Title
Small Local versus Non-Local: Examining the Relationship between Locally Owned Small Businesses and Spatial Patterns of Crime

Journal
Justice Quarterly, 39(5)

ISSN
0741-8825

Authors
Kim, Young-An
Hipp, John R

Publication Date
2022-07-29

DOI
10.1080/07418825.2021.1879899

Peer reviewed

Small local versus Non-Local: Examining the Relationship between Locally Owned Small Business and Spatial Patterns of Crime

Young-An Kim*

John R. Hipp

January 14, 2021

Post-print. Published in Justice Quarterly online

Word count: 8,616

Word count (including references): 10,377

Running Head: "Local Business"

*College of Criminology and Criminal Justice, Florida State University. Address correspondence to Young-An Kim, College of Criminology and Criminal Justice, Florida State University, 308 Eppes Hall, 112 S. Copeland Street, Tallahassee, FL 32306-1273; email: ykim16@fsu.edu.

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, immigration and crime, and geo-spatial analysis. Besides criminology, he is interested in urban studies 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.

Small Local versus Non-Local: Examining the Relationship between Locally Owned Small Business and Spatial Patterns of Crime

Abstract

In the current study, we theorized that businesses in place are subject to two processes: a crime generator effect in which they heighten crime due to increased opportunities and a crime inhibition effect in which certain types of businesses can increase guardianship capability. We explicitly compare the different effects of local vs. non-local and small vs. large businesses on crime in street segments using the data in cities across the Los Angeles metropolitan region by estimating a set of negative binomial regression models for small local, large local, small non-local, and large non-local consumer facing businesses (Retail, Restaurants, Food/Drug Stores, and Services) for violent and property crime. Although we found that most of the business coefficients were positive, local businesses, and particularly small local businesses, have considerably smaller crime-enhancing effects for both violent and property crime.

Keywords: Small local business, place, crime

Small Local versus Non-Local: Examining the Relationship between Locally Owned Small Business and Spatial Patterns of Crime

Introduction

Previous studies highlight the importance of physical environmental features for explaining the location of crime. In particular, the number and type of business facilities have been theorized to affect the levels of criminal opportunities and guardianship in small geographic locations such as street segments because they are important factors that can impact the number and type of people coming into the area (Brantingham and Brantingham 1995; Brantingham and Brantingham 1984; Bernasco and Block 2011; Tillyer, Wilcox, and Walter 2020). Specifically, crime pattern theory looks at how routine activities of individuals including potential offenders, targets, and guardians interact with the physical built environment to produce different spatial patterns of crime. Business facilities operate as *activity nodes* where people spend much of their time for various routine activities. *Crime generators* are places (i.e., business establishments) that bring a large number of people passing through the area (i.e., shopping malls, retail businesses, etc.), while *crime attractors* are places with well-known reputations for criminal opportunities that attract offenders (i.e., alcohol outlets, check-cashing stores, marijuana dispensaries, etc.).

Another body of research has suggested that some businesses can have crime-reducing effects (Jacobs 1961; Williams and Hipp 2019; Wo 2014; Oldenburg 1999, 1991; Papachristos et al. 2011). For example, Jacobs (1961) posited that more socially active areas have increased levels of natural surveillance due to more eyes on the street. Specifically, busier areas with a higher density of various types of businesses tend to have lower levels of disorder and crime because such lively areas tend to have more foot traffic and casual social interactions, which can

effectively work as natural enforcement in the area to bring about potential control benefits. Moreover, Oldenburg (1999) refers to *third place* where people have regular social gatherings beyond the realms of home and work. Because third place businesses such as local restaurants, coffee shops, cafés, etc. promote the casual social meetings among people, they can enhance social ties and interactions, and thus informal social control in the area.

Although existing studies have successfully theorized and revealed the protective or adverse effects of some business facilities on crime in place, less attention has been paid to distinguishing the specific characteristic of *locally owned businesses*. A locally owned business is defined as a business that is owned and run by an entrepreneur based in the local area, primarily targeting the local population to provide goods and services. It is important to consider local ownership status because it might affect the quantity and quality of social interactions among people visiting the business and thus criminal opportunities and guardianship in place. Further, we will distinguish businesses by size based on number of employees, as we expect that smaller local businesses are particularly able to impact social interactions.

Specifically, we expect that small local business facilities have crime-reducing effects, or at least smaller magnitude crime-enhancing effect, compared to non-local businesses for several reasons. First, arguably, small local businesses can better promote informal social control among regulars visiting the areas including the customers, owners, employees, and other community related entities (i.e., non-profit organizations). Second, as suggested by Jacobs (1961), locally owned businesses can indicate how diverse the area is in terms of social and economic activities as one important condition for a place to be livelier. Finally, small local businesses are interconnected with local networks that involve market information sharing and mutual learning,

which generally increases mutual trust and collective efficacy among small local business owners and employees.

In the current study, we assess the importance of local vs. non-local businesses for crime in street segments. Furthermore, we make a distinction between small (less than 50 employees) and large businesses. Thus, we compare the effects on violent and property crime for four types of businesses: small local, large local, small non-local, and large non-local businesses. Using information in the Reference USA business data in 2010 in the Los Angeles Metropolitan region, we identified a business facility as small if it has (1) less than 50 employees, and (2) annual revenue less than $500,000, and local if it is (3) not categorized as a franchise, (4) neither a headquarter nor a branch, and (5) a private company. In the following sections, we discuss the theoretical motivations of the current study and then explain our data, methods, and analytic strategies.

Business Facilities and Crime in Place

A body of research suggests that business facilities may increase the level of crime in a place by functioning as *crime generators/attractors* (Bernasco and Block 2011; Groff 2014; Groff 2011; Groff and Lockwood 2013; Contreras and Hipp 2019; Kubrin and Hipp 2014) and their crime-producing effects are contingent on characteristics of the place (Deryol et al. 2016; Tillyer, Wilcox, and Walter 2020; Wilcox and Eck 2011; Jones and Pridemore 2019). The Brantinghams argued that places with more foot traffic are at higher risk of crime due to increased criminal opportunities and hence the probability of the convergence of potential offenders and targets at the same time and place with the absence of capable guardians (Brantingham and Brantingham 1984; Brantingham and Brantingham 1993; Brantingham and

Brantingham 1995). The Brantinghams posited that spatial patterns of crime could vary by different business facilities, or *activity nodes*. Certain types of businesses (e.g., shopping centers, malls, schools, hotels, etc.) are *crime generators* that draw heavy foot traffic into the area including potential offenders and targets. Although crime generators generally draw people for non-crime-related purposes, they can increase criminal opportunities because of a higher probability of a convergence of potential offenders and targets at the same time and place. Other businesses can be seen as *crime attractors* due to their well-known reputations for criminal opportunities (i.e., alcohol outlets, check-cashing stores, marijuana dispensaries, etc.) because offenders are disproportionately drawn to these places given that they are aware of the opportunities.

Moreover, busier places with more social activities due to business facilities tend to have higher crime rates because of reduced territoriality – a distinct separation between public and private areas (Newman and Franck 1980; Newman 1972; Reynald and Elffers 2009). For instance, Newman (1972) posited that certain physical environmental features can have territorial effects to deter crime in place. Areas with greater distinction between private and semi-private spaces have higher levels of territoriality that encourages responsibility for area surveillance compared to areas that are fully public. Such physical subdivisions can enhance the level of guardianship in place by local residents, which serve as deterrents to crime. Residents in areas with higher levels of territoriality are more likely to consider the space as their own, care more about safety, and exert more control activities, which leads to enhanced levels of guardianship in place. In contrast, busier places with more foot traffic have higher risk of crime due to less territoriality that brings about more ambiguity regarding who is responsible for the surveillance of the area. Prior studies have empirically tested the association between businesses and crime in

place and consistently found that some businesses have crime enhancing effects (Bernasco and Block 2011; Kubrin and Hipp 2014; Groff 2011; Wilcox et al. 2004; Wilcox and Eck 2011).

Distinguishing between Small and Large, Local and Non-local Businesses in Place

In contrast to this literature focusing on the crime-enhancing properties of businesses, other research suggests that business facilities potentially reduce crime in place because they enhance opportunities for social interactions among people living in and visiting the area. Jane Jacobs (1961) argued that more active streets have lower risk of crime because of higher levels of natural surveillance from more eyes on the street. According to Jacobs, the basic element for natural surveillance on the street is a substantial number of business stores along the sidewalks. Therefore, safety is not primarily kept by formal control, such as police, but by informal natural social networks among area-users and enforced by people themselves who are on the busy street. Therefore, "stores, bars, restaurants, as the chief examples, work in several different and complex ways to abet sidewalk safety" (Jacobs, 1961, p.36). Moreover, storekeepers and other small business store employees are strong proponents of keeping the area safe and are therefore opponents of disorder and crime. As a consequence, "they are great street watchers and sidewalk guardians if present in sufficient numbers" (Jacobs, 1961, p.37). The implication we argue is that a distinction should be made between local and non-local businesses, as well as between smaller and larger businesses. This small/large, local/non-local distinction implies a 2x2 categorization of businesses. We turn to this discussion next.

The Impact of Small Local Businesses on Crime

We argue that the theoretical framework of the protective effect of businesses in place is more applicable due to the presence of local businesses, and particularly if they are small, for several reasons. First, locally owned businesses—particularly small ones—can better promote informal social control in the area compared to non-local businesses. Customers of small local businesses may feel more familiarity and less anonymity when visiting the place because local residents may be more likely to locally patronize the businesses. Therefore, small local businesses are more likely to operate as a locus of social activities and interactions among the local residents, which can enhance the level of informal social control among people in the area. Indeed, retail and marketing literature and urban planning studies have emphasized the important role of small local stores as a center for social interactions (Clarke and Banga 2010; Alexander 2008; Alexander and Phillips 2006; Rosenbaum 2006; Mehta 2019, 2009; Jacobs 1961; Stone 1954; Hickman 2013). Rosenbaum (2006) and Rosenbaum et al. (2007) confirmed that local diners, coffee shops and taverns are important facilitators for social interactions and building networks among patrons. These studies have argued that small local businesses play an important role as a desirable space for building social relationships among local residents by providing goods and services to local residents, and promoting local events based on local heritage. Therefore, small local businesses supply products and services to local residents and perform important social functions as well.

Such an argument about locally owned small business and social interactions, mutual trust, and level of guardianship is also related to the theorizing of *third places* and we argue that it is especially the case for the small local business context. Third places include businesses such as restaurants, bars, coffee shops, cafes, ice cream parlors, pizza parlors, etc. Some research has suggested potential crime-reducing effects of these third places (Carr 1992; Carr et al. 1992;

Oldenburg 1991, 1999). According to Carr et al (1992) public spaces can "afford casual encounters in the course of daily life that can bind people together and give their lives meaning and power" (p.45). Oldenburg (1999) also referred to third places "that host the regular, voluntary, informal, and happily anticipated gatherings of individuals beyond the realms of home and work" (p.16). This implies that certain types of businesses can operate as a positive locus for social interactions and thus increase the level of guardianship in place. Social psychological studies of social exchange (a joint activity of two or more actors) have empirically confirmed the effects of repeated exchange among the same actors. Specifically, they found that repeated social encounters with the same others promote social trust and thus enhance social cohesion (Lawler 2001; Lawler and Yoon 1993). Given such empirical evidence, if indeed third places promote casual encounters, it is plausible to theorize that they can function to enhance mutual trust, social ties, and informal social control in the areas where they are located, and thus reduce the risk of crime and disorder.

Furthermore, Jacobs (1961) recognized that, in addition to vitality, diversity of activities is another necessary condition for a place to be livelier because diverse characteristics can draw more visitors with different purposes into the area. According to her, one indicator of a diverse environment for social activity in the place is the proportion of locally owned small business facilities. They represent the amount of local economic consumption by importing and exporting various products, socially interacting with local customers, and providing a social locus for various activities. Therefore, locally owned small businesses can enhance the level of natural surveillance in the area as they bring and maintain the diversity of social activities in a place by keeping the area active and lively. Finally, small local business firms are interconnected with local networks that involve market information sharing and mutual learning generally based on

mutual trust (Johannisson, Ramírez-Pasillas, and Karlsson 2002; Bryson, Wood, and Keeble 1993; Butler and Hansen 1991; Johannisson and Nilsson 1989). Such mutual trust and social networks among local businesses can promote stronger social ties among local business owners and employees, which in turn, increases the level of informal social control in the area.

The Impact of Large Local Businesses on Crime

Whereas our thesis is that small local businesses have the most potential for providing crime reduction, it is also possible that larger local businesses may provide some more limited crime reduction potential. For example, the non-profit organization (NPO) literature has suggested that locally owned businesses are willing to financially and socially support local NPOs that focus on the local community's needs and establish a longer-term relationship with them to jointly address community problems (Austin 2000; Cho and Kelly 2013; Zatepilina-Monacell 2015). Specifically, Austin (2000) conceptualized the three stages of partnership between NPOs and local businesses: 1) philanthropic (businesses financially support the partner NPOs through charitable donations); 2) transactional (businesses and NPOs jointly pursue a mutually beneficial relationship); and 3) integrative (businesses and NPOs share their common missions and collaborate to support common societal good for the local community). Also, in her mixed method study, Zatepilina-Monacell (2015) found that locally owned businesses are interested in greater representation on boards of local NPOs to address the local community's needs, and longer-term committed collaboration with NPOs to resolve any community level issues rather than a one-time sponsorship.

As the communities and crime literature suggests, NPOs can provide important crime-control benefits to neighborhoods (Slocum et al. 2013; Sampson and Groves 1989; Triplett,

Gainey, and Sun 2003; Peterson, Krivo, and Harris 2000; Wo, Hipp, and Boessen 2016; Wo 2018). Whereas small local businesses may be most likely to participate in such partnerships, larger local businesses may participate somewhat as well. If such theoretical perspectives and empirical evidence in terms of NPOs, locally owned businesses, and their collaborations are indeed accurate, we can expect that local businesses can have crime-reducing effects through the mechanism of jointly working with local NPOs to serve the local community for the communal good, through which they potentially enhance the level of collective efficacy and informal social control in the area.

The Impact of Small Non-local Businesses on Crime

Whereas we have argued that local businesses have the most potential for providing guardianship and therefore crime reduction, and this tendency will be strongest for small local businesses, it is also possible that in some instances small non-local businesses can provide some crime reduction capability. Although we believe this effect will be weaker than for local businesses, it is nonetheless possible for non-local businesses, especially smaller ones, to engage in the local community and therefore provide some crime reduction. As one example, Cheang (2002) found that a fast-food restaurant can provide opportunities for social interactions and networks for older adults. Such businesses are typically non-local, so in some instances a smaller scale non-local business may nonetheless provide some crime benefits.

Similarly, the literature on third places has not made a distinction between local and non-local businesses. Again, whereas we argue that local businesses may be best able to act as third places, we acknowledge that some small non-local businesses may operate similarly, given their smaller scale. For example, some criminological studies find evidence that third places

(regardless of local operation) appear to have crime reducing effects (Papachristos et al. 2011; Wo 2014). Papachristos et al. (2011) found that an increase in coffee shops in a neighborhood was associated with decreased homicide rates in Chicago, and these were typically Starbucks locations. So although not local businesses, they still could operate as third places. Wo (2014) also found similar patterns when he combined the number of employees of coffee shops, cafes, bagel and doughnut shops, pizza parlors, ice cream parlors, diners, and snack and beverage shops to construct a measure of third places, typically small but non-local franchises. He found that neighborhoods with more third places have lower crime rates. In a recent study in the city of Los Angeles, Williams and Hipp (2019) found that third places, similarly measured, are associated with greater cohesion and neighbor interaction, particularly in very poor areas. In all of these instances, the smaller scale of the businesses was the focus, and so whereas local small businesses may be most effective as third places, small non-local businesses may have such ability in some cases.

The Impact of Large Non-local Businesses on Crime

The final bin in our 2x2 categorization of businesses is large non-local businesses. We have little reason to expect these businesses to provide a crime reduction capability, based on all the arguments we have made above about smaller and local businesses. Anecdotal accounts describe how the establishment of such large-scale retail businesses in a community can sometimes even drive smaller, local businesses into bankruptcy. One study assessed the possibility that large non-local businesses can impact crime rates in the macro units of counties by assessing the relationship between the placement of a Wal-Mart retail establishment and changes in county crime rates and found evidence that the placement of such a large non-local

business is indeed associated with higher county crime rates (Wolfe and Pyrooz, 2014). We empirically test here whether the impact of large non-local businesses can be detected at a smaller geographic scale.

Summary

In sum, it is plausible to think that a higher density of small local businesses in a place may function as a catalyst for an increased level of social activities, natural surveillance from eyes on the street, and a stronger web of informal social control, all of which can be effective crime controls to reduce crime in place. Unlike small local businesses, nonlocal businesses, especially large ones, might only act as *crime generators* because large nonlocal businesses tend to simply draw a large number of random anonymous people into the place; and thus provide more criminal opportunities while reducing the level of territoriality. Although we theorize that, on average, small local businesses will have owners who are more invested in the neighborhood and thus create more natural surveillance, there will be individual businesses where this is not the case. Therefore, we posit that nonlocal businesses will, on average, provide less natural surveillance, even if certain nonlocal businesses do provide natural surveillance. We posit that these differences between local or nonlocal businesses will operate, on average, and hence be detectable in our analytic approach. As such, we pose the hypotheses as follows:

H1: The presence of small local businesses will have a crime-reducing or at least a smaller positive relationship with crime in place than other businesses do because they are theorized to enhance the level of informal social control among people in the area.

H2: The presence of large non-local businesses will have a consistent and stronger positive relationship with crime in place because they are theorized to be crime generators with more criminal opportunities.

H3: The presence of large local or small non-local businesses will have a moderate crime-reducing relationship with crime in place given their limited ability to enhance the level of informal social control among people in the area.

In the subsequent sections, we describe our data, methods, and analytic strategies. We then interpret our findings and discuss the importance of the results, accordingly.

Data and Methods

Independent Variables

The unit of analysis of the current study is the street segment[1]: both sides of a street between two intersections. Our study contains 208,713 street segments across the Los Angeles metropolitan region (urbanized area in Los Angeles County defined by U.S. Census). To measure local and non-local business facilities in place (both small and large), we utilized the Reference USA business establishment data in 2010. The data include a wealth of information such as addresses, types of businesses by North American Industry Classification System (NAICS) 6-digit code, year of establishment, business revenues, etc. In order to properly obtain the information of businesses in street segments, we geocoded addresses of businesses to latitude–longitude point locations using ArcGIS 10.2 and then aggregated to street segments. The geocoding-hit rate for businesses was about 95% across the study area. Using the Reference USA data, we created various business measures by local and size status: *Small local*, *Large local*, *Small non-local*, and *Large non-local*. Specifically, we first use 6-digit NAICS codes to

[1] The average length of the street segments in the study area is 476.7 feet with standard deviation of 395.3.

create a typology of consumer facing business including *Retail* (Apparel, General Merchandise, Home Products, Personal Products, and Specialty), *Restaurants* (Full-Service and Limited-Service), *Food/Drug Stores* (Convenience Stores, Drug Stores, Groceries, and Specialty Food), and *Services* (Auto Services, Child Care Services, Gas Stations, Laundry, Hair Care Services, Other Personal Services, and Repair Services).[2] We chose these business types because they are identified as consumer-facing (Kane, Hipp, and Kim 2017; Porter 2000; Delgado, Porter, and Stern 2014) and thus attract customers for products or services at the business location. Therefore, they are more relevant for business-oriented foot traffic coming through the area. Moreover, these consumer-facing businesses tend to have frequent face-to-face interactions among business owners, employees, and customers, which are more directly related to the level of social cohesion and ties in the area.

To identify whether business facilities are owned and run by local entrepreneurs or larger corporations, we considered three different attributes in the Reference USA data: (1) whether a business facility is a franchise or not; (2) whether a facility is a headquarter, branch, or neither; and (3) if a facility is publicly traded company, branch of publicly traded company, or private company. The third attribute is based on an assumption that most local businesses tend not to be publicly traded. Therefore, a local business is defined as one that is not a franchise, not a headquarter or branch, and is a private company. Then, to identify whether these consumer facing business facilities are small, we considered two different attributes in the Reference USA

[2] Here is the list of 6-digit NAICS codes associated with the business types included in the consumer facing business measure: *Retail* (448110, 448120, 448130, 448140, 448150, 448190, 448210, 452111, 452112, 452910, 452990, 453310, 453210, 443141, 442110, 442210, 442291, 442299, 444210, 444220, 444130, 444110, 444120, 444190, 453991, 446120, 446199, 453910, 453998, 451211, 451212, 443142, 451140, 451110, 451120, 446130, 453220, 453110, 448310, 448320, 451130); *Restaurants* (6-digit NAICS code 722511, 722514, 722515, 722513); *Food/Drug Stores* (445120, 446110, 445110, 311811, 445210, 445220, 445230, 445291, 445292, 445299, 446191); *Services* (532111, 441310, 441320, 811111, 811112, 811113, 811118, 811121, 811122, 488410, 811191, 811192, 811198, 624410, 447110, 447190, 812320, 812310, 611511, 812111, 812112, 812113, 532220, 532299, 541940, 812191, 812199, 812910, 812990, 541921, 812921, 812922, 561622, 811212)

data: (1) whether a business has less than 50 employees; and (2) if an annual revenue of a facility is less than $500,000. Although there is no clear definition of small business in terms of employment size, we used 50 as a cut-off value. Businesses with 50 or more employees are considered to be large establishments because they are subject to several legal requirements such as Family and Medical Leave Act (FMLA) requirements to provide up to 12 weeks of leave and Affordable Care Act (ACA) compliance to provide healthcare coverage to eligible employees. Also, in California, employers with 50 or more employees must provide proper sexual harassment training for their employees.[3] In terms of the second criterion, according to data from the 2016 U.S. Annual Survey of Entrepreneurs, about 80 percent of the U.S. small businesses generated annual revenue less than $400,000. We used $500,000 annual revenue as a cut-off because it is the smallest sales volume category provided by the Reference USA data. Combining the three criteria for local business and the two criteria for small business together, we classified business facilities into four groups: *Small local*, *Large local*, *Small non-local*, and *Large non-local*. The total number of consumer facing business of each group are aggregated to street segments. To capture the diversity of social activities, we included a *measure of small local business heterogeneity*, a Herfindahl index based on five consumer facing business types (retail, restaurants, food/drug stores, services, and others).[4]

We account for structural determinants of social disorganization using measures from the U.S. Census. Given that street segments are arguably too small to capture potential spatial movement of persons based on these measures, and social ties that are important for fostering informal social control, we constructed these measures with an exponential decay to capture the

[3] We estimated ancillary models with 40, 30, and 20 employee cutoffs (Appendix Table A2). We found that the results are essentially identical compared to those with the 50 employee cutoff (Table 3).
[4] In a supplemental analysis, we tested models with a proportional measure of local business as another way to capture the diversity of social activities in place suggested by Jacobs (1961). The results are not substantially different from the models with a measure of small local business heterogeneity (Appendix Table A1).

fact that the characteristics of nearer segments will be more important for a local segment. This entails constructing each Census measure in blocks, and then weighting each block within ¼ mile by the exponential decay from the focal block (with β =-.5). First, we constructed a *concentrated disadvantage index*, which is a factor score computed after a factor analysis of four measures: (1) percent at or below 125% 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, residential stability is captured with the *percent home owners*. We also included the percent occupied units to measure vacancies. The present study controls for the presence of racial/ethnic minorities as the percent African American and the percent Latino/Hispanic. To capture the level of *racial/ethnic heterogeneity*, a Herfindahl index based on five racial/ethnic groups (white, African American, Latino, Asian, and other races) was computed. We included a measure of *percent aged 16-29*, as this captures the more crime-prone age. The *population (logged)* is also included to capture potential offenders in the local area. Finally, we include measures of *land use* in each segment to capture the general characteristics of the physical environment using Southern California Association of Government (SCAG) 2008 land use data. The percent of the land area for 1) industrial; 2) office; and 3) residential were constructed and included in the estimated models.

Dependent Variables

The dependent variables of this study are the number of violent (robbery and aggravated assault) and property (burglary, larceny, and motor vehicle theft) crime incidents.[5] The crime

[5] The five crime types assessed are Part 1 crimes as defined by the Uniform Crime Reports. These are considered to be serious crimes that have relatively fewer reporting issues (Baumer 2002) compared to other less serious crime incidents such as Part 2 crimes including drug offenses, disorderly conduct, etc. We also analyze these Part 1 crime types because social disorganization and routine activities studies generally focus on these crime types. We excluded

data for this study come from the Southern California Crime Study (SCCS). These are from official crime data. Police agencies of cities reported incident crime data with geographic information such as addresses or 100 blocks. The SCCS classified crime events into violent and property crime. Crime events were geocoded for each city separately to latitude–longitude point locations using ArcGIS 10.2, and subsequently aggregated to street segments. In the current study, we used the average of crime incident data in 2010, 2011 and 2012 at the street segment level. The geocoding-hit rate was about 97% over all cities included in the current study.

Some prior studies have not included crime incidents that occurred at intersections for the following reasons: (1) Since the events at intersections could be considered part of any one of the participating street segments, there is no clear method for assigning them to one or another; and (2) incident reports at intersections differed dramatically from those at street segments (Weisburd et al. 2012; Weisburd et al. 2014; Groff et al. 2010). However, if characteristics of crime at intersections (about one percent in the data) are not different from those at street segments, excluding them might introduce systematic bias. Therefore, instead of simply dropping all crime incidents at intersections, we evenly assigned them to contiguous street segments (Kim, 2018). For instance, a typical intersection where two roads intersect has four street segments. If a crime incident occurred on this intersection, each of four segments is given 0.25 of a crime incident.

Analytic Strategy

We employed negative binomial regression models to effectively account for over-dispersion given that the dependent variables of the current study are counts of crime events

homicide because they are too rare on micro places like street segments to show meaningful variation. In ancillary model, we constructed a violent crime measure including homicide and the estimated models showed results not substantially different from those without homicide. We also estimated models with summed counts of violent and property crimes and found essentially identical results.

(Osgood 2000; Long 1997). Street segments may have different levels of exposure to crime. Therefore, we included a logged street length as an exposure term in the models with the coefficient set equal to one. We also included a dichotomous variable for each city (a fixed effects modeling approach) to compare levels of crime *within* a particular city rather than *across* cities. That is, we controlled the effect of each city included in the models to be fixed across all study area to control for baseline differences between cities in the region. Research has emphasized the spatial dependence of neighborhoods in relation to the distribution of crime (Anselin et al., 2000; Cohen and Tita 1999). To account for potential spatial autocorrelation, we include spatially lagged independent variables for the business measures. We created spatially lagged measures of small local, large local, small non-local, and large non-local based on an inverse distance function with a cutoff at 1/4 mile around the street segment.

We estimated a series of models in which the effects of characteristics of business facilities abovementioned are tested while controlling for the effects of structural measures. Our model tests whether the distinction of small local, large local, small non-local, and large non-local business matters in terms of crime. To do this, we include the number of these four types of businesses identified using the method discussed above. The general form of these models is:

$$E(y) = exp(\alpha + \beta_1 SL + \beta_2 LL + \beta_3 SN + \beta_4 LN + \beta_5 H + \beta_6 \boldsymbol{LU} + \beta_7 \boldsymbol{S} + \beta_8 WSL + \beta_9 WLL + \beta_{10} WSN + \beta_{11} WLN + \beta_{12} \boldsymbol{C})$$

where *y* is the dependent variable to be explained (the number of crime events), α is an intercept, *SL* represents small local businesses, *LL* is large local businesses, *SN* is small non-local businesses, *LN* is large non-local businesses, and *H* represents the local business heterogeneity. $\boldsymbol{LU}$ is a matrix of the land use measures, $\boldsymbol{S}$ is a matrix of the structural characteristic variables, *WSL* is spatially lagged small local businesses, *WLL* is spatially lagged large local businesses,

WSN is spatially lagged small non-local businesses, and *WLN* is spatially lagged large non-local businesses. ***C*** is a matrix of the dummy variables for cities. We include squared terms for the segment-level business measures in the models to capture non-linear relationships.

Results

The means and standard deviations of all study variables are reported in Table 1. Street segments in the study area have 0.15 violent crimes and 0.63 property crimes, on average. Whereas street segments have more small local businesses, on average, there are notably fewer of the other types of businesses in the study area. This is reasonable given that about 80 percent of business establishments in California were identified as small businesses with fewer than 100 employees and about 70 percent of them have 20 or fewer employees in 2015, according to the Census Bureau's Statistics of U.S. Businesses.[6] In terms of the socio-demographics, we observe a modest level of racial/ethnic heterogeneity across the study area. We also find a considerably smaller number of African Americans, but a larger representation of Latinos, which is consistent with our knowledge of the study area. There are 64 percent home owners, on average, and a substantially high proportion of occupied housing units across the study area. We also observe that the composition of residents in the high crime prone ages of 16 to 29 is about 21 percent across the study area.

<<< Table 1 about here >>>

Figure 1 is a map of Los Angeles City with street segments colored according to the number of small local businesses. Although our study area is the Los Angeles metropolitan region, Figure 1 zooms into the city of Los Angeles, a part of the study area, for a better mapping extent. Red streets have more small local businesses while the blue streets have fewer small local

[6] For more information: https://www.census.gov/data/tables/2015/econ/susb/2015-susb-annual.html

businesses. As presented, there is variation in terms of the number of small local businesses in Los Angeles. Specifically, we see a spatial concentration of small local businesses in the Los Angeles Downtown and Koreatown areas (right-center area of the map extent where red streets are spatially concentrated). One question is how spatially coterminous local and nonlocal businesses are in the study area. To answer this question, we conducted a correlational analysis. The correlation values are reported in Table 2, and show that local and non-local businesses are less likely to co-locate. Small and large local businesses are more likely to co-locate (0.41 correlation), as are small and large non-local businesses (0.40).

<<< Figure 1 about here >>>

<<< Table 2 about here >>>

Next, we turn to our findings from the estimated models. We report the coefficient values of the negative binomial regression models in Table 3. We visually display the marginal effects of the business measures in Figures 2-3 by crime types. The x-axis represents the values of business measures from the 1st to 99th percentile, while the y-axis is the logged predicted crime.[7] We observe important differences when considering the business size and local ownership status. First, we found that nonlocal businesses have notably larger crime-enhancing effects for both violent and property crimes compared to the local ones, which is consistent with our hypotheses. That is, local businesses (small and large) generally have smaller positive coefficients than the nonlocal businesses. It is noteworthy that the small local businesses have considerably smaller crime-enhancing effects for both violent and property crime compared to the other groups. For instance, as the number of nonlocal businesses in a street segment increases, violent crime risk also increases (Figure 2). Specifically, going from zero to one large or small non-local business

[7] Negative predicted values in the y-axis occur because we are plotting the logged expected values of the negative binomial distribution with the exposure variable. The predicted values could be expressed with exponentiated values, though the relative ranking of the figures would remain the same.

results in approximately 15 and 19 percent higher risk of violent crime, respectively.[8] However, we observed a substantially smaller effect for large local businesses, as one more large local business is associated with 7 percent higher risk of violent crime. Moreover, the crime-enhancing effect for violent crime is much smaller for small local businesses. For instance, one more small local business is associated with just a 2 percent increase in violent crime risk in street segments. Thus, the increased opportunity from these businesses is almost completely balanced by their hypothesized guardianship capability. Although there is some evidence that if there are several small non-local businesses the nonlinear effect flattens, there are in fact very few street segments with this number of such establishments.

<<< Figures 2 and 3 about here >>>

For the property crime model, we observed a similar pattern (Figure 3). That is, increases in the number of nonlocal (small and large) businesses results in a higher risk of property crime in street segments. Specifically, there is approximately 25 and 15 percent more property crime when going from zero to one small or large non-local business, respectively. Although local (small and large) businesses exhibit a crime-enhancing pattern for property crime, their effect sizes are considerably smaller in magnitude than those of nonlocal businesses, which is consistent with our hypotheses. For instance, each additional small or large local business is associated with 1 and 8 percent more property crime risk, respectively, which are substantially smaller effects than those of non-local (small and large) businesses. Again, the slowing positive effect for small non-local businesses only occurs in the range of data with very few street segments. Finally, we observe that the small local business heterogeneity measure has an

[8] Given the nonlinear relationship of these businesses with violent crime, these values are assessed by comparing the expected log value from Figure 2 when going from 0 to 1 business for each of these business types, and then exponentiating this value to obtain these percentage changes. We perform a similar computation when assessing the change in property crime.

unexpected positive relationship with the risk of crime in place. The relationship is nearly linear with violent crime and a slowing positive relationship with property crime (not shown). Thus, every 5-percentage point increase in small local business heterogeneity results in about a 5 percent and a 3 percent increase in violent and property crime on average, respectively.

<<< Table 3 about here >>>

Next, we turn to the findings of local and non-local businesses in the surrounding area. We found that local and non-local businesses in surrounding areas also differentially impact crime in the focal segments. Surrounding area coefficients generally show a similar pattern (but smaller in magnitude) compared to the focal segment local and non-local businesses. Specifically, the presence of more nonlocal businesses (small and large) in the surrounding area is associated with more violent and property crime, in general. Likewise, the presence of more large local businesses in the surrounding area is associated with more violent crime. However, small local businesses appear to have an advantageous spatial effect: the presence of more of them in the surrounding area is associated with a much smaller increase in violent crime compared to the presence of non-local businesses, and their presence is actually associated with a small but statistically significant reduction in property crime in the focal area.

<<< Figures 4 and 5 about here >>>

Finally, we briefly discuss the control variables. Street segments with more population have higher risk of violent and property crime. Also, segments with greater concentrated disadvantage have more crime. More racially/ethnically heterogeneous areas have higher risk of crime, while percent homeowners are negatively associated with crime in place. Areas with more occupied units have lower violent and property crime rates. For the land use measures, street segments with more industrial land use have less violent and property crimes, whereas a greater

proportion of office land use predicts lower risk of violent but more property crime. The percent residential land use has a crime-reducing effect for violent and property crime.

Discussion

Although previous studies have recognized the importance of business facilities for understanding the spatial patterns of crime, less attention has been paid to the local ownership status of businesses – that is, whether the business is owned and run by local entrepreneur. We theorized that locally owned small businesses can have crime-reducing effects or at least reduce the magnitude of the crime-enhancing effects of businesses because the theorized natural surveillance and guardianship in place is more directly applicable to small local businesses than nonlocal ones. To our knowledge, this is the first study that explicitly incorporates the local ownership status and the size of businesses and attempts to verify the dissimilar effects between the local vs. nonlocal and small vs. large business facilities in place, which is one primary contribution of the current study.

We theorized, and generally found, that businesses in local areas are subject to two processes: a crime generator effect in which they heighten crime due to increased opportunities and a crime inhibition effect in which certain types of businesses can increase guardianship capability. The crime generator effect is frequently posited, and found, in ecological studies of crime. We also found evidence for this here, as most of the business coefficients were positive. However, we also found evidence for our hypothesis that small local businesses can, in general, increase guardianship and therefore have considerably smaller crime-producing effects. Whereas nonlocal businesses were almost always associated with higher levels of crime in our models—under the presumption that they are less likely to provide guardianship capability—local

businesses (small and large) appeared to exhibit evidence of both processes, as they almost always had substantially smaller positive coefficients than the nonlocal businesses, which is consistent with our hypotheses. This implies that whereas local businesses to some extent can increase crime due to heightened crime opportunities (just as non-local businesses do), they also have this countervailing process that reduces crime. One possible explanation for these findings could be that owners and employees of small local businesses tend to know the area more and spend more time locally, and thus they are more likely to intervene to prevent crime and disorder. Also, customers of small local businesses tend to be local, and know and care more about the business firms, the onsite locations and surrounding areas. Therefore, there would be a higher level of guardianship and informal social control, which leads to relatively lower risk of crime.

Some urban planning studies have confirmed the importance of social interactions provided by small local businesses in the area (Hickman 2013; Clarke and Banga 2010; Baron et al. 2001; Mehta 2009; Stone 1954; Mehta 2019; Rosenbaum 2006). For example, in his ethnographic work, Hickman (2013) noted that local third places are an important locus for social interactions for local residents, especially for the residents in deprived areas. In particular, he emphasized how local residents see the importance of the local store as a location for social interactions. Local residents regularly visit the small local store, and the owners, employees, and customers know each other. People occasionally meet friends and other neighbors and have casual social interactions at small local stores. Hickman (2013) found that local residents complained about losing places for social interactions with other residents with the closure of small local businesses. Our findings of local businesses may follow along similar lines of these

previous findings that local businesses can enhance social interactions as well as informal social control among local residents, rather than function primarily as criminogenic facilities.

Some previous studies (Papachristos et al., 2011; Wo, 2014) found that "third places" such as coffee shops and cafes can have efficacious crime control in place. However, we found that small local businesses have weaker but still crime-enhancing effects. Why the apparent difference? One possible explanation is the comparison involved: these prior studies utilized a longitudinal design, and therefore were comparing a location with and without these third places. Our cross-sectional approach is comparing locations with these local shops to those with no businesses at all, at a point in time. Arguably a more appropriate comparison is to non-local businesses, and the smaller positive coefficients for our local businesses are informative. Presumably, a longitudinal study in which we viewed the transition from non-local to local businesses would observe a drop in crime due to the change in these business types, but this should be tested. Based on this logic, our proxy for businesses that foster guardianship may operate similarly to the proxies for third places used in these prior studies. Nonetheless, future research would need to assess this.

Another possibility is that the mix of businesses included in our local business measure should be adjusted if not all types equally provide such benefits. For example, whereas Wo (2014) included coffee shops, cafes, bagel and doughnut shops, pizza parlors, ice cream parlors, diners, and snack and beverage shops in his measure of third places, our consumer facing business measure included retailers, restaurants, food/drug stores, and service providers. Only including types of businesses that actually foster guardianship would presumably improve the measures constructed. It may well be that it is a combination of how much social interaction goes on in a specific type of business (the presumption of third places), along with the small local

status of the business, that combines to create a guardianship capability. These considerations should underlie future research on the topic.

We found evidence that businesses in the surrounding area also can provide a spatial diffusion of control benefits to the focal segment. On the one hand, the crime enhancing effects from businesses in the surrounding area may imply the diffusion of criminal opportunities, which is consistent with previous findings that physical environment features such as land use and business facilities in nearby areas impact the spatial patterns of crime in the focal segment (Groff 2014; Groff 2011; Boessen and Hipp 2015; Kim and Hipp 2019; Kim 2018; Hipp and Kim 2019). On the other hand, we found that the presence of small local businesses in the surrounding area had a weaker positive effect on violent crime, and actually had a negative relationship with property crime. Although Jane Jacobs posited that small shop owners can provide oversight on their own street, our results suggest that it is also possible that the general cohesion that such shops may enhance can spill over into adjacent streets as patrons of the stores move about in the area and serve as potential guardians. The fact that small local businesses appear to have a substantially weaker crime enhancing effect in the specific street segment, and a small crime reducing effect in the surrounding ones, implies that understanding how they accomplish this would be a useful direction for future research.

We acknowledge some limitations to the current study. First, the current study is designed to be cross sectional which raises important theoretical and methodological challenges (Taylor 2015; Wickes and Hipp 2018; Hipp 2010). One theoretical risk of a cross-sectional design is endogeneity. That is, crime at a previous time point can change the physical and social environment of the focal and surrounding areas including businesses in place (Hipp et al. 2019). This can be better captured by looking at the association between the social/physical

environment and crime in a longitudinal design. Moreover, a recent body of studies have revealed that the business-crime nexus in place can be temporally dynamic across relatively short time frames such as hours of the day and days of the week (Haberman and Ratcliffe 2015; Hipp and Kim 2019; Hipp et al. 2018; Bernasco, Ruiter, and Block 2016). We hope future longitudinal research can clarify the long- and short-term temporal dynamics of local businesses and crime in place.

Second, although we provided possible explanations for the results, it is beyond the scope of the current study to test the mechanisms of how small local businesses facilitate guardianship capability compared to nonlocal businesses in a place. Although we hypothesized such mechanisms based on prior research, a necessary next step would be studying the specific mechanisms by employing other research strategies, such as qualitative or survey methods. Studies that could explicitly link the presence of small local businesses to increased social control capability would be particularly useful. Third, although we employed street segments as our spatial unit of analysis while accounting for the characteristics in surrounding areas, there still remain empirical and theoretical questions of spatial scaling. Testing the effects of local vs. non-local and small vs. large businesses on crime at various spatial units including Census administrative boundaries (i.e., Census blocks) or other alternative approaches of neighborhood conceptualizations such as egohoods (Hipp and Boessen 2013) or street egohoods (Kim and Hipp 2019) merits future scrutiny. Relatedly, Wilcox and colleagues (Wilcox, Gialopsos, and Land 2012) proposed that the broader context might moderate various features of the micro-environment, and there is evidence of this in studies of other features of the micro environment (Contreras 2016; Boessen and Hipp 2018). Thus, it is possible that the effects of businesses on street segment crime might be conditional on various physical and social characteristics of the

broader areas. Although this was outside the scope of our study, it should be an area of future research. Although we controlled for the possible effects from surrounding areas with spatially lagged independent variables and baseline differences between cities in the study area by including a dichotomous variable for each city, future work explicitly testing moderating effects of specific measures would be useful.[9]

Fourth, the measures of local and small businesses employed in the current study could be further refined by considering other business characteristics. For example, distance from homes of residents to businesses could be incorporated given that residents are more likely to visit business establishments closer to their homes. Considering these characteristics specifically when measuring local and small businesses may be a better way to capture the local ownership status of businesses and their crime-reducing effects in place given that it better incorporates the actual relationship between local business facilities, owners, employees, and residents.

Fifth, there could be some variations within the consumer facing business category if more fine-grained business types within the category are employed. For example, although they are identified as consumer facing type businesses, restaurants and beauty-related services could have different effects on the spatial patterns of crime given that they provide different goods and services, and thus draw different numbers and types of people into the area. Moreover, these businesses could have different regulations and guidelines to maintain the store security such as policies for CCTV installment, or renovation and remodeling policies for better interior/exterior physical environments, and effective systems for maintaining physical design and environments for keeping better security of the stores and the area. We did not explore this here given that it was outside the scope of this study, and because we did not have any a priori expectations of

[9] In ancillary models, we tested an interaction between concentrated disadvantage in the surrounding area and our business typology variables. There were negative interactions for the local businesses, and positive interactions for the non-local businesses, although plotting the effects showed modest relationships.

how these different business types might impact guardianship. We hope future research will delve into the dissimilar effects of local and small businesses on crime by employing more detailed types of businesses.

In conclusion, the current study examined how local (small and large) businesses can operate differently compared to nonlocal businesses in street segments in the Los Angeles metropolitan region in California. We theorized that local businesses—particularly small ones—have crime-reducing effects because local businesses can better provide guardianship and informal social control in a place compared to non-local businesses. Our findings showed that most local businesses exhibit smaller net crime-enhancing effects compared to nonlocal businesses. Therefore, a primary contribution of the current study was to theoretically and empirically explore the different effects of businesses on spatial patterns of crime by varying local ownership status. To the best of our knowledge, this is the first study that explicitly teases apart the specific characteristics of businesses by local ownership status and business size, and examines the association with crime in place. We hope understanding such nuanced processes of small local businesses and crime can help develop long- and short-term place-based policies for crime prevention.

References

Alexander, Andrew. 2008. Format development and retail change: supermarket retailing and the London Co-operative Society. *Business History* 50 (4):489-508.

Alexander, Andrew, and Simon Phillips. 2006. 'Fair play for the small man': Perspectives on the contribution of the independent shopkeeper 1930–c.1945. *Business History* 48 (1):69-89.

Austin, James E. 2000. Strategic Collaboration Between Nonprofits and Businesses. *Nonprofit and Voluntary Sector Quarterly* 29 (1_suppl):69-97.

Baron, Steve, Kim Harris, David Leaver, and Brenda M. Oldfield. 2001. Beyond convenience: the future for independent food and grocery retailers in the UK. *The International Review of Retail, Distribution and Consumer Research* 11 (4):395-414.

Baumer, Eric P. 2002. Neighborhood Disadvantage and Police Notification by Victims of Violence. *Criminology* 40 (3):579-616.

Bernasco, Wim, and Richard L. Block. 2011. Robberies in Chicago: A Block-Level Analysis of the Influence of Crime Generators, Crime Attractors, and Offender Anchor Points. *Journal of Research in Crime and Delinquency* 48 (1):33-57.

Bernasco, Wim, Stijn Ruiter, and Richard Block. 2016. Do Street Robbery Location Choices Vary Over Time of Day or Day of Week? A Test in Chicago. *Journal of Research in Crime and Delinquency* 54 (2):244-275.

Boessen, Adam, and John R. Hipp. 2015. Close-ups and the scale of ecology: Land use and the geography of social context and crime. *Criminology* 53 (3):399-426.

———. 2018. Parks as Crime Inhibitors or Generators: Examining Parks and the Role of their Nearby Context. *Social Science Research* 76 (1):186-201.

Brantingham, P. , and P. Brantingham. 1995. Criminality of place: Crime generators and crime attractors. *European Journal on Criminal Policy and Research* 3 (3):1-26.

Brantingham, P. L., and P. J. Brantingham. 1993. Nodes, paths and edges: Considerations on the complexity of crime and the physical environment. *Journal of Environmental Psychology* 13:3-28.

Brantingham, P.L. , and P.J. Brantingham. 1984. *Patterns in Crime*. New York, NY: Macmillan.

Bryson, John, Peter Wood, and David Keeble. 1993. Business networks, small firm flexibility and regional development in UK business services. *Entrepreneurship & Regional Development* 5 (3):265-278.

Butler, John E., and Gary S. Hansen. 1991. Network evolution, entrepreneurial success, and regional development. *Entrepreneurship & Regional Development* 3 (1):1-16.

Carr, Stephen. 1992. *Public space*: Cambridge University Press.

Carr, Stephen, Mark Francis, Leanne Rivlin, and Andrew Stone. 1992. Public Space, Environment and Behavior Series: Cambridge, Cambridge University Press.

Cheang, Michael. 2002. Older adults' frequent visits to a fast-food restaurant: Nonobligatory social interaction and the significance of play in a "third place". *Journal of Aging Studies* 16 (3):303-321.

Cho, Moonhee, and Kathleen S. Kelly. 2013. Corporate Donor–Charitable Organization Partners: A Coorientation Study of Relationship Types. *Nonprofit and Voluntary Sector Quarterly* 43 (4):693-715.

Clarke, Ian, and Sunil Banga. 2010. The economic and social role of small stores: a review of UK evidence. *The International Review of Retail, Distribution and Consumer Research* 20 (2):187-215.

Contreras, Christopher. 2016. A Block-Level Analysis of Medical Marijuana Dispensaries and Crime in the City of Los Angeles. *Justice Quarterly* 34 (6):1069-1095.

Contreras, Christopher, and John R. Hipp. 2019. Drugs, Crime, Space, and Time: A Spatiotemporal Examination of Drug Activity and Crime Rates. *Justice Quarterly*:1-23.

Delgado, Mercedes, Michael E. Porter, and Scott Stern. 2014. Defining Clusters of Related Industries: National Bureau of Economic Research, Inc.

Deryol, Rustu, Pamela Wilcox, Matthew Logan, and John Wooldredge. 2016. Crime Places in Context: An Illustration of the Multilevel Nature of Hot Spot Development. *Journal of Quantitative Criminology* 32 (2):305-325.

Groff, Elizabeth. 2011. Exploring 'near': Characterizing the spatial extent of drinking place influence on crime. *Australian & New Zealand Journal of Criminology* 44 (2):156-179.
Groff, Elizabeth R., and Brian Lockwood. 2013. Criminogenic Facilities and Crime across Street Segments in Philadelphia: Uncovering Evidence about the Spatial Extent of Facility Influence. *Journal of Research in Crime and Delinquency*.
Groff, ElizabethR. 2014. Quantifying the Exposure of Street Segments to Drinking Places Nearby. *Journal of Quantitative Criminology* 30 (3):527-548.
Haberman, Cory P., and Jerry H. Ratcliffe. 2015. Testing for Temporally Differentiated Relationships Among Potentially Criminogenic Places and Census Block Street Robbery Counts. *Criminology* 53 (3):457-483.
Hickman, Paul. 2013. "Third places" and social interaction in deprived neighbourhoods in Great Britain. *Journal of Housing and the Built Environment* 28 (2):221-236.
Hipp, John R. 2010. A dynamic view of neighborhoods: The reciprocal relationship between crime and neighborhood structural characteristics. *Social Problems* 57 (2):205-230.
Hipp, John R., Christopher Bates, Moshe Lichman, and Padhraic Smyth. 2018. Using Social Media to Measure Temporal Ambient Population: Does it Help Explain Local Crime Rates? *Justice Quarterly*:1-31.
Hipp, John R., and A. Boessen. 2013. Egohoods as waves washing across the city: A new measure of neighborhoods. *Criminology* 51:287-327.
Hipp, John R., and Young-An Kim. 2019. Explaining the temporal and spatial dimensions of robbery: Differences across measures of the physical and social environment. *Journal of Criminal Justice* 60:1-12.
Hipp, John R., Seth A. Williams, Young-an Kim, and Jae Hong Kim. 2019. Fight or Flight? Crime as a Driving Force in Business Failure and Business Mobility. *Social Science Research* 82:164-180.
Jacobs, Jane. 1961. *The death and life of great American cities*: Vintage.
Johannisson, Bengt, and Anders Nilsson. 1989. Community entrepreneurs: networking for local development. *Entrepreneurship & Regional Development* 1 (1):3-19.
Johannisson, Bengt, Marcela Ramírez-Pasillas, and Gösta Karlsson. 2002. The institutional embeddedness of local inter-firm networks: a leverage for business creation. *Entrepreneurship & Regional Development* 14 (4):297-315.
Jones, Roderick W., and William Alex Pridemore. 2019. Toward an Integrated Multilevel Theory of Crime at Place: Routine Activities, Social Disorganization, and The Law of Crime Concentration. *Journal of Quantitative Criminology* 35 (3):543-572.
Kane, Kevin, John R Hipp, and Jae Hong Kim. 2017. Analyzing Accessibility Using Parcel Data: Is There Still an Access–Space Trade-Off in Long Beach, California? *The Professional Geographer*:1-18.
Kim, Young-An. 2018. Examining the Relationship Between the Structural Characteristics of Place and Crime by Imputing Census Block Data in Street Segments: Is the Pain Worth the Gain? *Journal of Quantitative Criminology* 34 (1):67-110.
Kim, Young-An, and John R. Hipp. 2019. Street Egohood: An Alternative Perspective of Measuring Neighborhood and Spatial Patterns of Crime. *Journal of Quantitative Criminology*.
Kubrin, Charis E., and John R. Hipp. 2014. Do Fringe Banks Create Fringe Neighborhoods? Examining the Spatial Relationship between Fringe Banking and Neighborhood Crime Rates. *Justice Quarterly*:1-30.
Lawler, Edward J. . 2001. An affect theory of social exchange. *American Journal of Sociology* 107:321–352.
Lawler, Edward J., and Jeongkoo Yoon. 1993. Power and the emergence of commitment behavior in negotiated exchange. *American Sociological Review* 58 (465–481).
Long, J. Scott. 1997. *Regression models for categorical and limited dependent variables*. 2455 Teller Road Thousand Oaks, California 91320: SAGE Publications, lnc.
Mehta, Vikas. 2009. Look Closely and You Will See, Listen Carefully and You Will Hear: Urban Design and Social Interaction on Streets. *Journal of Urban Design* 14 (1):29-64.
———. 2019. Streets and social life in cities: a taxonomy of sociability. *URBAN DESIGN International* 24 (1):16-37.
Newman, Oscar. 1972. *Defensible space*: Macmillan New York.

Newman, Oscar, and Karen A Franck. 1980. *Factors Influencing Crime and Instability in Urban Housing Developments: Executive Summary*: US Department of Justice, National Institute of Justice.
Oldenburg, Ray. 1991. *The Great Good Place*: Paragon House.
———. 1999. *The great good place: Cafes, coffee shops, bookstores, bars, hair salons, and other hangouts at the heart of a community*: Da Capo Press.
Osgood, D. Wayne. 2000. Poisson-based regression analysis of aggregate crime rate. *Journal of Quantitative Criminology* 16 (1):21-43.
Papachristos, V. A., M. C. Smith, L. M. Scherer, and A. M. Fugiero. 2011. More coffee, less crime? The relationship between gentrification and neighborhood crime rates in Chicago, 1991 to 2005. *City and Community* 10 (3):215-240.
Peterson, Ruth D., Lauren J. Krivo, and Mark A. Harris. 2000. Disadvantage and Neighborhood Violent Crime: Do Local Institutions Matter? *Journal of Research in Crime and Delinquency* 37:31–63.
Porter, Michael E. 2000. Location, Competition, and Economic Development: Local Clusters in a Global Economy. *Economic Development Quarterly* 14 (1):15-34.
Reynald, Danielle M., and Henk Elffers. 2009. The Future of Newman's Defensible Space Theory: Linking Defensible Space and the Routine Activities of Place. *European Journal of Criminology* 6 (1):25-46.
Rosenbaum, Mark S. 2006. Exploring the Social Supportive Role of Third Places in Consumers' Lives. *Journal of Service Research* 9 (1):59-72.
Rosenbaum, Mark S., James Ward, Beth A. Walker, and Amy L. Ostrom. 2007. A Cup of Coffee With a Dash of Love: An Investigation of Commercial Social Support and Third-Place Attachment. *Journal of Service Research* 10 (1):43-59.
Sampson, R. J., and B. Groves. 1989. Community Structure and Crime: Testing Social-Disorganization Theory *American Journal of Sociology* 94 (4):774-802.
Slocum, Lee Ann, Andres F. Rengifo, Tiffany Choi, and Christopher R. Herrmann. 2013. The Elusive Relationship between Community Organizations and Crime: An Assessment across Disadvantaged Areas of the South Bronx. *Criminology* 51 (1):167-216.
Stone, Gregory P. 1954. City Shoppers and Urban Identification: Observations on the Social Psychology of City Life. *American Journal of Sociology* 60 (1):36-45.
Taylor, Ralph B. 2015. *Community Criminology: Fundamentals of Spatial and Temporal Scaling, Ecological Indicators, and Selectivity Bias*: NYU Press.
Tillyer, Marie Skubak, Pamela Wilcox, and Rebecca J. Walter. 2020. Crime Generators in Context: Examining 'Place in Neighborhood' Propositions. *Journal of Quantitative Criminology*.
Triplett, Ruth A., Randy R. Gainey, and Ivan Y. Sun. 2003. Institutional Strength, Social Control and Neighborhood Crime Rates. *Theoretical Criminology* 7 (4):439-467.
Wickes, Rebecca, and John R. Hipp. 2018. The spatial and temporal dynamics of neighborhood informal social control and crime. *Social Forces* 97 (1):277-308.
Wilcox, Pamela, and John E. Eck. 2011. Criminology of the unpopular. *Criminology & Public Policy* 10 (2):473-482.
Wilcox, Pamela, Brooke Miller Gialopsos, and Kenneth C. Land. 2012. Multilevel Criminal Opportunity. In *Oxford Handbook of Criminological Theory*, edited by F. T. Cullen and P. Wilcox: Oxford.
Wilcox, Pamela, Quisenberry Neil, T. Cabrera Debra, and Jones Shayne. 2004. Busy Places and Broken Windows? Toward Defining the Role of Physical Structure and Process in Community Crime Models. *The Sociological Quarterly* 45 (2):185-207.
Williams, Seth A., and John R. Hipp. 2019. How great and how good?: Third places, neighbor interaction, and cohesion in the neighborhood context. *Social Science Research* 77:68-78.
Wo, James C. 2014. Community Context of Crime: A Longitudinal Examination of the Effects of Local Institutions on Neighborhood Crime. *Crime & Delinquency*.
———. 2018. Understanding the density of nonprofit organizations across Los Angeles neighborhoods: Does concentrated disadvantage and violent crime matter? *Social Science Research* 71:56-71.

Wo, James C., John R. Hipp, and Adam Boessen. 2016. Voluntary organizations and neighborhood crime: a dynamic perspective. *Criminology* 54 (2):212-241.
Wolfe, Scott E., and David C. Pyrooz. 2014. Rolling Back Prices and Raising Crime Rates? *British Journal of Criminology* 54 (2):199-221.
Zatepilina-Monacell, Olga. 2015. Small Business–Nonprofit Collaboration: Locally Owned Businesses Want to Take Their Relationships With Community-Based NPOs to the Next Level. *Journal of Nonprofit & Public Sector Marketing* 27 (2):216-237.

Table 1. Summary statistics

	Mean	Std. Dev.
Crime (3-year average)		
Violent	0.15	0.59
Property	0.63	2.10
Business measures		
Small local business	0.15	1.07
Large local business	0.09	0.70
Small non-local business	0.01	0.20
Large non-local business	0.04	0.56
Small local business heterogeneity	0.03	0.12
Structural characteristics		
Population (logged)	7.21	0.75
Concentrated disadvantage	-0.33	0.92
Racial/ethnic heterogeneity	0.48	0.16
Percent home owners	63.79	25.22
Percent Black	6.26	11.75
Percent Latino	39.77	28.66
Percent occupied units	95.00	3.83
Percent aged 16-29	21.21	6.52
Land use (%)		
Industrial	3.29	11.33
Office	2.92	10.03
Residential	72.95	29.27
Spatially lagged measures - 1/4 mile		
Small local business	78.76	191.24
Large local business	3.87	11.74
Small non-local business	23.84	60.87
Large non-local business	9.77	32.44

Table 2. Correlations between the independent variables

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Small local business																			
2	Large local business	0.41																		
3	Small non-local business	0.21	0.19																	
4	Large non-local business	0.25	0.27	0.40																
5	Small local business heterogeneity	0.53	0.31	0.18	0.21															
6	Population (logged)	0.05	0.00	0.00	-0.01	0.08														
7	Concentrated disadvantage	0.06	0.04	0.01	0.03	0.11	0.45													
8	Racial/ethnic heterogeneity	0.00	-0.01	0.01	0.01	-0.02	-0.04	-0.09												
9	Percent home owners	-0.13	-0.11	-0.04	-0.05	-0.22	-0.52	-0.60	0.07											
10	Percent Black	0.01	0.00	0.00	0.00	0.01	0.11	0.26	0.12	-0.13										
11	Percent Latino	0.03	0.01	0.00	0.01	0.06	0.38	0.79	-0.34	-0.36	0.02									
12	Percent occupied units	-0.06	-0.06	-0.02	-0.03	-0.09	-0.01	-0.16	0.07	0.39	-0.12	-0.04								
13	Percent aged 16-29	0.05	0.03	0.01	0.02	0.08	0.35	0.58	0.05	-0.49	0.10	0.52	-0.13							
14	Industrial land use	0.06	0.09	0.01	0.02	0.12	-0.16	0.16	-0.07	-0.18	0.03	0.14	-0.08	0.10						
15	Office land use	0.06	0.06	0.03	0.04	0.10	0.03	0.03	0.04	-0.16	-0.01	-0.04	-0.15	0.03	0.04					
16	Residential land use	-0.14	-0.14	-0.07	-0.09	-0.22	0.20	-0.11	0.06	0.24	0.00	-0.05	0.20	-0.12	-0.41	-0.36				
17	Nearby Local small business	0.26	0.19	0.04	0.05	0.25	0.24	0.13	-0.01	-0.38	0.08	0.04	-0.20	0.11	0.09	0.11	-0.17			
18	Nearby Local non-small business	0.18	0.14	0.04	0.06	0.23	0.19	0.11	-0.03	-0.35	0	0.02	-0.21	0.11	0.05	0.14	-0.19	0.67		
19	Nearby Non-local small business	0.25	0.21	0.06	0.08	0.25	0.15	0.11	-0	-0.35	0.02	0.02	-0.19	0.11	0.11	0.15	-0.22	0.81	0.63	
20	Nearby Non-local non-small business	0.11	0.1	0.05	0.09	0.16	0.12	0.06	0.01	-0.23	0.03	0.01	-0.11	0.07	0.02	0.11	-0.14	0.40	0.39	0.59

Table 3. Negative binomial regression models by crime types

	Violent		Property	
Consumer-Facing Business				
Small local business	0.021	**	0.014	**
	5.031		6.080	
Small local business (squared)	0.000	*	0.000	*
	-2.246		-2.514	
Large local business	0.076	**	0.079	**
	7.700		13.114	
Large local business (squared)	-0.004	**	-0.003	**
	-5.441		-7.587	
Small non-local business	0.190	**	0.235	**
	6.701		13.759	
Small non-local business (squared)	-0.018	**	-0.016	**
	-3.738		-6.369	
Large non-local business	0.144	**	0.208	**
	15.678		34.028	
Large non-local business (squared)	-0.002	**	-0.003	**
	-5.397		-16.539	
Small local business heterogeneity	1.112	**	1.186	**
	8.816		13.218	
Small local business heterogeneity (squared)	-0.359	†	-0.867	**
	-1.762		-5.815	
Structural characteristics				
Population (logged)	0.476	**	0.185	**
	32.899		27.536	
Concentrated disadvantage	0.365	**	0.121	**
	16.963		11.930	
Racial/ethnic heterogeneity	0.278	**	0.266	**
	4.826		9.127	
Percent home owners	-0.008	**	-0.011	**
	-16.761		-43.503	
Percent Black	0.026	**	0.007	**
	43.721		19.874	
Percent Latino	0.015	**	0.001	**
	23.098		4.260	
Percent occupied units	-0.017	**	-0.006	**
	-10.290		-6.002	
Percent aged 16-29	-0.002	†	0.003	**
	-1.814		4.994	
Land use (%)				
Industrial	-0.010	**	-0.003	**
	-17.945		-9.564	
Office	-0.003	**	0.004	**
	-3.860		11.721	

Residential	-0.007	**	-0.001	**
	-28.814		-5.426	
Spatially lagged measures (1/4 mile)				
Small local business	0.000		-0.001	**
	1.371		-19.579	
Large local business	0.004	**	0.004	**
	8.566		12.390	
Small non-local business	0.000		0.001	**
	0.803		15.642	
Large non-local business	0.002	**	0.000	
	10.360		1.511	
Intercept	-9.170	**	-5.915	**
	-45.822		-56.978	
N	208713		208713	
pseudo R-sq	0.274		0.124	

*** p < .01(two-tail test), * p < .05 (two-tail test), † p < .05 (one-tail test)*
T-values below coefficient estimates.
City fixed effects are included but not reported
Spatially lagged business measures were divided by 100

Figures

Figure 1. Small Local Consumer Facing Businesses in the City of Los Angeles

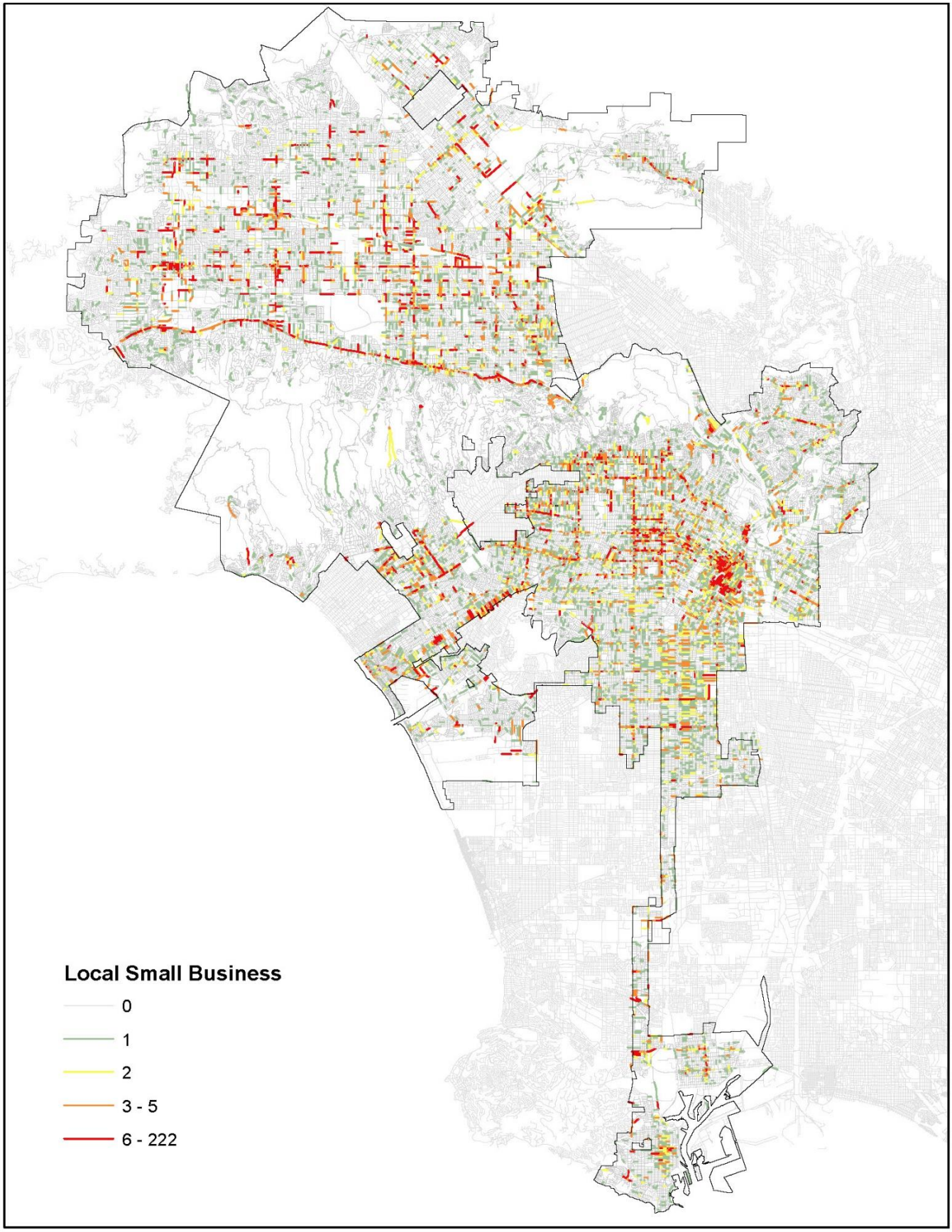


Figure 2. Consumer Facing Businesses and Violent Crime Risk

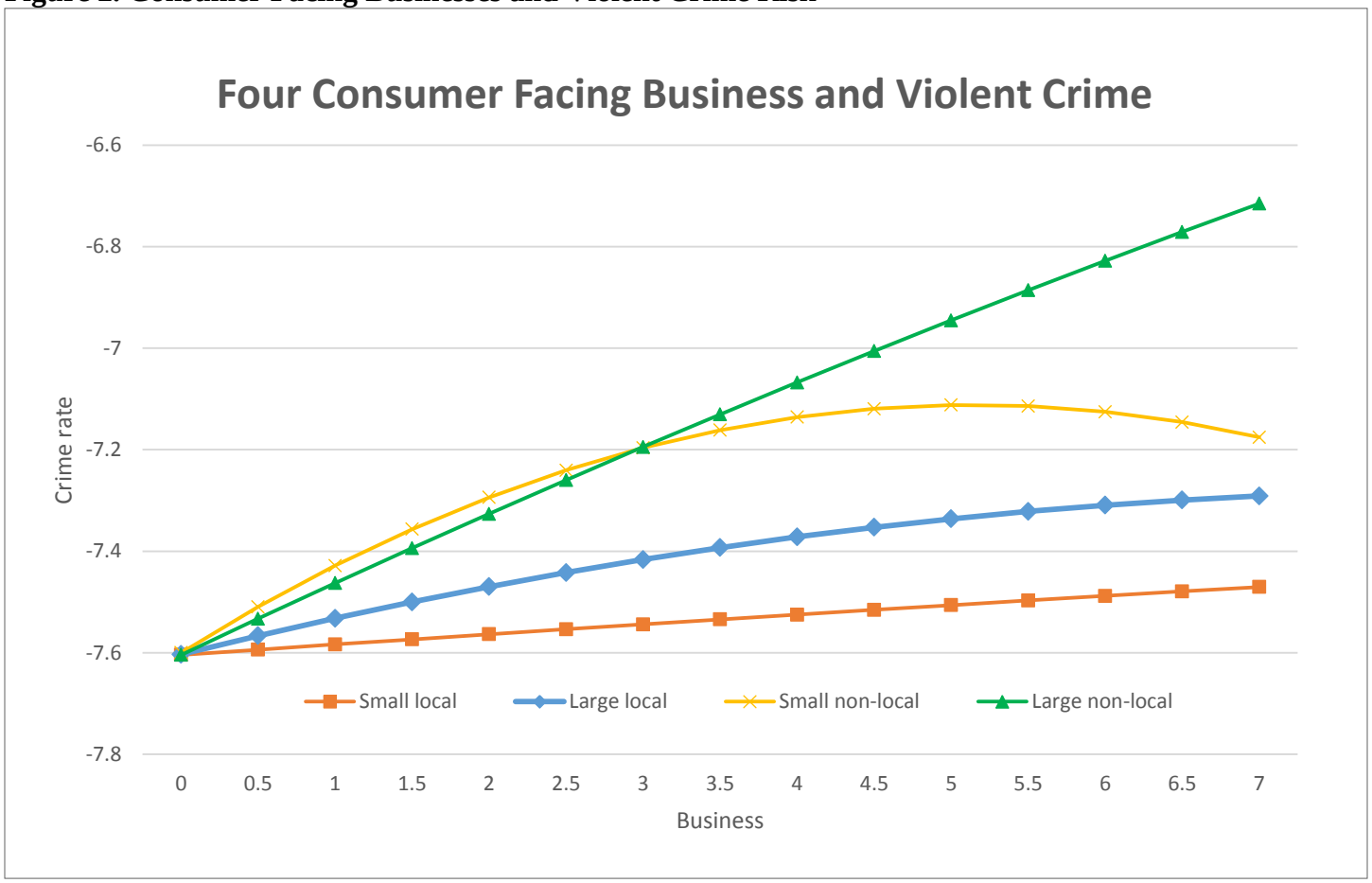
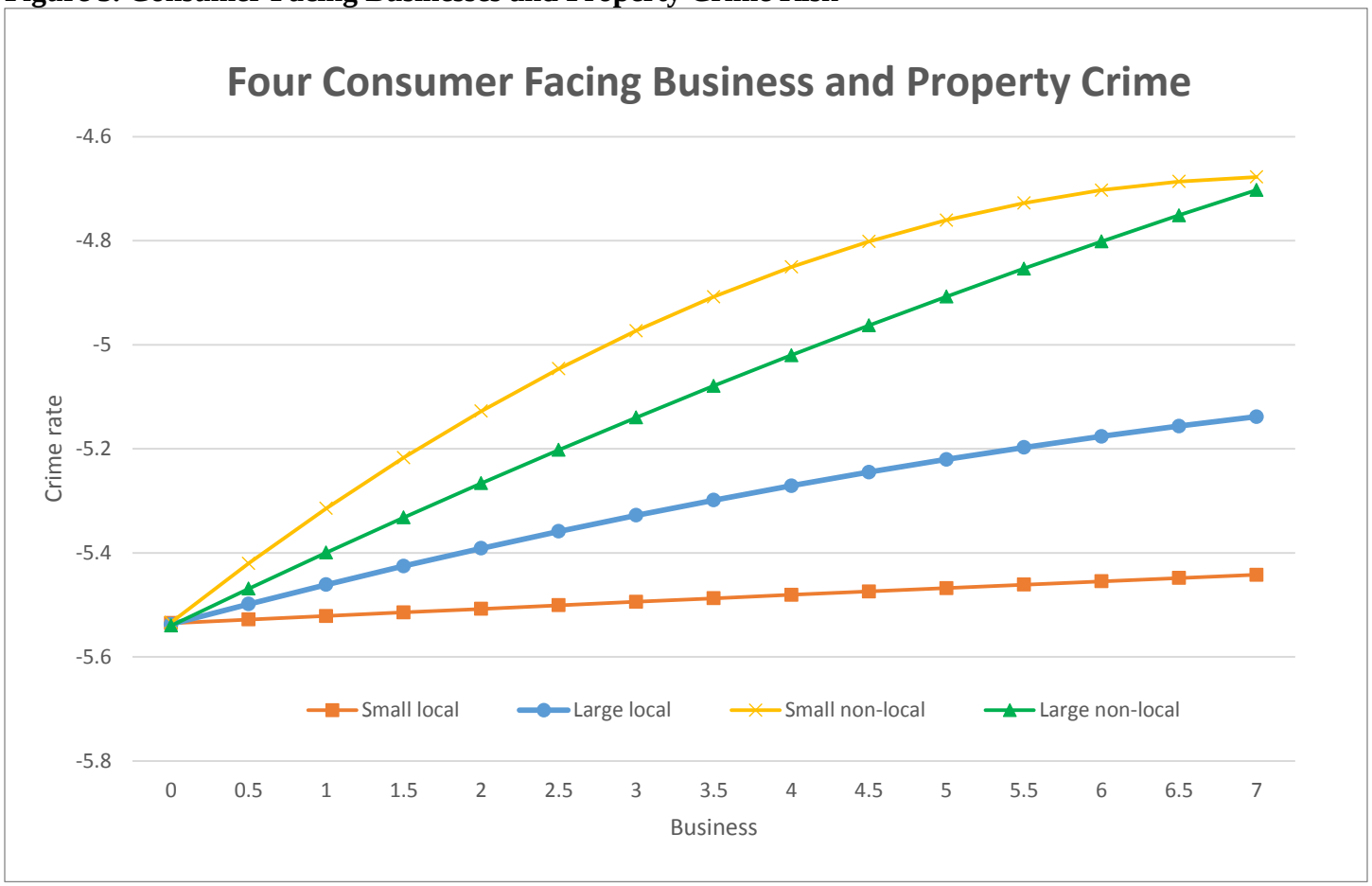


Figure 3. Consumer Facing Businesses and Property Crime Risk



Appendix

Table A1. Negative binomial regression models by crime types with proportion of local business

	Violent	Property

Consumer-Facing Business				
Small local business	0.014	**	0.006	**
	3.510		2.599	
Small local business (squared)	-0.000		-0.000	
	-1.272		-1.186	
Large local business	0.065	**	0.082	**
	6.010		12.235	
Large local business (squared)	-0.004	**	-0.003	**
	-4.713		-7.307	
Small non-local business	0.199	**	0.245	**
	7.071		14.356	
Small non-local business (squared)	-0.018	**	-0.016	**
	-3.765		-6.522	
Large non-local business	0.149	**	0.210	**
	16.212		33.876	
Large non-local business (squared)	-0.002	**	-0.003	**
	-5.389		-16.524	
Proportion of local business	2.053	**	1.400	**
	19.839		19.202	
Proportion of local business (squared)	-1.683	**	-1.128	**
	-15.859		-15.144	
Intercept	-9.291	**	-5.951	**
	-46.240		-57.334	
N	208713		208713	
pseudo R-sq	0.275		0.124	

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

T-values below coefficient estimates

City fixed effects and other controls are included but not reported in the tables

Table A2. Negative binomial regression models by various small business employee cutoffs

	Violent									Property		
	Emp. 40			Emp. 30			Emp. 20			Emp. 40		
Consumer-Facing Business												
Small local business	0.014	**		0.014	**		0.014	**		0.006	**	
	3.492			3.492			3.491			2.591		
Small local business (squared)	0.000			0.000			0.000			0.000		
	-1.262			-1.262			-1.261			-1.183		
Large local business	0.149	**		0.149	**		0.149	**		0.210	**	
	16.241			16.241			16.241			33.877		
Large local business (squared)	-0.002	**		-0.002	**		-0.002	**		-0.003	**	
	-5.401			-5.401			-5.401			-16.523		
Small non-local business	0.199	**		0.199	**		0.199	**		0.245	**	
	7.066			7.066			7.066			14.359		
Small non-local business (squared)	-0.018	**		-0.018	**		-0.018	**		-0.016	**	
	-3.761			-3.761			-3.761			-6.524		
Large non-local business	0.065	**		0.065	**		0.065	**		0.082	**	
	6.020			6.020			6.022			12.233		
Large non-local business (squared)	-0.004	**		-0.004	**		-0.004	**		-0.003	**	
	-4.719			-4.719			-4.719			-7.305		
Proportion of local business	2.052	**		2.052	**		2.052	**		1.400	**	
	19.829			19.829			19.828			19.204		
Proportion of local business (squared)	-1.682	**		-1.682	**		-1.681	**		-1.128	**	
	-15.846			-15.846			-15.845			-15.146		
N	208713			208713			208713			208713		
pseudo R-sq	0.275			0.275			0.275			0.124		

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

T-values below coefficient estimates.

City fixed effects and other controls are included but not reported in the tables.

Emp. 40 = Small business 40 employee cut off, Emp. 30 = Small business 30 employee cutoff, Emp. 20 = Small business 20 employee cutoff