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**Where They Live and Go:
Immigrant Ethnic Activity Space and Neighborhood Crime in Southern California**

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**Where They Live and Go:
Immigrant Ethnic Activity Space and Neighborhood Crime in Southern California**

Abstract

The current study advances the literature by simultaneously accounting for the geographic location of immigrant residences and the location of ethnic businesses, and considers their proximity to one another. We argue our alternative measure, which we term Immigrant Ethnic Activity Space (IEAS), more fully captures the ecology of immigrant communities. Using data from several sources to capture neighborhoods in the Southern California region, we constructed IEAS measures for the seven largest ethnic groups in the region, including groups from Mexico, China, Korea, Vietnam, Philippines, Armenia, and El Salvador. These measures reflect where immigrants live and where they go for various ethnic-related routine activities, as well as the distance between the two. We estimated a set of negative binomial regression models to examine the effects of the IEAS measures on neighborhood violent and property crime rates. We find that our IEAS approach is distinct from traditionally-employed measures of immigrant neighborhoods. We also find that IEAS measures have negative associations with both violent and property crime, in general. The current study proposes and develops an alternative approach to conceptualizing immigrant neighborhoods, which more closely aligns with extant theory and should be considered in future research on the immigration-crime nexus.

Keywords: Immigrant, Activity space, Crime, Neighborhood

Bio

Young-An Kim is an Assistant Professor in the College of Criminology and Criminal Justice at Florida State University. His research interests focus on various areas such as neighborhoods and crime, criminology of place, geo-spatial analysis, and immigration and crime. Besides criminology, he is interested in sociology of health, urban sociology, and quantitative research methods.

John R. Hipp is a Professor in the departments of Criminology, Law and Society, and Sociology, at the University of California Irvine. His research interests focus on how neighborhoods change over time, how that change both affects and is affected by neighborhood crime, and the role networks and institutions play in that change. He approaches these questions using quantitative methods as well as social network analysis. He has published substantive work in such journals as *American Sociological Review*, *Criminology*, *Social Forces*, *Social Problems*, *Mobilization*, *City & Community*, *Urban Studies* and *Journal of Urban Affairs*. He has published methodological work in such journals as *Sociological Methodology*, *Psychological Methods*, and *Structural Equation Modeling*.

Charis E. Kubrin is a professor of Criminology, Law & Society (and by courtesy Sociology) at the University of California, Irvine. She has published extensively in the area of neighborhoods and crime, and in particular, on the immigration-crime link.

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Introduction

Over the last few decades, a substantial body of literature has developed that examines how immigration and crime are related across place, including a recent meta-analysis of this published literature Ousey and Kubrin (2018). A common feature of nearly all studies is that they define immigrant neighborhoods based on an area's residential population. That is, studies measure the percent immigrants residing in a location to capture the presence of immigrant communities. Although not an unreasonable strategy, this approach pays little attention to the places where immigrants work, shop, and attend social events and religious services. Little consideration has been given to whether this is the ideal way to conceptualize and measure immigrant neighborhoods.

In contrast to the criminological literature, the literature on ethnic enclaves often defines immigrant communities based on both where immigrants reside and where they work, shop, and perform other activities (Wilson and Portes 1980; Portes and Manning 1986; Portes and Rumbaut 2014). In the ethnic enclave literature, there is typically a presumption of geographic proximity between these locations. However, this need not always be the case, and it remains an empirical question as to whether—and what extent—these are intersecting and overlapping spaces. Nonetheless, the portrayal of immigrant communities in the ethnic enclave literature may be more in line with an ideal type of ethnic enclave, i.e., the apocryphal Chinatown, Koreatown, Little Saigon, etc. (Wilson and Portes 1980; Portes and Manning 1986, 2005; Portes and Rumbaut 2014; Portes and Jensen 1992). At the same time, this ideal community type may be a statistical rarity, and may not capture the typical environment of immigrants of various groups—

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an issue that is salient for researchers wishing to study the relationship between immigrant neighborhoods and crime. In trying to document how immigration and crime are related across place, we offer a preferred approach that builds on the insights of the ethnic enclave literature and that simultaneously accounts for the geographic location of *both* immigrant residences (where they live) and ethnic businesses (where they work and shop), as well as their proximity to one another.

We argue that our approach is preferable to existing strategies, which do not fully capture an ecology of immigrant communities because: (1) neighborhood residents, including immigrants, typically do not perceive their own neighborhoods as spatially restricted to specific residential or administrative boundaries; (2) immigrants, in particular, are more likely to construct their daily routine activities further from their residential areas if they prefer to visit centers with a high density of ethnic businesses that provide services and goods for immigrants (as well as a sense of cohesion and protection, so-called “enclaves”); and, (3) the routine activities of traveling from residential areas to business centers (including immigrant/ethnic ones) tend to follow a distance decay function due to cost and time of traveling. In making our case, we build on the theoretical idea that some immigrant neighborhoods have the potential for more cohesion and informal social control, which can reduce crime, but argue that to truly assess this requires a more refined way to measure these neighborhoods.

Examining the distribution of immigrant populations and ethnic businesses across the Southern California region, the current study captures immigrant concentration by simultaneously considering immigrant residential population as well as ethnic businesses for various immigrant groups, and examines the extent to which they are related to neighborhood crime. Our approach, which we term *Immigrant-Ethnic Activity Space (IEAS)*, uses Census data

Immigrant-ethnic activity space to capture immigrant residential populations and business data to measure ethnic businesses, and utilizes a distance decay function to measure expected movement patterns between daily activity locations of immigrants. In light of our study context, we examine the Immigrant-Ethnic Activity Space of the seven largest ethnic groups from: Mexico, China, Philippines, Vietnam, Korea, Armenia and El Salvador. We estimate a set of models to empirically assess if our novel measures of immigrant concentration for these ethnic groups are associated with violent and property crime rates in the Southern California region, while accounting for the effects of structural characteristics of neighborhoods. In the subsequent sections, we discuss the theoretical motivations of our approach as well as describe how we construct our measures of IEAS.

Defining Immigrant Neighborhoods

Research typically finds that the relationship between immigration and crime across place is essentially null, or when there is a significant relationship, it is most often negative and very weak (Ousey and Kubrin 2018). Various theoretical mechanisms for this relationship are identified in the literature, but a particularly salient one is the enhanced social control and strong social and cultural ties that often develop within immigrant communities (Kubrin and Ishizawa 2012; Desmond and Kubrin 2009; Kubrin and Ousey 2009; Martinez 2006; Martinez and Valenzuela 2006). In this view, immigrant neighborhoods have greater cohesion among residents given their shared and similar backgrounds, which enhances their ability to cooperate in addressing crime problems that might arise. This argument builds on social disorganization theory by positing that such neighborhoods will have greater capacity for informal social control (Sampson and Groves 1989). It also dovetails with the ethnic enclave literature, which focuses

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on both the residence and businesses of immigrant and ethnic groups, and how the social activity
in such business districts can bring about greater cohesion.

Indeed, an extensive literature on immigrant/ethnic enclaves suggests the importance of simultaneously considering the presence of ethnic businesses, co-ethnic employment and immigrants' daily lives to understand the location and character of immigrant neighborhoods. An ethnic/immigrant enclave is defined as an area with a large population of co-ethnics, businesses, and employment; thus, it provides ethnic goods and services to residents of the community (Wilson and Portes 1980; Portes and Manning 1986, 2005; Portes and Rumbaut 2014; Portes and Jensen 1992). Ethnic/immigrant enclaves largely shape the routine activity patterns of immigrants because they provide the various institutions and services needed by immigrants with fewer cultural burdens and language barriers (Breton 1964; Aldrich and Waldinger 1990; Zhou 2004). Moreover, enclaves can be a locus of social interactions among co-ethnics that allow them to share resources and information. The enclave literature highlights the importance of distinguishing between members of different immigrant groups in a neighborhood for fostering an enclave, implying a need for scholars to distinguish between specific immigrant groups rather than using a combined measure of all immigrants in a neighborhood.

Relatively few studies in the literature unpack immigration in order to consider the wide variety of immigrant groups that exist. Yet immigrants migrate to the U.S. from various countries and world regions and bring with them different cultural, political, and economic backgrounds. They also have different official receptions from the U.S. government and experience diverse processes of acculturation. This diversity has implications for crime. In a recent study, Kubrin, Hipp and Kim (2018) examined how the effect of immigrant concentration on neighborhood crime differs by various immigrant groups, focusing specifically on different

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racial/ethnic categories of immigrants, regions of the world that immigrants emigrated from, and where immigrants co-locate once they arrive in the U.S. Their findings reveal considerable variation regarding the effects of immigrants on neighborhood crime and raise questions about whether these findings are driven by dissimilar spatial patterns of daily activities by different ethnic groups.

Beyond the necessity of distinguishing diverse immigrant groups, there is the challenge of conceptualizing and operationalizing the appropriate neighborhood context for immigrants. As previously noted, nearly all research defines the neighborhood for immigrants based on where immigrants live. However, this approach may not be accurate in many contexts and potentially mischaracterizes a spatially dynamic aspect of immigrant neighborhoods. Focusing only on place of residence may omit critical routine activities of residents because activity spaces are not restricted only to one's own residential area. This is especially the case for immigrants, given that this population may travel longer distances if they have a strong preference to patronize ethnic businesses or attend cultural events and religious services, which may not be located within their neighborhood. This discussion highlights the need to conceptualize immigrant neighborhoods by incorporating information on residential locations, routine activities of immigrants driven by ethnic businesses, and the distance between residences and businesses to more accurately examine the association between immigration and crime in neighborhoods. We do this by introducing a concept we call, Immigrant-Ethnic Activity Space (IEAS).

Conceptualizing Immigrant-Ethnic Activity Space (IEAS)

Our view is that the immigration-crime nexus may be better understood by examining immigrants' activity patterns, which can directly impact the capability of forming cohesion in

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these neighborhoods. Our approach combines the insights regarding the typical spatial patterns of immigrant residents (where they live) and their daily activity patterns (where they travel throughout the day), which we term *immigrant-ethnic activity space* (IEAS). According to Golledge and Stimson (1997), an activity space reflects three components: (1) home and movement near the home; (2) daily activity locations and movements around those locations; and (3) movement and travel between the daily activity locations. As such, activity space constructed based on residential locations (home) and daily routine activities (i.e., work, school, leisure, and shopping) does not assume that residents are physically restricted to their own residential areas.

The first point, *home and movement near the home*, reflects residential areas where immigrants live, which we argue is one important component of IEAS. This is certainly not a controversial argument, as literature on the immigration-crime nexus focuses exclusively on immigrants' residential locations. Immigrants emigrate from different regions of the world and often settle in traditional settlement areas populated by members from their own ethnic group. For example, immigrants from Mexico may first locate in a settlement in a city near the Southern border and then follow routes to specific cities or neighborhoods with large numbers of co-ethnics. Likewise, immigrants from Asia are more likely to arrive and settle in cities along the west coast due to the geographical closeness to their origination countries.

Traditionally well-known immigrant settlements have more immigrants from the same origin sharing common cultural traditions and using the same language. As a consequence, cohesion is heightened due to ethnic homogeneity, which allows immigrants to build strong social networks. Prior studies emphasize the neighborhood contexts of where immigrants arrive and eventually settle (Portes and Rumbaut, 2006) and reveal that traditional immigrant settlements can provide economic, social, and cultural support to their residents, which enhances

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the protective effect of immigrant concentration in neighborhoods for crime rates (Barranco 2013; Harris and Feldmeyer 2013; Ramey 2013). In this way, the null or negative effect of immigrant concentration on neighborhood crime may be explained by the tenets of social disorganization theory and the mechanism of informal social control. Desmond and Kubrin (2009) suggest that areas with high immigrant concentration can provide a sense of cohesion and protection to groups with a lingering feeling of disorientation and displacement associated with migration. This cohesion can generate strong social ties among residents, thereby reducing crime in the neighborhood.

Regarding the second point, *daily activity locations and movements around those locations*, residents (including immigrants) develop what is often referred to as routinized “daily pedestrian activities.” These activities interact with physical environmental characteristics to shape residents’ spatial movement patterns around major routine activity nodes (Brantingham and Brantingham 1995; Brantingham and Brantingham 1993; Brantingham and Brantingham 1984). For example, residents develop daily routine activities based on different locations. They may live in one area but visit other locations for work, shop, and social purposes. Such activities are spatially bounded and entail pedestrian or vehicular movement patterns to get from one location to another. We posit that local ethnic businesses constitute another important component conceptualizing IEAS for studying immigration and neighborhood crime. Immigrants of particular ethnic groups tend to patronize co-ethnic businesses because they provide desirable ethnic goods and services such as restaurants, grocers, bakeries, banks, law-firms, and hospitals with less burden due to language barriers (Portes and Manning 2005). For example, although Korean immigrants reside broadly across the Southern California region (the focus of the current study), their routine activities tend to be spatially bounded near Koreatown in the city of Los

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Angeles as well as a few other areas in northern Orange County, all of which are recognizable ethnic-immigrant business centers for Koreans (Min 1993; Min and Bozorgmehr 2000; Zhou 2004)

At the same time, ethnic businesses must be spatially proximate to immigrant-ethnic settlements in order to secure an ethnic labor supply as well as cultivate ethnic customers. Ethnic businesses can offer employment to immigrants of specific ethnic groups, especially those who came to the U.S. recently, are in need of employment, and do not speak English fluently. Ethnic businesses also offer a forum for social interaction that facilitates mutual trust, neighborhood attachment, social capital formation, and informal social control for residents, which may help explain the crime-reducing effects of immigrant concentration in neighborhoods. This general idea of activity patterns bringing about social interactions that might enhance the cohesion in a neighborhood was developed in Browning and colleagues' idea of eco-networks (Browning and Soller 2014); although we do not attempt to measure specific individual movement patterns, we posit that the general expected movement pattern of ethnic immigrants while they go about their daily activities will enhance cohesion in their home neighborhood, even if the shops they patronize are not specifically in their neighborhood.

The final component to consider when constructing IEAS is *movement and travel between daily activity locations*. That is, we must identify the distance between where immigrants live, movement near the residences of immigrants, and the ethnic businesses that serve as destination points. Given evidence that residents prefer to travel shorter rather than longer distances when patronizing retail establishments (Lentnek, Lieber, and Sheskin 1975; Briesch, Chintagunta, and Fox 2009; Zipf 1949), ethnic businesses are typically geographically close to immigrant-ethnic settlements in order to be most profitable. These businesses are not

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necessarily in their same neighborhood, but in nearby ones. Arguably, only on rarer occasions will immigrants travel a further distance to visit ethnic cultural centers, and only when they are substantially-sized centers that provide superior ethnic services and goods (i.e., in many cities there is a “Chinatown”). Therefore, we posit that the movement pattern between where immigrants live and where the immigrant-ethnic businesses are located (based on a distance decay effect) is critical for conceptualizing IEAS.

We posit that our measure of IEAS more appropriately captures enhanced social and cultural ties among co-ethnic immigrant residents, a form of social organization. Social disorganization theory posits that certain structural characteristics may impede the formation of social ties and cohesion in the neighborhood and thus decrease the level of informal social control. Therefore, the key mechanism of the theory is the breakdown of residents’ ability to informally regulate the neighborhood to keep the community safe from crime and disorder (Morenoff, Sampson, and Raudenbush 2001; Sampson, Raudenbush, and Earls 1997; Kubrin and Wo 2015; Kubrin 2009; Kubrin and Weitzer 2003). Immigrants of specific ethnic groups in the neighborhood can provide new forms of social organization because similar cultural and linguistic backgrounds promote social cohesion and social interactions among those immigrants.

We argue that social cohesion and informal social control from immigrants in a neighborhood should be understood not only in the context of where they reside but also where they tend to perform their routine activities. In a neighborhood with more immigrant-ethnic activities, immigrants may feel strong social ties and mutual trust with other co-ethnics due to fewer cultural burdens and language barriers. Moreover, such an area will serve as a central hub for various social activities for co-ethnic residents (including immigrants) where they meet,

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interact and get to know each other more comfortably. This may heighten informal social control and thus reduce neighborhood crime levels.

Ethnic businesses and corresponding immigrant populations who tend to visit on a regular basis may enhance the guardianship, and thus reduce crime in the neighborhood.

According to Jacobs (1961), areas with more businesses tend to be livelier with more social activities and casual interactions on the street. Such areas are at lower risk of crime due to the enhanced level of natural surveillance and guardianship from eyes on the street. Given that immigrants may regularly visit areas where ethnic businesses are located to access ethnic products and services, a web of public respect and trust can be formed following repeated casual contacts, which may lead to crime control benefits in the area. Again, such interconnected aspects of the immigrant residential population and ethnic businesses in neighborhoods may not be adequately captured by exclusively focusing on one at the expense of the other. For these theoretical reasons, we believe our IEAS approach is likely to better capture the potential informal social control than are strategies that simply measure the residential population of immigrants or the presence of ethnic businesses.

In the current study, we examine the Immigrant-Ethnic Activity Space of the seven largest ethnic groups in the Southern California Region including groups from Mexico, China, Philippines, Vietnam, Korea, Armenia and El Salvador. We determine whether our novel measures of immigrant concentration for these ethnic groups are associated with violent and property crime rates in the region, while accounting for the effects of structural characteristics of neighborhoods (and compare them to the more traditional measure of percent foreign born residents).

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Data and Method

Independent Variables – Constructing the IEAS

The unit of analysis is neighborhoods, operationalized as census tracts in 2010 (n=4,578). The Southern California region (Counties of Los Angeles, Orange, Riverside, San Bernardino, and San Diego) is a diverse region with many immigrant populations from different countries. To measure immigrant-ethnic activity space, we combined data on business establishments in 2011 from Reference USA and data on the residential locations of immigrant groups from the Census 2009-2013 American Community Survey (ACS) 5-year estimates. In light of our study context, we identify the seven largest immigrant groups represented in the Southern California region based upon population size, which yielded immigrant groups from Mexico, China (including Taiwan and Hong Kong), Philippines, Vietnam, Korea, Armenia, and El Salvador. To identify ethnic businesses, we used information on the last names of the business owners from the Reference USA database. To identify if a business is owned by a member of one of these seven ethnic groups, we used the website <http://forebears.io/surnames> to determine the country in which a surname is most prevalent, and classified the ethnicity of the owner to be from this country (Kubrin, Kim, and Hipp 2018).¹ We aggregate the counts of businesses for the seven ethnic groups to the tract level so that we have the total number of business for each group.

To create the index of immigrant-ethnic activity space for each ethnic group, we combined the number of ethnic businesses and the immigrant population for each group as follows:

¹ We acknowledge possible measurement error when using surnames to measure ethnic businesses. However, when we examined maps of ethnic businesses based on our approach, there was considerable face-validity based on our knowledge of the study area.

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$$E_{ij} = \sum_{k=1}^K \frac{p_{ij} b_{ik}}{(p_{ij} + b_{ik})} \cdot \frac{1}{e^{\beta d_{jk}}} \quad (1)$$

where, E_{ij} represents the immigrant-ethnic activity space index for ethnic group i for tract j , p_{ij} refers to immigrant population in tract j for ethnic group i , b_{ik} is the number of ethnic business establishments in tract k for ethnic group i , and d_{jk} is Euclidean distance between tract j and tract k . This measure is summed over all tracts (K) in the study area. We employed an exponential decay function, as shown. β is the distance decay parameter, and we set it to 0.2 as informed by Kwan (1998) and Kane and Kim (2018). An exponential distance decay has several desirable properties, including appropriately handling the focal tract—which is of particular interest here—as well as providing a plausible decay function (Kwan 1998). Note that the numerator *multiplies* the number of immigrants of the ethnic group living in the tract by the number of ethnic business establishments in tract k , whereas the denominator *sums* them; as such, a tract will score higher on the index if it has a larger immigrant population of the particular ethnic group and there are more ethnic businesses in the focal tract or in nearby tracts, whereas a lower value indicates that a tract has fewer immigrants and is farther away from tracts with many ethnic businesses.²

Given the lack of a meaningful metric for this measure, we standardized the values by computing z-scores of E_{ij} . We created the IEAS index for each of the seven ethnic groups; these seven measures were included in separate regression models (although we later estimated a model with all included simultaneously, as described in footnote 8). In addition, we created a single measure of IEAS that summed the raw IEAS measures for the seven groups to capture all

² Note that the raw IEAS score can have a zero value because as presented in the IEAS equation, the numerator is multiplicative of the focal tract immigrant population for each group and the number of ethnic business for the group. That is, if either one of the two has zero value, the raw IEAS score can be zero too. But given that it sums over all tracts in the region through the distance decay parameter, there are in fact no zero values.

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seven immigrant groups in one measure and we include this in additional models as a z-score.

We incorporated distance decay effects in the activity space of immigrants given that immigrants of certain ethnic groups tend to more frequently visit ethnic businesses if they are geographically more proximate to their residential locations. We generated maps based on our immigrant-ethnic activity space measures and found that they reflect our general understanding of the ethnic neighborhoods in the region. We present some of these maps in the Results section.

Dependent Variables

The dependent variables are the number of incidents of violent crime (aggravated assault, robbery, and homicide) and property crime (burglary, larceny, and motor vehicle theft) in the census tract in 2011. The crime data come from the Southern California Crime Study (SCCS), and have been used in prior studies (Kubrin and Hipp 2016; Hipp and Kubrin 2017). Police agencies of cities reported incident-level crime data with geographic information such as addresses or 100 blocks. SCCS classified crime events into violent crime and property crime. Crime events were geocoded for each city separately to latitude–longitude point locations using ArcGIS 10.2, and subsequently aggregated to the Census Tract level. Across these cities, the geocoding hit rate was 97.2 percent, with the lowest value at 91.4 percent. Tracts for which we had crime data (n=3,952) were included in our study.

Control Variables

To control for the standard neighborhood correlates of crime, we include Census indicators of the structural determinants of social disorganization theory from the 2009-2013 ACS 5-year estimates. First, we constructed a *concentrated disadvantage index*, which is a factor

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score computed from a factor analysis of four measures: (1) percent at or below 125 percent of the poverty level; (2) percent single-parent households; (3) average household income; and (4) percent with at least a bachelor's degree (the last two measures had reversed loadings in the factor score). Second, to capture the level of *racial/ethnic heterogeneity*, a Herfindahl index based on five racial/ethnic groups (white, African-American, Latino, Asian, and other race) was computed, which takes the following form:

$$H = 1 - \sum_{j=1}^J G_j^2 \quad (2)$$

where G_j indicates the proportion of the population of racial/ethnic group j out of J groups. We also control for the presence of racial/ethnic minorities including the *percent African-American* and the *percent Latino*. To measure *residential stability*, we utilize a measure of the percent home owners. We also account for the percent *occupied housing units* to measure vacancies, *population density*, and *percent aged 16 to 29*. Finally, we include measures of *land use characteristics* to capture the physical environment using Southern California Association of Government (SCAG) 2008 Land use data. We constructed measures of the percent of the land area that is: 1) *industrial*; 2) *office*; 3) *residential*; and, 4) *retail* ("other land use types" is the reference category). Table 1 shows the summary statistics for all variables included in the models.

<<< Table 1 about here >>>

Analytic Strategy

Because the dependent variables are counts of crime events, their distributions are unlikely to be normal. Accordingly, we estimated negative binomial regression models to handle

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the count nature of the data, as well as the observed over-dispersion (Osgood, 2000). We included (logged) population as an exposure term in all models and constrained the coefficient to equal 1, which effectively makes the outcomes crime rates. We employed a fixed-effects modeling strategy by including dichotomous variables for each city, which allows us to test changes of crime within a particular city rather than across cities. We account for possible spatial dependence by including spatially lagged independent variables of key socio-demographic measures in the models. These measures were created based on an inverse distance decay function with a cutoff at 5 miles around each tract. The areas beyond 5 miles have zeros in the W matrix. The spatial weights matrix (W) is row standardized and multiplied by the matrix of values for the Census measures. Including spatially lagged independent variables in the models is a conventional way to account for spatial effects if theoretically justified (Anselin 2002; Florax and Folmer 1992), and we follow extant research and include spatially lagged independent variables (Bernasco and Block, 2011; Haberman and Ratcliffe, 2015; Kubrin and Hipp, 2014).

We estimated a series of models in which measures of the IEAS are included while controlling for the neighborhood structural characteristics. The general form of these models is:

$$E(y) = \exp(\alpha + \beta_1 \mathbf{X} + \beta_2 \mathbf{Z} + \beta_3 \mathbf{WZ} + \beta_4 \mathbf{J}) \quad (3)$$

where y is the dependent variable (the number of crime events), α is an intercept, $\mathbf{X}$ represents a matrix of measures of IEAS, $\mathbf{Z}$ is a matrix of the structural characteristic variables, $\mathbf{WZ}$ is a matrix of the spatially lagged structural characteristic measures, and $\mathbf{J}$ is a matrix of the dummy variables for cities. We checked the Moran's I values of the residuals from the models to assess if there is any additional spatial autocorrelation and found no such evidence. The Moran's I values of residuals ranged from 0 to 0.03, which implies that the models adequately account for the spatial clustering of crime.

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We estimated three sets of models for each outcome variable. First, we estimated baseline models using the common approach in the literature of including only a measure of the percent of the tract population that is foreign born overall, and then for each of seven ethnic groups. Second, we estimated a set of baseline models that instead include the number of ethnic businesses for each of the seven groups. The third set of models introduce our IEAS index measures, allowing us to compare results using our IEAS index to results obtained from the more traditional measures of immigrant population based on residence or on the location of ethnic business.

Results

First, we assessed whether there are meaningful differences between our immigrant-ethnic activity space index and more traditional measures of immigrant concentration. To do this, for each of the seven immigrant groups we computed the correlations between percent immigrants in the tract, the number of ethnic businesses, and our immigrant-ethnic activity space index. The results are presented in Table 2. We observe that correlation values between percent immigrants and the activity space index are, on average, 0.52 across all seven ethnic groups, ranging from 0.36 to 0.61. The correlation values between the number of ethnic business and the activity space index are even lower ranging from 0.1 to 0.43. These ranges suggest that although the immigrant-ethnic activity space index shares some aspects of the measures for presence of immigrants and ethnic businesses in a neighborhood (which is not surprising given that the index is computed based on a multiplicative combination of these two components), it nonetheless appears to be distinct from these traditional measures. As further evidence of this, we defined a high ethnic business tract as one with at least 10 ethnic businesses for a particular group, and

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then determined what percent of immigrants from a group live in such tracts as a way to assess the extent of coterminous locations of ethnic immigrants and the businesses they might patronize.³ We found that for nearly all groups, one-half or less of immigrants live in such high business tracts. Whereas for Mexican immigrants about 66 percent live in such tracts, 52 percent of Chinese immigrants do so, and the percentages are much lower for the other groups: about 30 percent for Koreans, Vietnamese, and Armenians, 10 percent for Filipinos, and less than 3 percent for Salvadorans.⁴ The assumption that census tracts capture both where immigrants live and where ethnic businesses are located is not accurate.

<<< Table 2 about here >>>

Figure 1 visually displays maps of immigrant residence, ethnic businesses, and the IEAS for one ethnic group—Korean immigrants—in the study area. Panel 1 shows the Korean immigrant population in tracts while Panel 2 plots the number of Korean ethnic businesses. As is shown, Korean immigrants broadly reside in neighborhoods across the region, but are particularly centered in downtown Los Angeles, the South Bay area of Los Angeles County (the southwest part of the map), several sections of Orange County in the southeast, and San Bernardino County. Although similar in some ways, there is a distinct spatial distribution of Korean ethnic businesses across the region, and they tend to be more spatially localized. Panel 3 shows the IEAS for Koreans and reveals that it is highly spatially concentrated in downtown Los Angeles (Koreatown) and Orange County, with a smaller concentration in the San Gabriel Valley

³ Because of their smaller concentrations, we defined high ethnic business tracts as five businesses for Armenians, and three businesses for Salvadorans.

⁴ We also computed the average distance to such a high ethnic business tract for the various groups. These averages were: 0.4 miles for Mexican immigrants, 0.8 miles for Chinese immigrants, 2 miles for Korean immigrants, 2.2 miles for Vietnamese immigrants, 3.9 miles for Armenian immigrants, 4 miles for Filipino immigrants, and 6.7 miles for Salvadoran immigrants.

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near El Monte. Figure 1 reinforces our belief that the IEAS approach is distinct from the
traditional approaches.

<<< Figure 1 about here >>>

We present maps of the immigrant-ethnic activity index for certain groups in Figures 2-4.
Figure 2 visually displays the activity space of Vietnamese immigrants in the Southern
California region. It demonstrates a higher density of Vietnamese immigrant activity spaces
around the city of Garden Grove, a well-known ethnic center for Vietnamese immigrants in the
region. Likewise, Korean immigrant activity space (Figure 3) appears to be located mostly
around the areas traditionally known as Koreatown in Los Angeles while some cities in northern
Orange County also show a higher density of Korean immigrant activity space (i.e., Fullerton
and Buena Park). Activity space for Chinese immigrants (Figure 4) spans from areas
conventionally known as Chinatown in Los Angeles up to areas near El Monte (Northeast of
downtown). In essence, we observe that the immigrant-ethnic activity space for the ethnic groups
employed in the current study corresponds well with our understanding of the locations of ethnic
neighborhoods in the study area.

<<< Figures 2-4 about here >>>

IEAS and neighborhood crime

We now turn to results from the regression models predicting crime. We begin with our
baseline models using the common approach in the literature of including only a measure of the
percent of the tract population that is foreign born for each of seven ethnic groups (Columns 1
and 4 in Table 3).⁵ As Table 3 reveals and consistent with the literature (Ousey and Kubrin 2018),

⁵ The complete set of coefficients is reported in Appendix Tables A1 and A2.

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we find that immigrant concentration is either negatively associated with violent and property crime or has no relationship at all across the groups.⁶ For example, we see that a one standard deviation (S.D.) increase in the presence of Chinese immigrants in tracts results in 3.3 percent ($\exp(\beta \times \text{S.D.}) - 1$) less violent crime and 5.2 percent less property crime, after accounting for other measures in the model. Likewise, a one standard deviation increase in the presence of Vietnamese immigrants leads to about 3 and 6 percent decreases in the risk of violent and property crime in tracts, respectively. The presence of Mexican immigrants is not significantly associated with violent and property crime in tracts.

We next examined another set of baseline models that instead include the number of ethnic businesses for each of the seven groups (Columns 2 and 5 in Table 3). Here the results are very different, as we, in fact, observe that the number of ethnic business in an area generally has a *crime-enhancing* effect regardless of which ethnic group owns the businesses (and after controlling for the presence of retail establishments more generally). For example, a one standard deviation increase in the presence of Filipino businesses in tracts results in about 15 and 17 percent higher violent and property crime rates, respectively, while a one standard deviation increase in the presence of Mexican businesses will lead to about 20 and 27 percent higher violent and property crime rates in tracts. These effects were found even controlling for the overall presence of retail in the tract, consistent with some prior research (Kubrin, Kim, and Hipp 2018).

<<< Table 3 about here >>>

⁶ We also estimated additional models that substituted a single measure of percent foreign born residents for the group-specific measures in these models. This measure had a negative relationship with violent and property crime in each of the models.

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Finally, we estimated sets of models to assess the relationship between our novel immigrant-ethnic activity space index measures and crime in neighborhoods. We begin with the findings of the combined IEAS index of all seven ethnic groups (Table 4).⁷ We observe that there is a notable negative relationship between the general IEAS index and both violent and property crime. For example, a one standard deviation increase in the IEAS index is associated with 8 and 28 percent less violent and property crime, respectively ($\exp(\beta \times \text{S.D.}) - 1$). Next, columns 3 and 6 in Table 3 present the activity space index coefficients by seven ethnic groups for violent and property crime (the complete set of coefficient estimates from the main effect models with all controls are shown in Appendix Tables A5 for violent crime and A6 for property crime). We find that, for some groups, the IEAS index has crime-reducing effects on violent crime. For example, a one standard deviation increase in the activity space of Mexican immigrants leads to 3.6 percent reduction in violent crime. Likewise, IEAS of Filipino immigrants is associated with about 3 percent less violent crime, although the coefficient is marginally significant at the level of $p < 0.1$. Also, a one standard deviation increase in the activity space index for Vietnamese and Korean immigrants is associated with about 4 percent and 3.5 percent less violent crime in neighborhoods, respectively. We do not detect statistically significant effects for the other ethnic groups.

<<< Table 4 about here >>>

We next turn to the property crime results, which are much stronger than the violent crime models. We observe that tracts with higher IEAS values consistently have lower risk of property crime. Specifically, tracts with a one standard deviation higher level of activity space of

⁷ We tested possible non-linear relationships by including squared and cubic terms for each of the IEAS measures but we do not find any statistically significant quadratic effects.

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Mexican immigrants have 38 percent less property crime, holding constant the other measures in the model. These are the strongest effects we detected. The next strongest effects were observed for tracts with a greater Vietnamese or Salvadoran activity space index, as a one standard deviation increase is associated with 15 and 13 percent less property crime, respectively. Likewise, tracts with one standard deviation greater Chinese or Filipino immigrant activity space have about 10 percent less property crime in their neighborhoods. Finally, tracts with a one standard deviation increase in Korean immigrant activity space have 5 percent less property crime. Collectively, the findings from the IEAS models show distinct effects from the two baseline models. Specifically, IEAS measures have stronger negative effects on violent and property crime than do the models including the percent immigrants by groups and have opposite signs of coefficients compared to the models with the number of ethnic businesses. It highlights the overall protective effects of immigrants in a neighborhood.⁸

Discussion and Conclusion

Most studies define immigrant neighborhoods based on immigrant residential population (i.e., percent foreign born). Building upon the immigration-crime nexus and ethnic enclave literature, in the current study we introduced an alternative conception of immigrant neighborhoods by simultaneously incorporating where immigrants live, where they go for activities, and the movement patterns between the two, which we termed Immigrant-Ethnic Activity Space (IEAS). The IEAS approach is arguably theoretically more relevant to the lived picture of immigrant neighborhoods compared to other traditional measures of immigrant communities. Therefore, a primary contribution of the current study is developing a more

⁸ We estimated a model including all seven ethnic group IEAS measures simultaneously. The results were substantially identical to the current models.

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comprehensive and representative approach for understanding immigrant neighborhoods as well as their relationship with crime. The study produced several key findings.

First, it is worth highlighting that our IEAS measures by groups are distinct from traditional approaches focusing on immigrant population or ethnic businesses, respectively. Our results imply that looking at only one of the two components does not comprehensively capture immigrant neighborhoods. Also, Figures 1-4 confirm that the IEAS approach generally corresponds well with the locations of so-called ethnic enclaves in the Southern California region. For example, the cities of Garden Grove and Westminster are traditionally well-known settlements of Vietnamese immigrants. As shown in Figure 2, tracts with high level of IEAS for Vietnamese are spatially concentrated within the boundaries of the two cities. This suggests that measuring IEAS may be a useful way to identify the spatial locations of immigrant-ethnic enclaves by different ethnic groups in other regions in the U.S. Future researchers may want to utilize this approach to see where immigrant-ethnic enclaves are spatially located in other “gateway States” such as New York, Florida, Texas, Pennsylvania, New Jersey and Illinois given that these states contain sizable foreign born populations. Although we believe that the effects of IEAS examined in the current study will be equally useful in other contexts across the U.S., future research will want to analyze the immigration-crime nexus utilizing this approach in other cities and regions to assess the generalizability of the current study’s findings.

Across all ethnic groups, our results showed that the IEAS index is either negatively associated with violent and property crime rates or has a null effect. Furthermore, these negative effects were almost always stronger compared to the typical approach of measuring immigrant neighborhoods based on the residential population. These results are consistent with our theorizing that our measures possibly capture immigrant social activities, and therefore may

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better capture social ties among co-ethnic immigrant residents, which can lead to more vibrancy.

These areas can potentially serve as a central location of various social activities for co-ethnic residents (including immigrants), which may generate informal social control. It was particularly notable that measures of the presence of ethnic businesses on their own virtually always exhibited a positive relationship with violent and property crime. Although somewhat counterintuitive, this finding is consistent with findings from a recent study (Kubrin, Kim, and Hipp 2018), and may occur if ethnic businesses attract a large number of patrons, and therefore provide more crime opportunities than non-ethnic businesses. This suggests that it is necessary to simultaneously account for both the residences and the workplaces of immigrant groups, as the IEAS measure does.

We acknowledge some limitations to the study. First, we utilize the total number of ethnic businesses when computing the IEAS index. There remains room to refine the measure by distinguishing fine-grained categories of ethnic businesses. Another limitation is our measure of ethnic businesses is based only on surnames of business owners. It is encouraging that mapping these results at least showed content validity based on our understanding of the region, but this nonetheless is a limitation. Another limitation is that the current study could not directly examine the specific mechanisms via informal social control between immigrant activity space and neighborhood crime, something that must await future study. Also, we utilized Euclidean straight-line distance and the distance decay function to capture movement patterns between where immigrants live and where they go for various activities. However, a better approach might measure distance based on the street network rather than straight-line when calculating nearness. Arguably, street-network distances are more relevant to the real-life environment because they take into consideration the street network configuration and certain physical

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barriers. Indeed, a recent study confirmed that researchers should be careful when choosing the type of distance when computing distance based measures (Kane and Kim 2018). A final limitation is the cross-sectional design. A challenge with studying the relationships between neighborhood characteristics and crime is the possibility of endogeneity. In other words, levels of crime in prior years may impact the current level of IEAS. If this reciprocal relationship is true, an implication is that it is necessary to simultaneously test how crime affects the IEAS and the reverse.

In closing, the current study has highlighted the importance of incorporating where immigrants live and go and their travel patterns when studying the immigration-crime nexus at the neighborhood level. Specifically, we built on the ethnic enclave literature, but extended it by moving beyond the assumption that immigrants live and work in the same neighborhood. Instead, we argue that our IEAS approach is a potentially better way to conceptualize immigrant neighborhoods as it captures potential routine daily activities of immigrants. The findings confirmed that the IEAS approach is distinct from traditional measures of immigrant neighborhoods. The results also highlighted that the IEAS measures have negative relationships with violent and property crime in neighborhoods across the study area. We hope future research can use the IEAS approach to expand understanding of immigration and neighborhood crime.

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Tables and Figures**Table 1. Summary Statistics**

Variable	Mean	Std. Dev.
<i>IEAS Index</i>		
Overall IEAS	0.00	1.00
Mexico	0.03	0.99
China	0.02	1.00
Philippines	0.04	0.98
Vietnam	0.04	0.99
Korea	0.03	1.04
Armenia	-0.02	0.88
El Salvador	0.01	1.01
<i>Percent Immigrants</i>		
Mexico	12.86	11.94
China	0.95	2.87
Philippines	2.19	3.49
Vietnam	1.24	3.39
Korea	1.31	3.55
Armenia	0.27	1.28
El Salvador	1.68	2.90
<i>Number of ethnic business</i>		
Mexico	13.80	17.89
China	7.36	21.30
Philippines	2.11	3.32
Vietnam	2.18	5.03
Korea	3.12	10.30
Armenia	0.35	1.50
El Salvador	0.15	0.45
<i>Structural Characteristics</i>		
Concentrated disadvantage	-0.76	9.81
Racial/ethnic heterogeneity	48.51	16.50
Percent black	5.96	10.20
Percent Latino	42.23	27.59
Population density	0.00	0.00
Percent occupied units	92.82	6.62
Percent home owners	55.71	25.63
Percent aged 16 to 29	22.69	8.08
<i>Land use</i>		
Percent industrial area	0.05	0.11
Percent office area	0.03	0.06
Percent residential area	0.56	0.27
Percent retail area	0.06	0.07
<i>Spatial buffer measures (5 mile)</i>		
Concentrated disadvantage	-0.60	7.38
Racial/ethnic heterogeneity	57.56	10.15

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Percent black	6.10	6.47
Percent Latino	43.97	19.22
Percent occupied units	92.82	4.17
Percent home owners	52.76	15.68
Percent aged 16 to 29	23.10	3.26

Table 2. Correlations: Percent Immigrants, Number of Ethnic Business and IEAS by Groups

Mexico		1	2
1	IEAS index		
2	% immigrants	0.504	
3	# ethnic business	0.175	0.278
China			
1	IEAS index		
2	% immigrants	0.504	
3	# ethnic business	0.300	0.287
Philippines			
1	IEAS index		
2	% immigrants	0.360	
3	# ethnic business	0.168	0.264
Vietnam			
1	IEAS index		
2	% immigrants	0.519	
3	# ethnic business	0.360	0.410
Korea			
1	IEAS index		
2	% immigrants	0.572	
3	# ethnic business	0.341	0.406
Armenia			
1	IEAS index		
2	% immigrants	0.612	
3	# ethnic business	0.433	0.382
El Salvador			
1	IEAS index		
2	% immigrants	0.579	
3	# ethnic business	0.098	0.080

Table 3. Coefficients for Various Strategies of Immigrant Neighborhood and Crime (Violent and Property)

	<i>Violent Crime</i>				<i>Property Crime</i>			
	<u>% Immigrants</u>	<u>Ethnic business</u>	<u>IEAS Index</u>		<u>% Immigrants</u>	<u>Ethnic business</u>	<u>IEAS Index</u>	
Mexico	-0.004	0.010	-0.037	**	-0.004	0.013	-0.476	**
	-1.525	13.350	-1.048		-1.438	14.314	-12.582	
pseudo R-sq	0.167	0.174	0.167		0.078	0.083	0.081	
China	-0.011	0.005	-0.028	*	-0.019	0.006	-0.097	**
	-2.093	7.081	-1.614		-2.976	6.876	-4.921	
pseudo R-sq	0.167	0.174	0.167		0.078	0.079	0.078	
Philippines	0.000	0.042	-0.029	**	-0.016	0.049	-0.105	**
	-0.055	11.292	-1.750	†	-3.693	11.350	-5.468	
pseudo R-sq	0.167	0.172	0.167		0.078	0.081	0.078	
Vietnam	-0.009	0.018	-0.043	**	-0.018	0.015	-0.165	**
	-3.934	22.893	-2.306	*	-19.083	49.673	-8.108	
pseudo R-sq	0.164	0.164	0.176		0.075	0.072	0.079	
Korea	-0.004	0.007	-0.035	**	-0.016	0.005	-0.055	**
	-1.118	4.903	-6.365		-4.137	2.864	-18.390	
pseudo R-sq	0.167	0.168	0.167		0.078	0.078	0.078	
Armenia	-0.007	0.015	0.009	**	-0.007	0.010	0.000	**
	-1.611	7.855	1.422		-3.296	9.369	0.042	
pseudo R-sq	0.164	0.164	0.164		0.071	0.071	0.071	
El Salvador	-0.003	0.015	-0.027	**	-0.018	0.188	-0.139	**
	-0.511	6.168	-1.288		-3.174	6.501	-5.973	
pseudo R-sq	0.1671	0.1671	0.1672		0.0779	0.0787	0.0785	

** $p < .01$ (two-tail test), * $p < .05$ (two-tail test), † $p < .05$ (one-tail test)

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T-values are presented below the coefficients

Fixed effects of cities are included but not shown

All controls are included but not presented

Table 4. Coefficients for IEAS and Crime (Violent and Property)

	Violent crime		Property crime	
IEAS (combined)	-0.084	**	-0.332	**
	-2.921		-10.897	
<i>Structural Characteristics</i>				
Concentrated disadvantage	0.013	**	-0.009	**
	4.525		-2.891	
Racial/ethnic heterogeneity	0.002	†	0.003	*
	1.771		2.168	
Percent black	0.011	**	-0.008	**
	5.503		-3.410	
Percent Latino	0.008	**	-0.003	*
	6.637		-2.408	
Population density	-51.673	**	-69.929	**
	-11.001		-14.943	
Percent occupied units	-0.022	**	-0.010	**
	-9.052		-3.765	
Percent home owners	-0.007	**	-0.006	**
	-7.445		-6.240	
Percent aged 16 to 29	-0.001		0.005	*
	-0.720		2.410	
<i>Land use</i>				
Percent industrial area	0.469	**	1.219	**
	3.732		8.465	
Percent office area	0.229		1.030	**
	0.962		3.859	
Percent residential area	0.095		-0.188	**
	1.435		-2.784	
Percent retail area	3.272	**	2.506	**
	17.648		12.169	
<i>Spatial buffer measures (5 mile)</i>				
Concentrated disadvantage	0.021	**	0.015	†
	2.731		1.831	
Racial/ethnic heterogeneity	-0.011	**	0.000	
	-5.000		-0.087	
Percent black	0.010	*	0.021	**
	2.133		3.855	
Percent Latino	-0.003		0.004	
	-0.992		1.210	
Percent occupied units	-0.048	**	-0.019	
	-4.364		-1.570	
Percent home owners	-0.012	**	-0.011	**
	-4.098		-3.640	

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Percent aged 16 to 29	0.020 *	0.017 †
	2.395	1.955
Intercept	2.414 *	-1.329
	2.292	-1.168
N	3952	3952
pseudo R-sq	0.1674	0.0803

** $p < .01$ (two-tail test), * $p < .05$ (two-tail test), † $p < .05$ (one-tail test)

T-values are presented below the coefficients

Fixed effects of cities are included but not shown

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Figure 1. Immigrant Population, Number of Ethnic Business and Immigrant Activity Space (Korea)

Figure 2. Immigrant Activity Space (Vietnam)

Figure 3. Immigrant Activity Space (Korea)

Figure 4. Immigrant Activity Space (China)

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Appendix

Table A1. Percent Immigrants and Violent Crime by Ethnic Groups

Violent Crime								
Percent Immigrants								
Mexico	-0.004							
	-1.525							
China		-0.011 *						
		-2.093						
Philippines			0.000					
			-0.055					
Vietnam				-0.009 **				
				-3.934				
Korea					-0.004			
					-1.118			
Armenia						-0.007		
						-1.611		
El Salvador								-0.003
								-0.511
Structural Characteristics								
Concentrated disadvantage	0.013 **	0.013 **	0.013 **	0.015 **	0.013 **	0.015 **	0.013 **	
	4.317	4.617	4.397	13.158	4.368	12.592	4.404	
Racial/ethnic heterogeneity	0.001	0.001	0.001	0.006 **	0.001	0.005 **	0.001	
	1.189	0.867	0.898	12.872	1.015	12.418	0.968	
Percent black	0.012 **	0.011 **	0.012 **	0.011 **	0.012 **	0.012 **	0.012 **	
	5.825	5.578	5.769	17.698	5.637	18.182	5.820	
Percent Latino	0.006 **	0.007 **	0.008 **	0.008 **	0.007 **	0.008 **	0.008 **	
	3.904	6.014	6.591	16.308	6.334	17.012	6.534	
Population density	-54.332 **	-54.938 **	-54.831 **	-44.686 **	-53.769 **	-44.784 **	-54.571 **	
	-11.847	-12.005	-11.855	-22.176	-11.478	-22.196	-11.823	
Percent occupied units	-0.022 **	-0.022 **	-0.022 **	-0.026 **	-0.022 **	-0.026 **	-0.022 **	
	-8.969	-8.889	-8.962	-27.565	-8.945	-27.641	-8.966	
Percent home owners	-0.007 **	-0.007 **	-0.007 **	-0.007 **	-0.007 **	-0.007 **	-0.007 **	
	-7.577	-7.803	-7.785	-20.556	-7.798	-20.772	-7.751	
Percent aged 16 to 29	-0.001	-0.001	-0.001	-0.006 **	-0.001	-0.006 **	-0.001	
	-0.372	-0.458	-0.501	-7.785	-0.568	-7.566	-0.502	
Land use								
Percent industrial area	0.464 **	0.463 **	0.476 **	0.530 **	0.472 **	0.530	0.477 **	
	3.682	3.678	3.781	11.666	3.750	11.662	3.790	
Percent office area	0.238	0.228	0.241	0.065	0.268	0.087	0.231	
	0.997	0.958	1.009	0.644	1.119	0.860	0.965	
Percent residential area	0.122 †	0.117 †	0.123 †	0.119 **	0.113 †	0.115 **	0.123 †	
	1.858	1.776	1.868	4.520	1.712	4.363	1.878	
Percent retail area	3.276 **	3.290 **	3.274 **	2.640 **	3.270 **	2.640 **	3.278 **	
	17.641	17.711	17.620	42.555	17.603	42.523	17.630	
Spatial buffer measures (5 mile)								
Concentrated disadvantage	0.025 **	0.024 **	0.025	0.018 **	0.025 **	0.018 **	0.025 **	
	3.334	3.255	3.272	5.965	3.329	5.904	3.316	
Racial/ethnic heterogeneity	-0.011 **	-0.011 **	-0.011 **	-0.018	-0.011 **	-0.019 **	-0.011 **	
	-4.784	-4.774	-4.833	-19.992	-4.833	-20.260	-4.879	
Percent black	0.008	0.008 †	0.008 †	0.013 **	0.008	0.013 **	0.008 †	
	1.645	1.695	1.665	7.647	1.693	7.887	1.693	
Percent Latino	-0.005	-0.004	-0.004	-0.006 **	-0.004	-0.006	-0.005 †	
	-1.632	-1.459	-1.586	-5.607	-1.555	-5.661	-1.653	
Percent occupied units	-0.051 **	-0.051 **	-0.050 **	-0.069 **	-0.050 **	-0.070 **	-0.050	
	-4.580	-4.605	-4.542	-14.809	-4.541	-15.119	-4.517	
Percent home owners	-0.007 **	-0.007 **	-0.007 **	-0.008 **	-0.008 **	-0.008 **	-0.007 **	
	-2.984	-3.028	-3.013	-7.932	-3.096	-7.850	-3.046	
Percent aged 16 to 29	0.024 **	0.024 **	0.024 **	0.023 **	0.024 **	0.023 **	0.024 **	
	2.893	2.851	2.850	6.823	2.813	6.813	2.863	
Intercept	2.374 *	2.412 *	2.387 *	5.067 **	2.386 *	5.225 **	2.365 *	
	2.257	2.297	2.255	11.001	2.270	11.338	2.245	
N	3951	3951	3951	3951	3951	3951	3951	
pseudo R-sq	0.167	0.167	0.167	0.164	0.167	0.164	0.167	
** p < .01(two-tail test), * p < .05 (two-tail test), † p < .05 (one-tail test)								
T-values are presented below the coefficients								
Fixed effects of cities are included but not shown								

Immigrant-ethnic activity space

Table A2. Percent Immigrants and Property Crime by Ethnic Groups

Property Crime								
Percent Immigrants								
Mexico	-0.004							
	-1.438							
China		-0.019 **						
		-2.976						
Philippines			-0.016 **					
			-3.693					
Vietnam				-0.018 **				
				-19.083				
Korea					-0.016 **			
					-4.137			
Armenia						0.007 **		
						3.296		
El Salvador							-0.018 **	
							-3.174	
Structural Characteristics								
Concentrated disadvantage	-0.009 **	-0.008 **	-0.010 **	-0.006 **	-0.010 **	-0.008 **	-0.009 **	
	-2.787	-2.643	-3.013	-12.267	-3.022	-15.708	-2.868	
Racial/ethnic heterogeneity	-0.002	-0.001	0.000	0.004 **	-0.001	0.004 **	-0.001	
	-1.331	-1.070	-0.040	21.369	-0.768	18.937	-0.750	
Percent black	-0.006 *	-0.007 **	-0.007 **	-0.001 **	-0.007 **	-0.001 *	-0.006 *	
	-2.465	-2.765	-2.904	-3.520	-2.905	-2.431	-2.498	
Percent Latino	-0.002	-0.004 **	-0.004 **	0.000 *	-0.004 **	0.001 **	-0.003 *	
	-1.174	-3.418	-3.053	2.349	-3.491	5.132	-2.166	
Population density	-81.738 **	-81.307 **	-78.724 **	-132.270 **	-76.159 **	-133.236 **	-79.108 **	
	-17.795	-17.731	-16.919	-102.591	-15.926	-103.101	-17.005	
Percent occupied units	-0.009 **	-0.009 **	-0.009 **	-0.017 **	-0.009 **	-0.017 **	-0.009 **	
	-3.575	-3.508	-3.577	-43.756	-3.404	-44.245	-3.593	
Percent home owners	-0.007 **	-0.007 **	-0.007 **	-0.010 **	-0.007 **	-0.010 **	-0.007 **	
	-6.934	-6.869	-6.818	-61.877	-6.856	-63.249	-6.709	
Percent aged 16 to 29	0.005 *	0.006 **	0.005 **	0.000	0.005 *	0.000 †	0.005 *	
	2.441	2.870	2.599	0.754	2.482	1.707	2.523	
Land use								
Percent industrial area	1.260 **	1.230 **	1.261 **	1.107 **	1.250 **	1.109 **	1.268 **	
	8.616	8.402	8.633	55.697	8.559	55.719	8.678	
Percent office area	1.125 **	1.095 **	1.055 **	0.674 **	1.195 **	0.698 **	1.052 **	
	4.177	4.070	3.920	15.683	4.409	16.247	3.902	
Percent residential area	-0.127 †	-0.135 *	-0.124 †	0.411 **	-0.158 *	0.408 **	-0.119 †	
	-1.868	-1.990	-1.826	35.823	-2.310	35.527	-1.755	
Percent retail area	2.479 **	2.494 **	2.516 **	3.055 **	2.480 **	3.055 **	2.522 **	
	11.898	11.972	12.065	114.968	11.893	114.774	12.080	
Spatial buffer measures (5 mile)								
Concentrated disadvantage	0.034 **	0.034 **	0.031 **	0.011 **	0.035 **	0.011 **	0.035 **	
	4.168	4.156	3.758	8.681	4.265	8.750	4.264	
Racial/ethnic heterogeneity	0.000	0.001	0.001	-0.005 **	0.001	-0.006 **	0.000	
	0.097	0.232	0.499	-14.189	0.289	-15.536	0.006	
Percent black	0.010 †	0.011 †	0.011 *	0.011 **	0.011 *	0.012 **	0.011 *	
	1.912	1.952	2.052	13.276	1.993	14.030	2.110	
Percent Latino	-0.004	-0.003	-0.002	-0.002 **	-0.003	-0.002 **	-0.004	
	-1.227	-1.048	-0.532	-4.335	-0.994	-4.861	-1.322	
Percent occupied units	-0.027 *	-0.028 *	-0.024 †	-0.025 **	-0.027 *	-0.027 **	-0.025 *	
	-2.201	-2.254	-1.937	-14.610	-2.184	-16.125	-2.031	
Percent home owners	0.006 *	0.006 *	0.006 *	-0.005 **	0.006 *	-0.005 **	0.006 *	
	2.457	2.443	2.387	-11.698	2.154	-11.260	2.212	
Percent aged 16 to 29	0.033 **	0.033 **	0.031 **	0.030 **	0.031 **	0.031 **	0.033 **	
	3.896	3.884	3.603	23.825	3.690	23.798	3.912	
Intercept	-1.346	-1.334	-1.787	0.299 †	-1.372	0.574 **	-1.511	
	-1.177	-1.169	-1.555	1.713	-1.202	3.288	-1.320	
N	3951	3951	3951	3951	3951	3951	3951	
pseudo R-sq	0.078	0.078	0.078	0.075	0.078	0.071	0.078	
** p < .01 (two-tail test), * p < .05 (two-tail test), † p < .05 (one-tail test)								
T-values are presented below the coefficients								
Fixed effects of cities are included but not shown								

Immigrant-ethnic activity space

Table A3. Number of Ethnic Business and Violent Crime by Ethnic Groups

Violent Crime								
Number of Ethnic Business								
Mexico	0.010 **							
	13.350							
China		0.005 **						
		7.081						
Philippines			0.042 **					
			11.292					
Vietnam				0.018 **				
				22.893				
Korea					0.007 **			
					4.903			
Armenia						0.015 **		
						7.855		
El Salvador								-0.003
								-0.511
Structural Characteristics								
Concentrated disadvantage	0.013 **	0.012 **	0.013 **	0.013 **	0.013 **	0.014 **	0.013 **	
	4.653	4.298	4.709	11.156	4.561	12.242	4.404	
Racial/ethnic heterogeneity	0.000	0.000	0.000	0.005 **	0.000	0.005 **	0.001	
	-0.216	0.245	-0.335	10.855	0.223	11.925	0.968	
Percent black	0.013 **	0.013 **	0.013 **	0.013 **	0.013 **	0.012 **	0.012 **	
	6.611	6.510	6.598	19.947	6.322	18.037	5.820	
Percent Latino	0.007 **	0.009 **	0.008 **	0.009 **	0.008 **	0.008 **	0.008 **	
	6.255	7.439	7.096	19.918	6.967	17.482	6.534	
Population density	-41.288 **	-52.788 **	-46.421 **	-41.458 **	-54.613 **	-44.370 **	-54.571 **	
	-8.889	-11.565	-10.090	-20.656	-11.951	-21.933	-11.823	
Percent occupied units	-0.020 **	-0.021 **	-0.021 **	-0.026 **	-0.020 **	-0.026 **	-0.022 **	
	-8.310	-8.591	-8.765	-27.249	-8.350	-27.377	-8.966	
Percent home owners	-0.006 **	-0.007 **	-0.006 **	-0.007 **	-0.007 **	-0.008 **	-0.007 **	
	-6.485	-7.396	-6.605	-19.668	-7.828	-21.144	-7.751	
Percent aged 16 to 29	0.001	0.000	0.000	-0.004 **	0.000	-0.005 **	-0.001	
	0.291	0.027	0.181	-5.816	0.001	-7.167	-0.502	
Land use								
Percent industrial area	-0.032	0.171	0.298 *	0.429 **	0.314 *	0.529 **	0.477 **	
	-0.247	1.312	2.391	9.403	2.443	11.640	3.790	
Percent office area	0.034	0.154	0.020	0.033	0.141	0.003	0.231	
	0.144	0.647	0.085	0.330	0.590	0.028	0.965	
Percent residential area	0.190 **	0.139 *	0.171 **	0.131 **	0.148 *	0.124 **	0.123 †	
	2.952	2.134	2.647	4.983	2.262	4.692	1.878	
Percent retail area	2.580 **	3.022 **	2.872 **	2.451 **	3.071 **	2.585 **	3.278 **	
	13.991	16.209	15.683	38.780	16.385	41.258	17.630	
Spatial buffer measures (5 mile)								
Concentrated disadvantage	0.031 **	0.024 **	0.026 **	0.015 **	0.023 **	0.017 **	0.025 **	
	4.145	3.263	3.536	5.035	3.017	5.709	3.316	
Racial/ethnic heterogeneity	-0.011 **	-0.010 **	-0.011 **	-0.019 **	-0.010 **	-0.019 **	-0.011 **	
	-4.841	-4.605	-4.996	-20.169	-4.552	-20.173	-4.879	
Percent black	0.006	0.007	0.008 †	0.014 **	0.008	0.014 **	0.008 †	
	1.412	1.509	1.729	8.247	1.637	8.513	1.693	
Percent Latino	-0.009 **	-0.005 *	-0.006 *	-0.007 **	-0.005 †	-0.006 **	-0.005 †	
	-3.161	-1.965	-2.290	-5.888	-1.672	-5.823	-1.653	
Percent occupied units	-0.043 **	-0.050 **	-0.049 **	-0.072 **	-0.051 **	-0.069 **	-0.050 **	
	-3.923	-4.597	-4.539	-15.453	-4.623	-14.849	-4.517	
Percent home owners	-0.006 **	-0.007 **	-0.007 **	-0.009 **	-0.006 **	-0.008 **	-0.007 **	
	-2.687	-2.929	-2.976	-8.171	-2.675	-7.756	-3.046	
Percent aged 16 to 29	0.024 **	0.024 **	0.022 **	0.022 **	0.024 **	0.024 **	0.024 **	
	2.929	2.857	2.681	6.266	2.870	6.890	2.863	
Intercept	1.467	2.238 *	2.188 *	5.305 **	2.193 *	5.052 **	2.365 *	
	1.413	2.142	2.108	11.513	2.091	10.990	2.245	
N	3951	3951	3951	3951	3951	3951	3951	
pseudo R-sq	0.174	0.169	0.172	0.164	0.168	0.164	0.167	
** $p < .01$ (two-tail test), * $p < .05$ (two-tail test), † $p < .05$ (one-tail test)								
T-values are presented below the coefficients								
Fixed effects of cities are included but not shown								

Immigrant-ethnic activity space

Table A4. Number of Ethnic Business and Property Crime by Ethnic Groups

Property Crime								
Number of Ethnic Business								
Mexico	0.013 **							
	14.314							
China		0.006 **						
		6.876						
Philippines			0.049 **					
			11.350					
Vietnam				0.015 **				
				49.673				
Korea					0.005 **			
					2.864			
Armenia						0.010 **		
						9.369		
El Salvador								0.188 **
								6.501
Structural Characteristics								
Concentrated disadvantage	-0.009 **	-0.009 **	-0.008 **	-0.009 **	-0.009 **	-0.008 **	-0.010 **	
	-2.803	-2.927	-2.688	-18.592	-2.863	-15.951	-3.186	
Racial/ethnic heterogeneity	-0.002 *	-0.002 †	-0.003 *	0.003 **	-0.002	0.003 **	-0.001	
	-2.223	-1.717	-2.311	14.663	-1.444	18.472	-1.271	
Percent black	-0.005 *	-0.005 *	-0.005 *	0.000	-0.005 *	-0.001 **	-0.005 *	
	-2.339	-2.063	-2.051	0.564	-2.299	-2.666	-2.357	
Percent Latino	-0.005 **	-0.003 *	-0.004 **	0.002 **	-0.004 **	0.001 **	-0.004 **	
	-3.828	-2.335	-2.864	10.683	-2.795	5.553	-2.931	
Population density	-67.411 **	-80.063 **	-72.746 **	-127.251 **	-81.566 **	-132.997 **	-78.721 **	
	-14.363	-17.491	-15.699	-98.626	-17.784	-102.901	-17.079	
Percent occupied units	-0.008 **	-0.009 **	-0.009 **	-0.017 **	-0.008 **	-0.017 **	-0.009 **	
	-3.141	-3.365	-3.468	-44.278	-3.287	-43.998	-3.663	
Percent home owners	-0.005 **	-0.006 **	-0.005 **	-0.009 **	-0.007 **	-0.010 **	-0.006 **	
	-5.337	-6.313	-5.479	-59.425	-6.826	-63.470	-6.726	
Percent aged 16 to 29	0.007 **	0.006 **	0.007 **	0.001 **	0.006 **	0.001 *	0.006 **	
	3.653	3.085	3.389	4.769	2.918	2.095	2.920	
Land use								
Percent industrial area	0.564 **	0.863 **	1.024 **	0.994 **	1.144 **	1.108 **	1.173 **	
	3.860	5.680	7.132	49.450	7.656	55.654	8.068	
Percent office area	0.923 **	1.026 **	0.902 **	0.549 **	1.068 **	0.658 **	1.044 **	
	3.588	3.835	3.439	12.677	3.966	15.226	3.901	
Percent residential area	-0.034	-0.110	-0.063	0.418 **	-0.110	0.414 **	-0.108	
	-0.520	-1.631	-0.945	36.335	-1.616	35.988	-1.600	
Percent retail area	1.622 **	2.197 **	2.019 **	2.881 **	2.349 **	3.038 **	2.272 **	
	7.915	10.504	9.865	106.045	11.088	113.805	10.891	
Spatial buffer measures (5 mile)								
Concentrated disadvantage	0.043 **	0.035 **	0.036 **	0.012 **	0.034 **	0.010 **	0.035 **	
	5.334	4.335	4.527	9.448	4.132	8.420	4.355	
Racial/ethnic heterogeneity	0.000	0.001	0.000	-0.006 **	0.001	-0.006 **	0.000	
	-0.022	0.371	-0.117	-15.103	0.294	-15.358	0.098	
Percent black	0.009 †	0.009 †	0.011 *	0.011 **	0.010 †	0.013 **	0.010 †	
	1.706	1.698	2.010	13.054	1.868	14.753	1.947	
Percent Latino	-0.009 **	-0.005	-0.006 †	-0.003 **	-0.004	-0.002 **	-0.004	
	-2.914	-1.540	-1.899	-7.381	-1.270	-4.918	-1.308	
Percent occupied units	-0.017	-0.027 *	-0.025 *	-0.030 **	-0.027 *	-0.027 **	-0.027 *	
	-1.433	-2.237	-2.077	-17.553	-2.236	-15.927	-2.252	
Percent home owners	0.007 **	0.007 *	0.006 *	-0.004 **	0.007 **	-0.005 **	0.006 *	
	2.919	2.543	2.515	-10.156	2.657	-11.111	2.348	
Percent aged 16 to 29	0.031 **	0.033 **	0.029 **	0.029 **	0.033 **	0.031 **	0.030 **	
	3.726	3.859	3.515	22.479	3.885	23.866	3.487	
Intercept	-2.308 *	-1.428	-1.545	0.778 **	-1.453	0.516 **	-1.222	
	-2.056	-1.257	-1.372	4.450	-1.272	2.960	-1.075	
N	3951	3951	3951	3951	3951	3951	3951	
pseudo R-sq	0.083	0.079	0.081	0.072	0.078	0.071	0.079	
** p < .01 (two-tail test), * p < .05 (two-tail test), † p < .05 (one-tail test)								
T-values are presented below the coefficients								
Fixed effects of cities are included but not shown								

Immigrant-ethnic activity space

Table A5. IEAS Index and Violent Crime by Ethnic Groups

Violent Crime								
IEAS Index								
Mexico	-0.037							
	-1.048							
China		-0.028						
		-1.614						
Philippines			-0.029 †					
			-1.750					
Vietnam				-0.043 *				
				-2.306				
Korea					-0.035 **			
					-6.365			
Armenia						0.009		
						1.422		
El Salvador							-0.027	
							-1.288	
Structural Characteristics								
Concentrated disadvantage	0.013 **	0.013 **	0.013 **	0.013 **	0.015 **	0.015 **	0.013 **	
	4.431	4.424	4.355	4.566	12.869	12.678	4.434	
Racial/ethnic heterogeneity	0.001	0.001	0.001	0.002	0.006 **	0.005 **	0.001	
	1.214	1.185	1.337	1.379	13.221	12.395	1.143	
Percent black	0.012 **	0.012 **	0.012 **	0.012 **	0.011 **	0.012 **	0.012 **	
	5.769	5.694	5.735	5.807	17.394	18.122	5.870	
Percent Latino	0.008 **	0.007 **	0.008 **	0.008 **	0.007 **	0.008 **	0.008 **	
	6.595	6.370	6.620	6.542	16.042	16.953	6.720	
Population density	-53.693 **	-54.177 **	-53.465 **	-54.809 **	-40.624 **	-44.543 **	-53.548 **	
	-11.398	-11.794	-11.519	-11.975	-19.125	-21.982	-11.425	
Percent occupied units	-0.022 **	-0.022 **	-0.022 **	-0.022 **	-0.026 **	-0.026 **	-0.022 **	
	-9.012	-9.027	-8.971	-8.946	-27.834	-27.665	-9.003	
Percent home owners	-0.007 **	-0.007 **	-0.007 **	-0.007 **	-0.007 **	-0.007 **	-0.007 **	
	-7.729	-7.690	-7.680	-7.515	-20.036	-20.735	-7.712	
Percent aged 16 to 29	-0.001	-0.001	-0.001	-0.001	-0.006 **	-0.006 **	-0.001	
	-0.640	-0.504	-0.577	-0.532	-7.796	-7.609	-0.510	
Land use								
Percent industrial area	0.479 **	0.471 **	0.473 **	0.474 **	0.525 **	0.530 **	0.485 **	
	3.809	3.749	3.758	3.770	11.552	11.656	3.852	
Percent office area	0.216	0.257	0.247	0.229	0.135	0.084	0.221	
	0.900	1.077	1.038	0.961	1.328	0.833	0.923	
Percent residential area	0.119 †	0.113 †	0.117 †	0.123 †	0.085 **	0.115 **	0.121 †	
	1.812	1.717	1.782	1.875	3.160	4.341	1.841	
Percent retail area	3.280 **	3.264 **	3.284 **	3.281 **	2.645 **	2.637 **	3.283 **	
	17.653	17.586	17.687	17.681	42.642	42.467	17.660	
Spatial buffer measures (5 mile)								
Concentrated disadvantage	0.024 **	0.024 **	0.024 **	0.025 **	0.017 **	0.018 **	0.025 **	
	3.145	3.164	3.147	3.360	5.835	5.892	3.321	
Racial/ethnic heterogeneity	-0.012 **	-0.011 **	-0.010 **	-0.011 **	-0.018 **	-0.019 **	-0.011 **	
	-4.984	-4.783	-4.423	-4.709	-19.398	-20.221	-4.981	
Percent black	0.009 †	0.008 †	0.007	0.007	0.013 **	0.013 **	0.008 †	
	1.874	1.650	1.485	1.432	7.479	7.950	1.707	
Percent Latino	-0.004	-0.004	-0.004	-0.004	-0.006 **	-0.006 **	-0.004	
	-1.409	-1.488	-1.438	-1.610	-5.411	-5.641	-1.580	
Percent occupied units	-0.050 **	-0.051 **	-0.049 **	-0.049 **	-0.069 **	-0.070 **	-0.050 **	
	-4.485	-4.582	-4.437	-4.458	-14.811	-15.108	-4.486	
Percent home owners	-0.009 **	-0.008 **	-0.008 **	-0.008 **	-0.010 **	-0.008 **	-0.008 **	
	-3.167	-3.257	-3.316	-3.109	-9.315	-7.846	-3.191	
Percent aged 16 to 29	0.022 **	0.024 **	0.023 **	0.025 **	0.023 **	0.023 **	0.023 **	
	2.650	2.817	2.738	2.928	6.573	6.808	2.806	
Intercept	2.409 *	2.429 *	2.243 *	2.219 *	5.166 **	5.242 **	2.363 *	
	2.287	2.312	2.127	2.105	11.217	11.347	2.245	
N	3952	3952	3952	3952	3952	3952	3952	
pseudo R-sq	0.167	0.167	0.167	0.176	0.167	0.164	0.167	
** $p < .01$ (two-tail test), * $p < .05$ (two-tail test), † $p < .05$ (one-tail test)								
T-values are presented below the coefficients								
Fixed effects of cities are included but not shown								

Immigrant-ethnic activity space

Table A6. IEAS Index and Property Crime by Ethnic Groups

Property Crime								
IEAS Index								
Mexico	-0.476 **							
	-12.582							
China		-0.097 **						
		-4.921						
Philippines			-0.105 **					
			-5.468					
Vietnam				-0.165 **				
				-8.108				
Korea					-0.055 **			
					-18.390			
Armenia						0.000		
						0.042		
El Salvador								-0.139 **
								-5.973
Structural Characteristics								
Concentrated disadvantage	-0.010 **	-0.010 **	-0.010 **	-0.008 **	-0.007 **	-0.008 **	-0.009 **	
	-3.027	-3.033	-3.287	-2.616	-15.166	-15.627	-2.840	
Racial/ethnic heterogeneity	0.004 **	0.000	0.000	0.001	0.004 **	0.004 **	0.000	
	3.490	-0.256	0.376	0.701	21.887	19.029	0.084	
Percent black	-0.006 **	-0.007 **	-0.006 **	-0.006 **	-0.001 **	-0.001 *	-0.005 *	
	-2.732	-2.833	-2.621	-2.725	-4.186	-2.263	-2.306	
Percent Latino	0.002 †	-0.004 **	-0.003 **	-0.003 **	0.000 *	0.001 **	-0.002 †	
	1.767	-3.355	-2.680	-2.760	2.487	5.038	-1.870	
Population density	-68.788 **	-78.990 **	-76.834 **	-82.854 **	-127.979 **	-133.183 **	-75.705 **	
	-14.659	-17.172	-16.508	-18.060	-96.499	-103.012	-16.136	
Percent occupied units	-0.011 **	-0.009 **	-0.009 **	-0.009 **	-0.017 **	-0.017 **	-0.009 **	
	-4.178	-3.589	-3.400	-3.474	-44.475	-44.099	-3.699	
Percent home owners	-0.007 **	-0.006 **	-0.007 **	-0.006 **	-0.010 **	-0.010 **	-0.007 **	
	-7.090	-6.660	-6.762	-6.274	-61.810	-63.275	-6.782	
Percent aged 16 to 29	0.002	0.006 **	0.005 *	0.006 **	0.000	0.001 †	0.005 *	
	1.027	2.882	2.540	2.969	1.334	1.744	2.429	
Land use								
Percent industrial area	1.247 **	1.238 **	1.256 **	1.193 **	1.097 **	1.108 **	1.292 **	
	8.740	8.494	8.615	8.226	55.209	55.690	8.876	
Percent office area	0.832 **	1.150 **	1.104 **	1.083 **	0.750 **	0.692 **	1.013 **	
	3.139	4.277	4.082	4.037	17.462	16.114	3.777	
Percent residential area	-0.107	-0.149 *	-0.126 †	-0.110	0.368 **	0.407 **	-0.115 †	
	-1.607	-2.188	-1.854	-1.633	31.515	35.471	-1.711	
Percent retail area	2.595 **	2.463 **	2.544 **	2.542 **	3.054 **	3.055 **	2.558 **	
	12.604	11.845	12.191	12.252	114.824	114.797	12.246	
Spatial buffer measures (5 mile)								
Concentrated disadvantage	0.017 *	0.030 **	0.030 **	0.034 **	0.011 **	0.011 **	0.033 **	
	2.127	3.682	3.612	4.222	8.744	8.619	4.033	
Racial/ethnic heterogeneity	-0.007 **	0.001	0.003	0.002	-0.006 **	-0.006 **	-0.001	
	-2.625	0.484	1.204	0.680	-14.462	-15.173	-0.578	
Percent black	0.028 **	0.011 †	0.008	0.007	0.011 **	0.012 **	0.012 *	
	4.978	1.953	1.432	1.391	13.336	13.395	2.293	
Percent Latino	0.004	-0.002	-0.002	-0.003	-0.002 **	-0.002 **	-0.003	
	1.365	-0.830	-0.563	-1.165	-4.584	-4.714	-0.849	
Percent occupied units	-0.018	-0.027 *	-0.023 †	-0.022 †	-0.026 **	-0.027 **	-0.024 †	
	-1.420	-2.233	-1.886	-1.757	-15.247	-15.950	-1.924	
Percent home owners	-0.010 **	0.004	0.003	0.005 †	-0.007 **	-0.005 **	0.003	
	-3.331	1.382	1.145	1.890	-15.058	-11.459	1.292	
Percent aged 16 to 29	0.015 †	0.032 **	0.029 **	0.035 **	0.029 **	0.030 **	0.031 **	
	1.736	3.720	3.397	4.145	22.721	23.663	3.591	
Intercept	-1.271	-1.300	-1.838	-2.117 †	0.533 **	0.549 **	-1.480	
	-1.108	-1.142	-1.604	-1.849	3.056	3.144	-1.294	
N	3952	3952	3952	3952	3952	3952	3952	
pseudo R-sq	0.081	0.078	0.078	0.079	0.078	0.071	0.078	
** p < .01 (two-tail test), * p < .05 (two-tail test), † p < .05 (one-tail test)								
T-values are presented below the coefficients								
Fixed effects of cities are included but not shown								

Immigrant-ethnic activity space

Figure A1. LISA Cluster Map: Immigrant Activity Space (Vietnam)

Figure A2. LISA Cluster Map: Immigrant Activity Space (Korea)

Immigrant-ethnic activity space

Figure A3. LISA Cluster Map: Immigrant Activity Space (China)