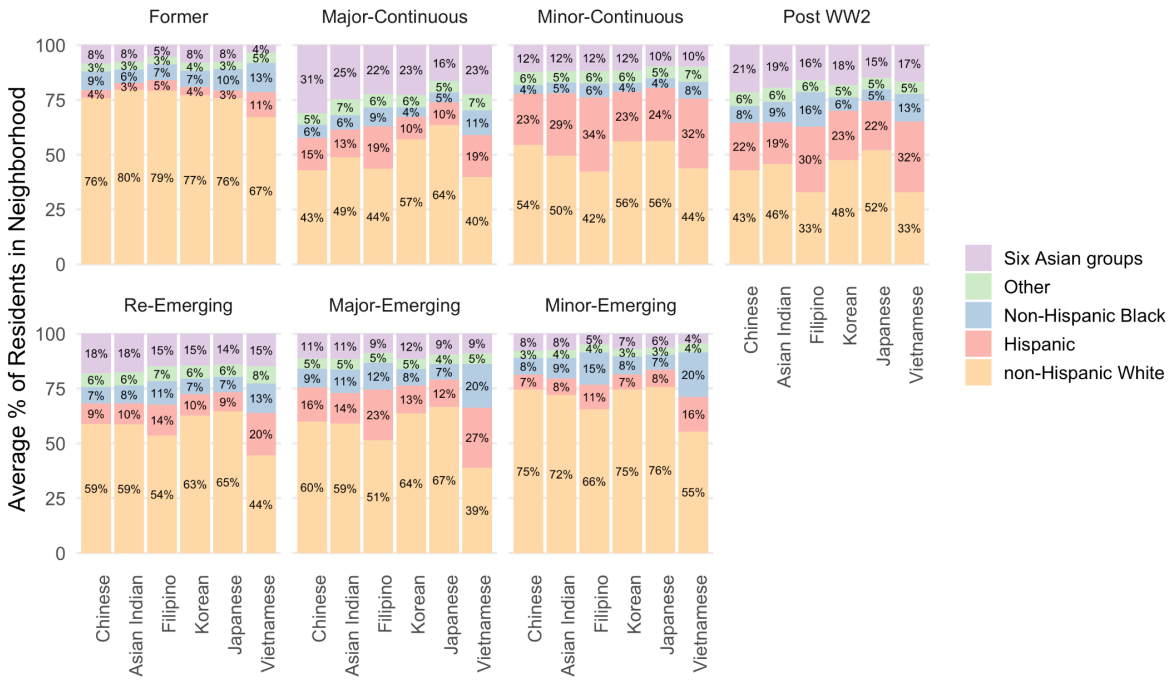

Figure 14. Average Racial and Ethnic Composition of Each Asian Ethnic Neighborhood, by Gateway, 2010

In addition to highlighting how the concentration of each group in their neighborhood varies, the maps (Figures 12 and 13) unearth two other important findings. First, these spatial visualizations clearly illustrate that the formation of Asian ethnic neighborhoods, specifically the concentration of groups in neighborhoods, varies across metropolitan area. Some metropolitan areas, specifically those with larger Asian populations and have received Asian immigrants for a longer time, have higher concentrations of Asian groups in Asian neighborhoods than other metropolitan areas with smaller Asian populations. Figure 14 further supports this pattern of racial and ethnic variation in ethnic neighborhoods across different gateway types. Asian ethnic neighborhoods in Major-Continuous, Post WW2, and Re-Emerging gateways, which have sizeable Asian population sizes and have received Asian immigrants for a longer period of time, have higher concentrations of Asian groups in ethnic neighborhoods. In addition, Hispanics represent a larger share of the racial/ethnic composition of Asian ethnic neighborhoods in Minor-Continuous and Post WW2

destinations. This can be attributed to the fact that metropolitan areas in these two aforementioned gateways are primarily located in Texas and California, specifically along the U.S.-Mexico border and California's Central Valley. Moreover, non-Hispanic whites represent a majority of the average composition of Asian neighborhoods in Former and Minor-Emerging gateways, which house smaller Asian populations relative to Major-Continuous, Post WW2, and Re-Emerging gateways.

The second finding that the maps (Figures 12 and 13) emphasize is that individual ethnic neighborhoods are not homogeneous and uniform in nature. Groups are congregated in certain parts of an ethnic neighborhood and at different concentration intensities. For example, in Detroit, Asian Indians are concentrated (around 30%) at the southwest corner of the neighborhood in Troy. Similarly, in Los Angeles, Vietnamese are concentrated (around 80%) right in the center of the Garden Grove neighborhood. In contrast, Korean and Vietnamese neighborhoods in Detroit do not have a specific area where Koreans and Vietnamese, respectively, live. In other words, the concentration of Koreans and Vietnamese in Detroit are evenly dispersed throughout the neighborhood. This suggests that some ethnic neighborhoods may have a core place where groups settle together and build infrastructure, while other ethnic neighborhoods are more dispersed in terms of settlement and resources.

In summary, Asian ethnic neighborhoods demonstrate variation in occurrence, location, size, and average racial/ethnic composition across Asian ethnic groups and across immigrant gateways. Ethnic neighborhoods also vary in terms of the concentration of the ethnic group within them. These patterns are only evident by disaggregating the broad pan-ethnic Asian category into specific Asian ethnic groups and breaking down the common dichotomous new versus traditional destination classifications into multiple immigrant gateway types.

2. The emergence of theoretical ethnic neighborhood models

This section addresses my third research question, which asks the extent to which the neighborhood patterns that I find are consistent with the theoretical ethnic neighborhood models from the literature. To recap, the three neighborhood models from previous studies are: (i) immigrant enclave, (ii) community of constraint, and (iii) resurgent community. They focus on the socioeconomic status, English abilities, and nativity characteristics of residents in the ethnic neighborhoods (Walton 2015; Logan et al. 2002).

Before I discuss the results for each neighborhood model, I would like to call attention to three general findings. First, although these neighborhood models are mutually exclusive, they are not exhaustive. That is, each of the three neighborhood models from the literature are broad categories that contain a diverse set of neighborhood conditions. Accordingly, I discovered a new neighborhood model, which I label "socially constrained resurgent community." The socially constrained resurgent community is conceptually different from the theoretical models in the literature across key neighborhood traits as listed in Table 6. The socially constrained resurgent community contains a relatively high percentage of high socioeconomic status, foreign-born residents with poor English language proficiency. These characteristics are similar to those of the foreign-born resurgent community model, except for the English-language proficiency dimension.

Table 6. Neighborhood characteristics of ethnic neighborhood models with new model

Characteristic	Immigrant enclave	Community of constraint	Resurgent community (foreign)	Resurgent community (native)	Socially constrained resurgent community
Income	Low	Low	High	High	High
Education	Low	Low	High	High	High
English-language	Low	High	High	High	Low
Nativity	Foreign	Native	Foreign	Native	Foreign

Note: This table is a duplicate of Table 3 from the methodology section with the addition of the socially constrained resurgent community model

Second, a majority of neighborhoods (between 76 and 83 percent) are classified as "residual neighborhoods" (see Figure 15). This means that at least one characteristic that I use to define an ethnic neighborhood (income, education, English language proficiency, or nativity) is not distinguishable enough from other neighborhoods in the metropolitan area to clearly demarcate the neighborhood as one of the three neighborhood types. This finding is important in and of itself because it suggests that the majority of Asian ethnic neighborhoods in an average metropolitan area are fairly similar to other neighborhoods in terms of socioeconomic status, English skills, and nativity of residents. Although this finding was somewhat expected given my operationalization approach, specifically utilizing 33rd and 66th percentile thresholds, it is critical to contemplate what is driving this large share of residual neighborhoods. Specifically, are there other neighborhood features, other than the four characteristics in my study, that distinguish ethnic neighborhoods from the average neighborhood in a metropolitan area? It is beyond the scope of this project to answer this question. I merely pose this question as an initial point for future research to consider.

Third, and finally, a striking observation from Figure 16 is that, in Former gateways, a large share of neighborhoods is categorized as the socially constrained resurgent community model, which include a high percentage of foreign-born, high socioeconomic status residents with poor English skills. This is a somewhat surprising finding given that neighborhoods in Former gateways are predominantly non-Hispanic white (see Figure 14). These somewhat contradictory findings lead to the following question: how are ethnic neighborhoods in Former gateways that are predominantly white categorized as also having a high percentage of foreign-born residents with poor English skills? A plausible explanation to this somewhat strange pattern is the combination of the distribution of the data and the operationalization strategy that I employed. Specifically, in Former gateways, the distribution of the proportion of residents in a neighborhood with poor English skills is heavily skewed right. This extreme

skew is evident in Table 4 in the data and methodology section, which shows that the 33rd percentile is 1% and the 66th percentile is 3%. Similarly, the distribution of the proportion of residents in a neighborhood who is native born is heavily skewed left. Again, Table 4 in the methodology section reveals that the 33rd percentile is 93% and the 66th percentile is 97%. Therefore, I argue that metropolitan areas categorized as Former gateways are outliers with regard to their ethnic neighborhood models. With these general findings, I now turn to the results for each individual neighborhood model.

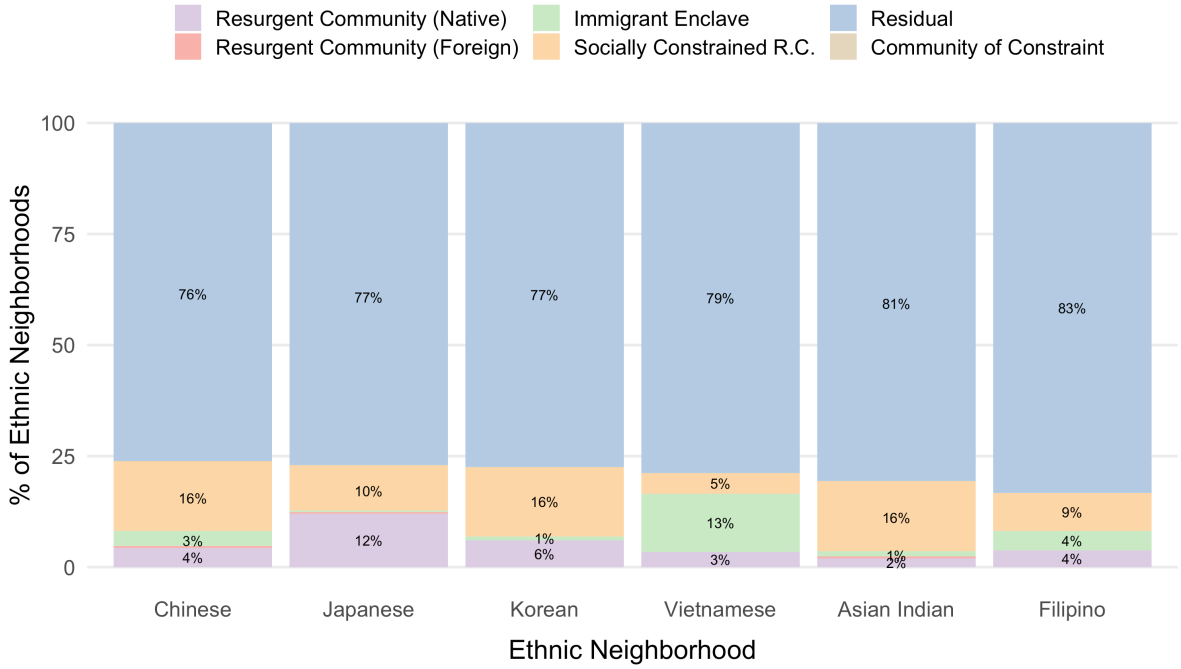

Figure 15. Composition of Asian Ethnic Neighborhoods by Neighborhood Type in the Average Metropolitan Area, 2010. Note: "Socially Constrained R.C." is the socially constrained resurgent community model.

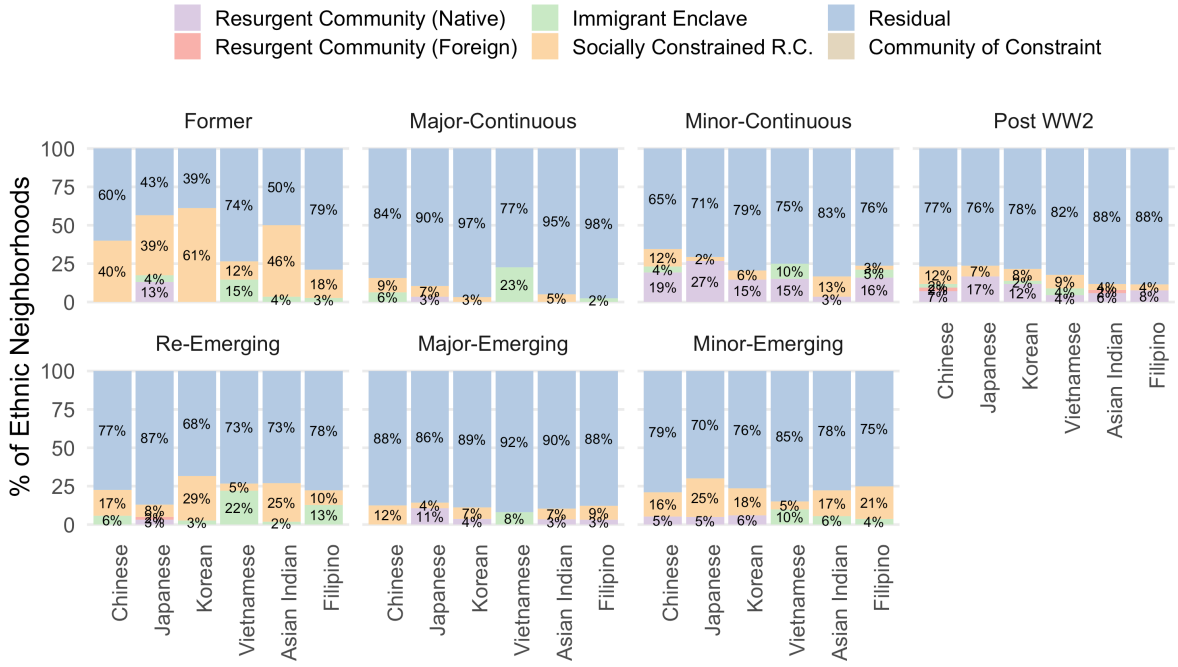

Figure 16. Composition of Asian Ethnic Neighborhoods by Neighborhood Type, by Immigrant Gateway, 2010. Note: "Socially Constrained R.C." is the socially constrained resurgent community model.

a. Immigrant enclaves

Immigrant enclaves are more likely to appear among Vietnamese ethnic neighborhoods than ethnic neighborhoods defined by the other five Asian ethnic groups, which is consistent with Walton's (2015) findings (see Figure 15). Around 1 in 10 Vietnamese ethnic neighborhoods embodies the characteristics of an immigrant enclave, which is a neighborhood with a relatively low percentage of affluent, high English-language skilled, and native-born residents. In contrast, immigrant enclaves represent less than 5% of neighborhoods for the other Asian groups. Given that Vietnamese more recently entered the U.S. as refugees, mostly with limited human, social, and financial capital, it is not surprising that immigrant enclave characteristics are fairly common among Vietnamese ethnic neighborhoods. In addition, Vietnamese ethnic neighborhoods in Major-Continuous and Re-Emerging gateways are more likely to encapsulate the immigrant enclave model than those in other gateways, as shown in Figure 16.

b. Communities of constraint

Communities of constraint do not exist among any of the Asian ethnic neighborhoods in the fifty-seven metropolitan areas in my study. This finding suggests that ethnic neighborhoods for the six Asian ethnic groups are do not symbolize the community of constraint model, which includes a relatively high percentage of native-born residents with low socioeconomic status and high English-language skills. This result diverges from a previous study that found several communities of constraint among Asian ethnic neighborhoods in California (Walton 2015). The most likely explanation that leads to our contrasting results is the application of different thresholds used to identify neighborhood types.[16] More generally, these results suggest that other neighborhood features may be needed to better define the communities of constraint model.

c. Resurgent communities

Figure 15 reveals that native-born resurgent communities appear in neighborhoods defined by all six ethnic groups, though are more common among Japanese ethnic neighborhoods compared to other ethnic neighborhoods. These neighborhoods consist of a high percentage of residents who are native-born and have high education, high income, and high English-language competency. They are particularly prominent in Minor-Continuous and Post WW2 gateways, which suggests these metropolitan areas were most likely to have received large shares of highly skilled immigrants with H-1B visas.

By contrast, foreign-born resurgent communities make up a miniscule share of Chinese, Japanese, and Indian neighborhoods. That is, there is a negligible number of neighborhoods that embody the foreign-born resurgent community characteristics of a high

[16] The differences between my thresholds and Walton's thresholds for categorizing neighborhood models are discussed in Appendix A.

percentage of foreign-born, affluent residents with high English-language fluency. The near absence of foreign-born resurgent communities among Asian ethnic neighborhoods suggests that neighborhoods are unlikely to have a combination of a high percentage of foreign-born residents with fluent English language skills.

d. Socially constrained resurgent communities

Importantly, a new type of ethnic neighborhood model, which I label socially constrained resurgent community, is uncovered. The discovery of this neighborhood category indicates that the theoretical neighborhood models in the literature consist of a diverse set of neighborhood circumstances that have not been thoroughly investigated. This new neighborhood model can be considered a sub-set of the broad foreign-born resurgent community model. Akin to the foreign-born resurgent community category, the socially constrained resurgent community model consists of a high percentage of affluent foreign-born residents with high education levels. The characteristic that differentiates the new neighborhood model from the foreign-born resurgent community model is English language ability, which signifies linguistic acculturation or linguistic cultural capital. As such, the foreign-born resurgent community is home to a high percentage of foreign-born residents with both financial and linguistic cultural capital, whereas the socially constrained resurgent community model comprises of a high percentage of foreign-born inhabitants with economic capital but not linguistic cultural capital. The name of this neighborhood type thus stems from the fact that the lack of linguistic cultural capital may be a socially constraining factor for residents in these neighborhoods to integrate with the majority white population in the United States.

The socially constrained resurgent community model particularly prevails among Chinese, Korean, and Indian ethnic neighborhoods. These well-resourced neighborhoods

provide education, health, financial services, as well as social networks, for recent immigrants with poor English skills. This neighborhood model is more prominent among Re-Emerging and Minor-Emerging gateways.[17] With increasing flows of Asian immigrants possessing an assortment of socioeconomic, cultural, and demographic characteristics, this newly discovered neighborhood category is important to consider in future research. Embracing new and different neighborhood types allows scholars to better understand and investigate the varying life-course trajectories and residential experiences of diverse groups.

K. Discussion and conclusion

By employing a multi-dimensional approach to examine the contemporary residential patterns of six Asian ethnic groups across fifty-seven metropolitan areas that are categorized within seven different immigrant gateway types, this project makes strides in providing a deeper understanding of the heterogeneity and complexity of residential patterns of Asian ethnic groups. Specifically, it unveils three major implications – methodological, empirical, and conceptual.

The first implication of my study is methodological. Echoing arguments made in Massey and Denton's (1988) seminal article that outlines five measurements of residential segregation, this study underscores the significance of adopting a multidimensional approach to understand the breadth and depth of residential patterns. My study shows that using measures of evenness, isolation, and clustering leads to different results with regard to which Asian ethnic group is the most segregated. The dissimilarity index, which measures evenness, suggests that Vietnamese are the most segregated and Filipinos the least. The isolation measurement, which denotes exposure, indicates that Chinese and Asian Indians are the most

[17] Although a sizeable share of neighborhoods in Former gateways are categorized as the socially constrained resurgent community model, I do not discuss this finding given that I attributed the neighborhoods in Former gateways as outliers.

segregated and Japanese the least, though this result can be attributed to the relative population size of each of these groups. Clustering reveals that Filipinos are the most segregated and Chinese are the least, though this pattern could be a product of the operationalization approach. In any event, each measure of segregation focuses on distinct concepts and captures specific aspects of the residential experiences, and each thus leads to different results. The different patterns that emerge from each of these segregation dimensions underscore the significance of embracing and leveraging various axes of measurements that are available to studying residential segregation and that are more appropriately aligned with the researcher's conceptual definition of segregation. A number of scholars have already started to use multiple dimensions of segregation to broaden our understanding of residential patterns (e.g., Iceland et al. 2014). Future research should continue to employ different segregation measurements, rather than continually using the most common measures, in particular the dissimilarity index.

The second contribution of this project is empirical and practical. There are evident differences in residential patterns among Asian ethnic groups, which are consistent with the unique historical and recent immigration movements of each group. For example, instances of lower segregation between Japanese and non-Hispanic whites align with the fact that Japanese have had fairly low immigration rates since the end of WW2 and are the only Asian group with a majority native-born population (Pew Research Center 2013). These characteristics of the Japanese population suggest that Japanese may be more integrated into American society and with the majority white population than other Asian ethnic groups. In addition, Japanese have high interracial marriage rates with whites, which is a key benchmark for assimilation (Hwang et al. 1997; Min and Kim 2009). On the other hand, high levels of segregation between Vietnamese and whites as well as higher shares of non-Hispanic blacks and Hispanics in Vietnamese neighborhoods are consistent with the fact that Vietnamese

arrived more recently as refugees with very limited resources and did not have the liberty to choose where to reside, but were instead forced to locate to certain areas by the U.S. government. These variations in settlement dynamics across groups reveal important practical differences in the process of assimilation, as well as significant implications for the life course trajectories and prospects of integration for different Asian groups.

Moreover, these different residential patterns and immigration trends across Asian ethnic groups corroborates and reinforces ongoing calls among only a small number of scholars to cease using the broad pan-ethnic Asian grouping and to focus on different Asian groups. Only by disaggregating the umbrella Asian category into specific ethnic groups will future research be able to continue to provide accurate and in-depth pictures of the residential patterns experienced by a heterogeneous population.

In addition to finding differences across Asian ethnic groups, this study has uncovered differences in residential patterns across immigrant gateway types. These differences suggest that an assortment of metropolitan-level ecological factors – including the age of the metropolitan area, the sprawling characteristic of the metropolitan area, and the period in which the metropolitan area has received Asian immigrants – are also relevant for understanding the settlement patterns of Asian ethnic groups across places.

For instance, differences in segregation levels across gateways appear to be consistent with the age of the metropolitan area. Dissimilarity scores are higher in older and more traditional metropolitan areas, namely Former and Major-Continuous, than in newer metropolitan areas, specifically Major- and Minor-Emerging gateways. With these findings, I am able to weigh into the debate among scholars on the question of how segregation levels vary between traditional and new gateway types. Specifically, my findings parallel Park and Iceland's (2011) results, which posit that segregation levels are higher among immigrants in more traditional gateways than newer destinations. My study, therefore, contradicts Hall's

(2013) findings that new destinations exhibit higher levels of segregation for immigrants than traditional gateways.

Moreover, differential patterns of ethnic neighborhood location conform with the distinctive sprawling characteristics of metropolitan areas. Suburban neighborhoods are more common in Former gateways, which are older and relatively more compact metropolitan areas. According to the 2014 Sprawl Index[18] developed by Smart Growth America, 4 out of the 7 Former metropolitan areas are considered compact and connected regions. In comparison, urban neighborhoods are more prominent in Minor-Emerging gateways, which are newer and more sprawling metropolitan areas. The 2014 Sprawl Index classifies 8 out of the 9 Minor-Emerging metropolitan regions as sprawling areas.

Another ecological factor shows that the different numbers of ethnic neighborhoods across gateways cohere with the period in which a metropolitan area received high Asian immigration rates. More ethnic neighborhoods are found in Post WW2 and Re-Emerging metropolitan areas than in other immigrant gateways. These two regions were the destinations for the major wave of continued immigration from Asian nations that occurred as a result of the enactment of the Immigration and Nationality Act of 1965, which abolished the national-origins quota system. The metropolitan areas that received higher than average shares of foreign-born populations during this period currently have a large share of the total Asian population in the nation. Therefore, the demographic structure in Post WW2 and Re-Emerging gateways appears to be conducive to generating high concentrations of groups in one cohesive area, as well as fostering stronger and more supportive ethnic infrastructures and resources to serve group members.

[18] The 2014 Sprawl Index developed by Smart Growth America is a composite score of the following four factors: development density, land use mix, activity centers, and street accessibility. The average Sprawl Index score is 100. Metropolitan areas with scores less than 100 are considered more compact and connected areas; metropolitan areas with scores more than 100 tend to be more sprawling.

The metropolitan-level ecological attributes that I have described are consistent with the different residential patterns across gateways. These differences indicate that settlement patterns should be examined beyond the simple dichotomy of new versus traditional immigrant destinations. Future research should consider using more distinguished categories of immigrant gateways, such as Singer's (2015) typology that was utilized in this study. Using this immigrant gateway categorization would also help to settle the debate between scholars about whether segregation is higher or lower in new destination gateways, especially since some scholars have previously defined "traditional destinations" with reference to different time periods and without accounting for the historical trends of immigrant groups.

More importantly, these empirical and practical results underscore the need to focus on both differences across groups and differences across places in order to provide a comprehensive understanding of residential dynamics. Previous studies have shown settlement differences across Asian ethnic groups (e.g., Logan and Zhang 2013); likewise, previous research has revealed differences in residential patterns across destination types (e.g., Park and Iceland 2011). However, to my knowledge, my study is the first to show that the intersection of an ethnic group (and its immigration history, mode of entry, and distinctive social and economic characteristics) and an immigrant gateway (and the metropolitan area's ecological structures) is where one can truly understand why a certain neighborhood type or segregation pattern emerges. Dissimilarity and isolation scores are unique to a specific Asian ethnic group and the specific metropolitan area in which the group is located. Similarly, a particular type of neighborhood tends to arise for a certain ethnic group in a certain type of place.

For example, 1 in 4 Asian Indian neighborhoods in Re-Emerging gateways are characterized as the socially constrained resurgent community model. These Indian neighborhoods contain a high share of affluent and skilled foreign-born immigrants with low-

English proficiency. The emergence of these neighborhood types among Asian Indian neighborhoods is consistent with the fact that Asian Indians comprise the largest share of H-1B visa recipients and thus are likely to be skilled, affluent, and have more opportunities to work in STEM fields. More importantly, the fact that a sizeable share of these Indian neighborhoods is located in Re-Emerging metropolitan areas, such as Philadelphia, Minneapolis, Portland, and Seattle, aligns with the fact that these cities are home to relatively large healthcare industries and technology hubs, which thus provide the labor market that attracts those holding H-1B visas. In comparison, 5 percent of Asian Indian neighborhoods in Major-Continuous gateways, including New York, Boston, and Chicago, are classified as the socially constrained resurgent community model, which indicates that the ecological and institutional development of these metropolitan areas is less conducive for creating these types of neighborhoods among Asian Indians. Accordingly, this study illuminates and highlights the importance of examining the intersection of variations across ethnic groups and variations across immigrant gateway types when studying residential patterns. Differences across groups, including their history of migration, point in time of arrival and mode through which they arrive, and differences across places, such as the age and ecological structure of local cities, appear to simultaneously shape the different settlement patterns that appear.

The third and final implication of this study is conceptual. This study finds evidence that the residential patterns across Asian subgroups are consistent with the spatial assimilation, segmented assimilation, and resurgent ethnicity frameworks. These theories, however, are more relevant to some Asian subgroups than others.

Immigrant enclaves represent a sizeable share of the non-residual Vietnamese ethnic neighborhoods, which suggests that the spatial assimilation is a pertinent framework in this case. However, the immigrant enclave model is not a very common neighborhood type among the neighborhoods of the other five Asian groups. This study thus echoes earlier

scholars' concerns about the pertinence of the spatial assimilation theory for immigrant groups in the contemporary period (Alba et al. 2014; Logan et al. 2002). Indeed, Alba et al. (2014) argued for the need to modify scholars' understanding of the role of immigrant enclaves, given the legal status of Hispanic immigrant families in the present political climate.

The sizeable concentration of non-Hispanic blacks and Hispanics in Vietnamese and Filipino neighborhoods indicates that the segmented assimilation perspective, specifically the downward trajectory, appears to be germane. This framework suggests that residing and interacting with other racial/ethnic minority groups may limit possible assimilation trajectories and negatively affect life-course outcomes (Zhou 2007; Alba and Nee 1997). This finding among Vietnamese residential patterns, in particular, somewhat parallels Bankston and Zhou's (1997) study that found evidence of segmented assimilation among Vietnamese immigrants. Nevertheless, the diverse composition of Vietnamese and Filipino ethnic neighborhoods also signals the presence of global, multi-ethnic neighborhoods, which hints at two other processes – buffering and white flight. The sizeable share of non-Hispanic blacks and Hispanics in Vietnamese and Filipino ethnic neighborhoods suggests that these neighborhoods are places where Vietnamese and Filipinos act as buffers between white and black residential attainment. Residential integration is thus possible in these neighborhoods, according to the buffering hypothesis. Yet, the lower concentration of whites in these two neighborhoods suggests that white flight might also be occurring. Future research is thus needed to clarify whether and how these different phenomena are occurring in Vietnamese and Filipino ethnic neighborhoods.

The presence of resurgent communities across ethnic neighborhoods defined by all six Asian ethnic groups provides general support for the resurgent ethnicity framework, specifically in ethnic neighborhoods with a high percentage of native-born residents. The

resurgent ethnicity framework highlights the degree to which neighborhoods are formed, with specific reference to immigrants' preferences and desires to live with co-ethnics in isolated neighborhoods (Wen et al. 2009; Kim and White 2010). This framework clearly provides a different avenue to analyze residential patterns of Asian groups, thereby addressing some scholars' suspicions about the relevance of the spatial assimilation model for current immigrant groups, specifically groups arriving with financial capital.

However, this notion of "preferences" in the resurgent ethnicity framework is an amorphous category that captures a broad set of motives, which have not been thoroughly examined or discussed in the literature. Indeed, the discovery of the socially constrained resurgent community model, particularly among Chinese, Korean, and Asian Indian ethnic neighborhoods, suggests that existing concepts are still not sufficient for providing an in-depth understanding of settlement patterns of Asian groups.

This new neighborhood category offers scholars a possible direction toward refining the theoretical models. Specifically, the socially constrained resurgent community model serves to focus our attention on specific explanations that fall under the broad idea of "preferences." The dynamics in this new neighborhood model postulate that financial and linguistic cultural capital can be decoupled, especially for foreign-born immigrants. Various forces may influence the formation of this new neighborhood, including (i) a familiarity explanation, such as groups being able to access high-quality resources while interacting with others who speak their own language due to their limited English-language skills; (ii) a cultural preservation motive, such as the retention of some of the cultural practices and traditions of their ancestral homeland; or (iii) a social protection mechanism to avoid possible discrimination in the workforce or in daily settings due to their high-status and limited English abilities.

In addition to these individual- and group-level explanations, structural conditions may also factor in to the emergence of the socially constrained resurgent community model. An example of a structural feature could be proximity to occupations that require high skills but little English fluency. Although I propose a few possible motives under the "preferences" umbrella for residing in ethnic neighborhoods, it is beyond the scope of this study to analyze these different explanations. Continued efforts are thus needed to refine the traditional theoretical ethnic neighborhood types. Specifically, future research is needed to explore and investigate the various social, economic, and political benefits or protection mechanisms of clustering in ethnic neighborhoods.

Furthermore, this study offers several potential avenues for future work. This study considers a few metropolitan-level ecological arrangements that are consistent with residential patterns across gateways, including the age of a metropolitan area and the period in which a metropolitan area received immigrant groups. However, other ecological structures should also be investigated to better understand the residential patterns of Asian subgroups, including the housing stock in a metropolitan area or the legacy of institutional segregation practices. Moreover, the spatial concentration of groups in certain parts of ethnic neighborhoods, as shown in the spatial visualizations, suggests the need to better understand the ethnic structure *within* ethnic neighborhoods. Such investigations would provide an even more comprehensive perspective on how ethnic neighborhoods form or function to support ethnic groups. Finally, the neighborhood types are constructed based on four variables that do not capture the full spectrum of possible neighborhood traits. Future work should consider including other neighborhood features, such as poverty, percentage of residents who are U.S. citizens, and share of residents that are part of the second-, third-, and fourth-generations. Of course including more variables increases the number of permutations of possible

neighborhood types, which means researchers need to carefully scrutinize which neighborhood types are most relevant.

In summary, by disaggregating the pan-ethnic Asian group into specific ethnic groups and by focusing on more than a handful of metropolitan areas or immigrant destinations, this study provides a more comprehensive descriptive analysis of the residential patterns of Asian ethnic groups than earlier studies on the topic. The residential patterns of Asian ethnic groups are heterogeneous and complicated. No one single dimension or one theoretical model can clearly and unambiguously explain the diverse settlement patterns and the social realities that Asian ethnic groups face. As the Asian population in the U.S. continues to grow, a more complete understanding of the diversity and complexities of residential patterns across Asian ethnic groups and across an array of geographic places becomes ever more important, especially in order to advance scholars and policy-makers' endeavors to grasp the intricate association between residential dynamics and broader configurations of inequality.

Appendix A: Supplementary Analyses

1. Asian alone versus Asian alone or in combination

The census provides data for three different Asian categories: (1) those reporting an Asian group alone, (2) those reporting an Asian group alone in combination with another Asian group but no other non-Asian race; and (3) those reporting an Asian group alone in combination with another major racial or ethnic group that is not Asian. Analysis for each of these groupings follows different theoretical assumptions and implications. The first category, Asian alone, suggests these individuals are more likely to have a strong ethnic identity (Iceland et al. 2014). In comparison, the second and third groupings, implies these individuals have an interracial background.

I expect that the residential patterns of Asian alone versus Asian alone or in combination would vary. Previous research has shown that dissimilarity scores for Asian alone or in combination are relatively lower than that for Asian alone (Iceland et al. 2014). Furthermore, recent research has found that residential mobility patterns of mixed-race couples, especially those with a black partner, experience different neighborhood poverty outcomes than monoracial couples and mixed-race couples without a black partner (Gabriel 2018b). These dynamics also vary by the gender composition of the couples (Gabriel 2018a). Although these studies focused on black-white mixed-race couples, the underlying argument that residential patterns and dynamics vary for single-racial versus inter-racial individuals is pertinent.

As such, I use Asian alone population counts because I would like to capture the residential experiences of members solely from specific Asian ethnic groups. This strategy allows me to highlight the ethnic neighborhood compositions and dynamics of individual Asian ethnic groups, which is the goal of this study. Past research has also noted that the Asian alone grouping is a "satisfactory basis for exposition of Asian segregation" (Iceland et

al. 2014:609). In addition, the interracial processes that are denoted by using the Asian alone or in combination category are beyond the purview of my study, research questions, and theoretical framing.

2. Sensitivity checks

I utilized Local Moran's I to identify ethnic neighborhoods for each Asian ethnic group in each of the 57 metropolitan areas in my study. Specifically, this study employs Asian alone group counts, the queen's adjacency definition to define neighboring tracts, and all tracts in the metropolitan area. To assess the robustness of these criteria, the following sensitivity checks were conducted:

a. Asian alone versus Asian alone or combination
b. Queen's adjacency definition to define neighboring tracts that form a cluster versus a distance-based definition (6km and 12km). 6km was chosen as the smallest distance to define a cluster because that is the average distance that an average American citizen travels to go grocery shopping
c. All tracts in a metropolitan area versus tracts with an Asian population greater than 100

For each of the three criteria, sensitivity checks included examining the occurrence, location, and size of ethnic neighborhoods. The results remained substantially equivalent for each robustness check.

3. Walton's versus my thresholds

Walton (2015) developed a neighborhood typology to understand the neighborhood patterns of four Asian ethnic groups in California. She used socioeconomic status (income and education) and nativity to classify neighborhoods into each of the three models –

immigrant enclave, community of constraint, and resurgent community. Walton (2015) defined a socioeconomic status cluster as one where the median household income is $60,000 or above, and the percentage of residents with a college degree is 25 percent or higher. The threshold for median household income was based on a combination of California's average income in 1999, which was $47,500, and San Francisco and Los Angeles' higher average income levels at the time. The cutoff for education was based on the fact that 24.4 percent of the total U.S. population in 2000 had a bachelor's degree or higher (Walton 2015). To identify a foreign-born neighborhood, Walton set a threshold of 30 percent of residents in the cluster are foreign-born, which was chosen because it was approximately the mid-point of the top quartile among California counties in 2000, whereby Q4 = 24.8 and Q3 = 36.8.

Although Walton (2015) established a useful neighborhood typology to understand residential patterns, there are a number of a limitations of her approach. First, two of the three thresholds are specific to the California context in 2000. They are thus not generalizable beyond California and beyond the year 2000. A second limitation of Walton's methodological strategy is that the cutoff for nativity – the midpoint of the top quartile – is set fairly high. This means that ~87.5 percent of neighborhoods could fall below the cutoff, which leads to a scenario where there are approximately 10 native-born neighborhoods for every one foreign-born cluster. With this strategy, biased results towards native-born neighborhoods are more likely to arise. A final shortcoming of Walton's (2015) study is that she only accounted for the socioeconomic status and nativity of residents in a neighborhood, which limits the neighborhood conditions that groups are exposed to.

In my study, I adopt measures that address these shortcomings. Given that my study examines neighborhoods in fifty-seven metropolitan areas with different social, historical, and ecological configurations, it is not appropriate to apply definitive and absolute criteria to my analysis, such as 25 percent for the education category or $60,000 for median income.

Although the levels that I set are relative to the local metropolitan area context, I use the 33rd and 66th percentiles as thresholds, instead of definitive percentages or values. My approach also addresses Walton's (2015) second limitation that I discussed above. Specifically, I set percentiles that allow for an even distribution of neighborhoods in the high and low categories. In addition, I include the level of English-language fluency in the neighborhood as an additional neighborhood context, which addresses Walton's (2015) third limitation.

As a sensitivity check, I applied Walton's strategy to the neighborhood models in each of the fifty-seven metropolitan areas in my study. For example, I used the mid-point of the top quartile of the distribution of percentage native-born in a metropolitan area to designate native-born versus foreign-born neighborhoods. I also only used socioeconomic status and nativity to label the neighborhoods. Using Walton's methodological approach, a majority of ethnic neighborhoods for each of the six groups fell under the resurgent community model, which is a neighborhood that contains a high percentage of affluent residents regardless of whether they are foreign- or native-born. Communities of constraint, which are neighborhoods that contain a high percentage of poor native-born residents, were the second most common neighborhood type, using Walton's criteria. These results are not surprising given that Walton's cutoff for nativity at the 87.5th percentile means that a disproportionate number of neighborhoods fall in the native-born neighborhood categories. As such, I develop and operationalize neighborhood models that improve upon Walton's criteria in order to better illuminate the neighborhood patterns of Asian groups.

Appendix B: Additional Tables and Figures

Table 7. Detailed descriptions of immigrant gateway types from Audrey Singer's (2015) typology

Immigrant gateway type	Description
Former Gateway	Once major immigrant ports of entry, these destinations had higher proportions of immigrant populations than the national average between 1900 and 1930. From 1930 onwards, these gateways have had a foreign-born share below the national average.
Major-Continuous Gateway	These gateways have experienced above-average shares of foreign-born populations for every decade in the past century. These metropolitan areas continue to house approximately one-quarter of all immigrants across the nation.
Minor-Continuous Gateway	Minor-Continuous gateways had shares of immigrant populations above the national average from 1900 to 1950, and above or near the national average in 2014.
Post-World War II Gateway	Before the 1950s, these gateways had relatively small immigrant populations. After World War II, foreign-born populations rapidly increased. Some of these metropolitan areas now rival the status of major-continuous gateways. Around 30 percent of immigrants nationwide live in these gateways combined.
Re-Emerging Gateway	Similar to former gateways, re-emerging gateways had higher than average immigrant populations in the early 20th century, followed by low levels of immigration. However, in the late 20th century and into the 21st century, these metropolitan areas have experience rapidly growing immigrant populations, thereby re-emerging as significant immigrant gateways.
Major-Emerging Gateway	With growth in foreign-born populations in the late 20th century, these metropolitan areas have become major destinations for immigrants only recently. They had small immigrant populations for most of the 20th century, but the share of foreign-born populations in these metropolitan areas has typically surpassed the national average since 1990 and the foreign-born populations grew faster than the national rate during one of the last three decades of the 20th century.
Minor-Emerging Gateway	These metropolitan areas have smaller immigrant populations than the other six gateway types, but have seen extraordinary growth in their foreign-born populations since 1990. The immigrant growth has been at least three times the national average in either the 1990s or the 2000-2014 period.

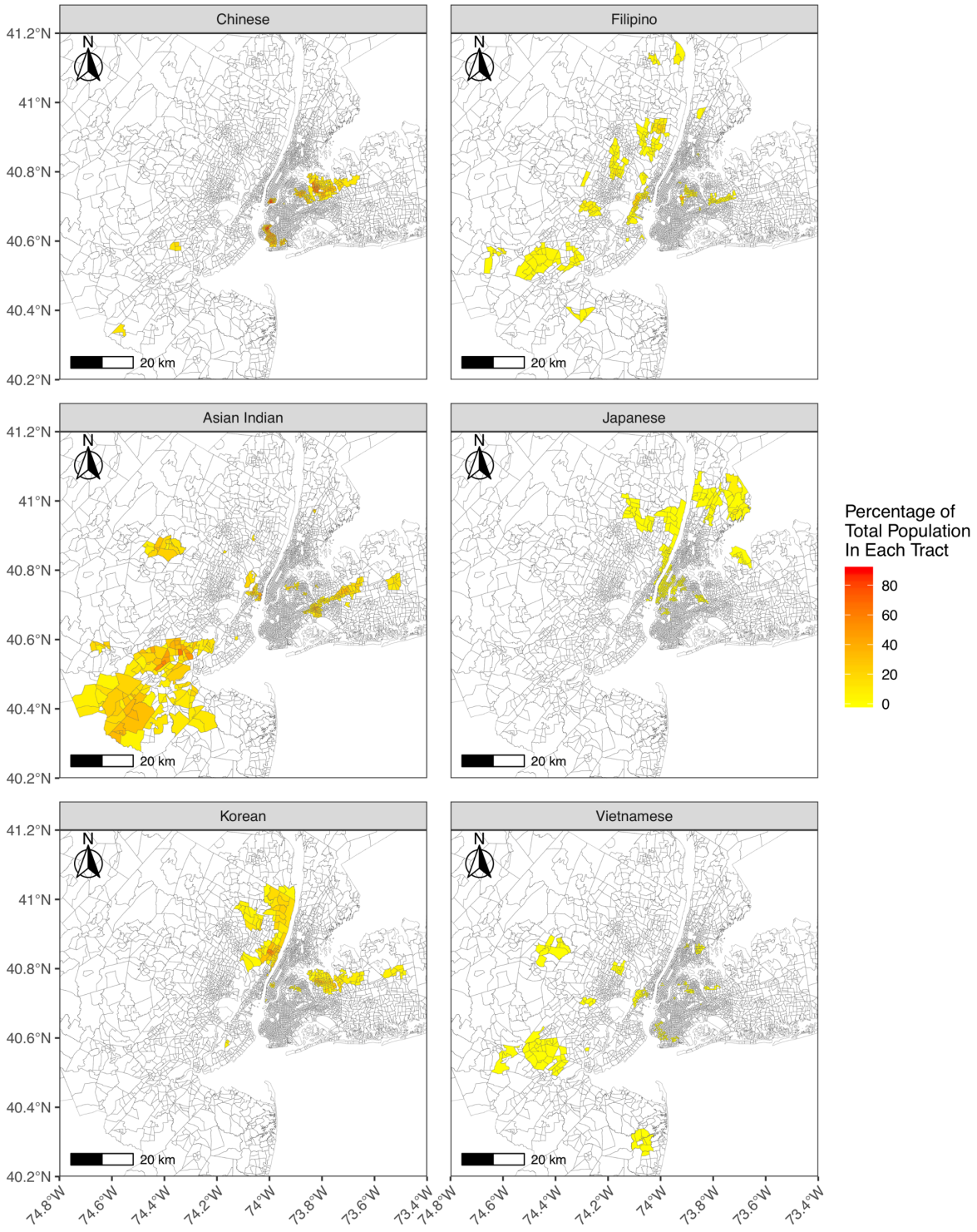

Figure 17. Concentration of groups in their own ethnic neighborhoods in New York-Northern New Jersey-Long Island, NY-NJ-PA metropolitan area (example of Major-Continuous gateway), 2010

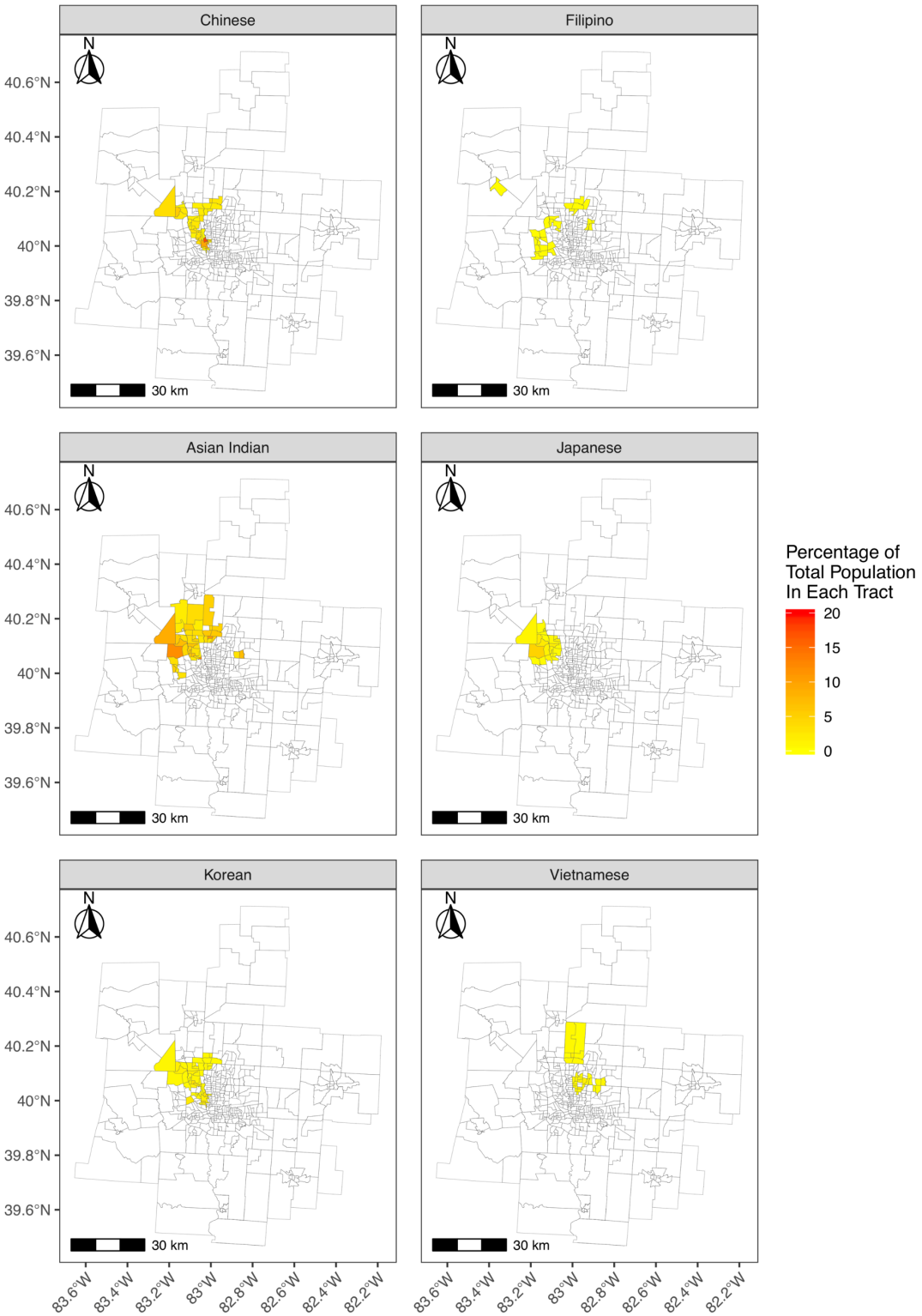

Figure 18. Concentration of groups in their own ethnic neighborhoods in in Columbus, OH metropolitan area (example of Minor-Emerging gateway), 2010

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