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## Collecting private funds for safer public spaces: an empirical examination of the business improvement district concept

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**Abstract.** Business improvement districts (BIDs) are a popular economic development tool as evidenced by their proliferation from North America to Africa to Europe. In an effort to provide investors, visitors, and residents with more secure public spaces, the majority of BID organizations pay for supplemental security and sanitation services. Following a brief discussion of the theoretical underpinnings of the BID concept, this study describes BID security and sanitation programs and evaluates their impact on patterns of criminal activity in the City of Philadelphia using a customized geographic information system. Further, it introduces a point-based method of analysis that simultaneously considers the spatial and temporal characteristics of individual crime incidents. Results from this quantitative–qualitative study suggest that BID security services have a deterrent effect on such criminal activities as theft and burglary. Additionally, this paper makes the case that, as BID organizations continue to emerge, it is imperative that we develop more sophisticated models for evaluating their potential impacts. Controversies, like whether BIDs cause wealth-based inequalities in the delivery of public services, remain viable avenues for future research.

### Introduction

Although there is no standard definition, most scholars and practitioners describe business improvement districts (BIDs) as self-imposed financing mechanisms implemented by business and property owners for local improvements, specifically the enhancement of public services (Houstoun, 1997). In fact, managers use the slogan ‘clean and safe’ to describe the central management focus of most BIDs, and they implement a wide range of services to augment both the perception and the reality of cleanliness and safety. This approach is common, and businesses and property owners believe “that to be competitive, they need the same dedicated funding and management tools as a regional shopping center, an office campus, or a theme park.”<sup>(1)</sup>

By paying for such supplemental services as sanitation and security, urban BID participants expect to create clean and safe spaces that attract more shoppers and investors. Despite the lack of evidence, there is little debate that BIDs have a direct and positive influence on the environments in which they operate. BIDs are generally viewed favorably by the news media. Additionally, BID managers typically report positive findings about their BIDs in newsletters and on the Internet; however, consumer marketing is a fundamental element of BID management and such promotions are likely to be the result of managers simply ‘doing their job’.

Although there is a plethora of ‘how-to’ books, pamphlets, and websites for community leaders interested in BID formation, the literature is devoid of an independent, systematic, and objective examination of BID security programs and their potential impacts (Levy, 2001; Mitchell, 2001). This study explores the role of BIDs as supplemental service providers, examines the impact of security and sanitation services on patterns of criminal activity, and challenges the uncontested claim that BIDs work.

<sup>(1)</sup> Interview with Paul R Levy, Executive Director of the Center City District, 24 July 2000.

### Theoretical underpinnings

Commercial interests throughout North America began implementing BID organizations in the 1970s to improve the pedestrian experience in downtown areas. Their approach grew out of more than a century's worth of sociological theories related to the implications of the urban environment. Earlier work by Robert Park (1916) and Louis Wirth (1938) speaks to the consequences of urbanism, and provides a theoretical base for such urbanologists and criminologists as Jane Jacobs (1961), Oscar Newman (1972), and James Wilson and George Kelling (1982) who examine the relationship between public space and human behavior. The BID, as a concept, flowed from these ideas; these ideas informed BID managers in designing, promoting, and defending their programs.

Journalist Jane Jacobs in *The Death and Life of Great American Cities* (1961) and architect Oscar Newman in *Defensible Space* (1972) explored new and important perspectives about human behavior in the urban environment. Jacobs referred to the earlier ideas to differentiate among urban spaces. She contended that when the citizenry who were the "natural proprietors of the street", were attracted into the public space they increased the "number of effective eyes on the street" (1961, page 35). In turn, they enforced societal norms and regulated human behavior in public spaces. Similarly, Newman suggested that the physical design of the environment could increase social control and deter deviant behavior. Together Jacobs and Newman promoted two similar and widely accepted beliefs: the supervision of public spheres deters criminal activity, and the physical design of public spaces affects criminal activity. Criminal justice professors James Q Wilson and George R Kelling wrote a seminal article in 1982, subtitled, "Broken windows". In short, 'broken windows' theory suggests that, as physical and social incivilities increase, informal social control weakens and fear increases. As fear increases, the chances of criminal invasion increase, as does disorder that leads to an increase in serious crimes (Wilson and Kelling, 1982). In the end, all of these theories hold that street order is a public good maintained through a set of standard procedures ranging from design to sanitation to the deployment of uniformed personnel.

### Study context

Philadelphia, located within the Commonwealth of Pennsylvania, is the fifth largest city in the USA. Despite its place in the heart of America's most densely populated corridor, it continues to experience steady population decline. According to the US Bureau of the Census, Philadelphia's population exceeded one million in 1900. The population continued to grow, and by 1950 it grew beyond two million. Although many planners projected a future in which the number of residents continued to increase, their forecasts never reached fruition. As shown in table 1, the number of inhabitants inside the city limits began to decrease between 1950 and 1960. Simultaneously, the number of residents outside the city limits continued to grow. Contemporary urban research explains the exodus of firms and households to suburban areas as the cumulative result of a variety of federal and other policy interventions (Downs, 1997; Jackson, 1985). By the 1950s suburban shopping malls appeared and contributed to the exodus of both central-city businesses and the white middle class to the urban periphery. The demographic and

**Table 1.** Population trends for the City of Philadelphia, 1940–2000 (source: US Bureau of the Census).

Philadelphia	1940	1950	1960	1970	1980	1990	2000
Inside	1 931 334	2 071 605	2 002 512	1 948 609	1 688 210	1 585 577	1 517 550
Outside	1 268 303	1 599 443	2 340 385	2 869 305	3 028 608	3 597 210	3 869 857

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economic shifts were vivid and downtown business groups responded with redevelopment efforts such as the well-known Pittsburgh renaissance (Mohl, 1993).

This trend brings with it ramifications for Philadelphia, such as a net decrease in demand for land and an increase in residential and commercial vacancy rates that have a profound impact on local businesses. For example, the city's retail businesses struggled to survive as evidenced by an increase in retail sales of only 1.2% from 1974 to 1980, while the surrounding counties experienced enormous economic growth with retail sales increasing 90% for the same period (Office of the City Controller, 1999). Today, many US mayors aim to combat decline by making strategic investments to transform their municipalities into destination cities. The recipe includes the construction of convention centers, entertainment complexes, and lodging facilities. Moreover, these mayors often support the creation of BIDs to restore the competitive advantage of the urban core (Porter, 1995).

As in many cities, the perception and reality of crime are significant barriers to Philadelphia's economic revitalization. In a recent survey of Philadelphia business establishments, crime ranked just behind taxes as the most troubling aspect of doing business in the city (Office of the City Controller, 1999). Older urban commercial areas within fiscally constrained municipalities find it difficult to compete with their suburban counterparts. To become more competitive some business and property owners unite, forming public-private organizations with a centralized management structure. BIDs (also known as special services districts) are a popular economic development concept in Philadelphia, where nine have been formed in less than nine years and several are currently under consideration.

### **Philadelphia's BIDs**




As shown in figure 1 (over), this study examines nine BIDs within the City of Philadelphia. From west to east, Mercy Health-West Philadelphia, University City, Center City, and Old City are BIDs that cover all parts of Market Street, the major east-west thoroughfare in Philadelphia. Apart from the South Street Headhouse District, just south of Market Street, there are no BIDs in the southern or southwestern portions of the city. The upper northeastern portion of the city is also without a BID organization. Moreover, the Frankford and Germantown BIDs stand alone—one in the lower northeast and the other in the northwest; the Manayunk and City Avenue Districts sit along the periphery; together they begin to consume the western portion of the city's edge.

As shown in table 2 (over), Philadelphia's BIDs vary considerably with respect to age, budget, and size. For example, the Center City District, the city's first BID, began operations in 1991, while the Mercy Health-West Philadelphia organization launched its program in 1999. Further, with respect to size, Philadelphia's BIDs range from as few as thirteen to as many 252 blocks. Finally, annual budgets ranged from \$89 000 to \$8700 000 dollars in 1999.

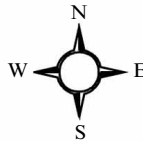
### **Rationale**

BIDs located in large cities often provide a variety of services specifically aimed at decreasing crime (Mitchell, 1999), and Philadelphia's are no exception. Although there are several performance measures that would allow for a study of BID impacts (occupancy rates, customer surveys, retail sales, pedestrian counts, etc), this study examines criminal activity because each of the city's nine BIDs cites crime deterrence as an important organizational goal.



- 1 Center City
  - 2 South Street Headhouse
  - 3 Germantown
  - 4 Frankford
  - 5 Manayunk
  - 6 University City
  - 7 Old City
  - 8 City Avenue
  - 9 Mercy Health–West Philadelphia
-  Streets  
 Parks  
 Water

1 0 1 miles



City of Philadelphia



**Figure 1.** Philadelphia's business improvement districts.

**Table 2.** Philadelphia's business improvement districts (source: Hoyt, 2001).

District	Start of operations	Budget 1999 (\$ thousand)	Size (blocks)
Center City	March 1991	8 700	100
South Street Headhouse	May 1993	380	13
Germantown	September 1996	110	32
Frankford	February 1997	226	19
Manayunk	June 1997	89	24
University City	August 1997	3 800	252
Old City	July 1998	447	26
City Avenue	March 1999	825	76
Mercy Health–West Philadelphia	March 1999	511	172
Total		15 088	714

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**Private security and sanitation services**

Some of Philadelphia's BID managers base their operations on the aforementioned clean-and-safe theories by providing private security and sanitation services. The former enhances formal surveillance activities, while the latter not only involves removing signs of neglect, but also enhances informal surveillance. For example, BIDs seek to improve the formal surveillance of public spaces by deploying security patrols and coordinating efforts with local police. Typically, BIDs that deploy uniformed security personnel train them to observe and report suspected criminal activities. BIDs assign their security personnel to designated areas or 'beats', and provide them with radio or telephone equipment that allows them to communicate with the police. In this way, unarmed BID security patrols—whether on foot or bicycle—supplement local law-enforcement efforts. Proponents claim this coproduction of security reduces police response time, and effectively deters crime (Houstoun, 1997). Furthermore, some BIDs implement geographic information systems (GIS) to track crime, locate police substations in BID-member office buildings, conduct joint roll calls with BID security and police personnel, and send BID members to regular police-run meetings. It is a widely held belief that these additional crime-prevention activities often outweigh the efforts made by other commercial districts, giving BID business and property owners a competitive advantage.

To address physical evidence of social disorder, BID managers support massive repair, antigraffiti, and sidewalk and street cleaning efforts. For example, BID sidewalk sweepers remove soda bottles and candy wrappers from sidewalks, thus removing the signs of neglect that invite crime. They also coordinate graffiti removal and remove other signs of neglect by towing of abandoned cars, and sealing vacant houses. Put simply, a variety of BID services convey the message that someone cares about the area. Furthermore, it is possible that uniformed BID sanitation personnel participate indirectly in crime deterrence (Houston, 1994). By contributing to the collective supervision of public spaces, their presence pressures offenders to evaluate potential victims more carefully to decrease the risk of criminal victimization (Cohen and Felson, 1979). Additionally, some BIDs train and instruct sanitation personnel to report unlawful behaviors to BID security or local police. Although their primary function is to remove litter from the streets, they also function as public space guardians.

**Framework and research questions**

In essence, this study confronts two distinct research questions. First, do BID organizations, through the services they provide, have an impact on criminal activity? In other words, do BIDs decrease crime? To address this question, I will conduct a simple comparison of crimes that take place in commercial areas with BID organizations (BID areas) to crimes that occur in commercial areas without BID organizations (non-BID areas). After a brief review of the trends, I will pose additional questions. For example, if BIDs decrease crime, which BID services impact criminal activities?

**Tabular and geographical data files**

Over the past decade GIS have evolved from complex and expensive systems used by sophisticated programmers to user-friendly and inexpensive desktop applications used by analysts and researchers in a wide variety of disciplines. These systems allow users a better understanding, through visualization and analysis, of spatial relationships. The following paragraphs describe the tabular and geographical data files used for this study. Although the Philadelphia City Planning Commission (PCPC) and the Philadelphia Police Department (PPD) created and permitted the use of several files, I digitized others from hardcopy maps using a desktop mapping application.

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**Crime incidents**

In 1930 the US Congress authorized the Federal Bureau of Investigation (FBI) to collect uniform crime statistics through the Uniform Crime Reporting System (UCR). The purpose of the annual UCR reports issued by the FBI is to identify the fluctuations in the level of crime in the United States. Major crimes, also known as 'serious', or 'part one' crimes, are the crimes considered most serious by nearly all countries in the world.

There are two types of serious crimes: violent and property. Violent crimes, such as homicide, rape, robbery, and aggravated assault, are of a personal nature because the perpetrator directly confronts the victim; law-enforcement officials consider such attacks 'crimes of passion'. In contrast, property crimes, considered 'opportunity crimes', do not involve personal contact. Instead, burglaries and thefts are crimes committed without the victim's immediate knowledge, and have more to do with material gain than with confrontation. BIDs, areas where bicycles, vehicles, and retail establishments congregate, are overflowing with opportunities for criminals motivated by material gain; therefore, it is reasonable to test whether increased surveillance has a deterrent effect on property-related crimes.

The databases provided by the PPD span four years from 1 January 1998 through 31 December, 2001, and contain a record for every crime reported within the City of Philadelphia. The crime data come from the crime-incident database that the PDD forwards to the FBI biannually.

**Streets**

The street centerline file represents all the drivable streets in the city as well as the addressed walkways. It is the street centerline base map for all applications in the city requiring a street centerline, and analysts use it extensively for geocoding, creating cross-reference tables to identify geopolitical boundaries, and vehicle routing. City employees update the file monthly. The PPD relies on this file to geocode crime data on a daily basis. The addition of geographical coordinates to the crime-incident database makes it possible to map crime events and conduct spatial analyses of crime.

**Commercial areas**

This study compares crime in BID areas with crime in large non-BID commercial areas. To create a geographic file representing non-BID areas, I relied on the street centerline and zoning files and a study conducted in 1996 by the PCPC, entitled, *Philadelphia Shops Update*. The *Philadelphia Shops Update* documents the basic characteristics and conditions of significant shopping and service concentrations in the City of Philadelphia. For the purpose of this study, a large commercial area is defined by the presence of more than 100 contiguous commercial businesses. To digitize a file to represent BID areas, I requested hardcopy maps with boundary delineation discernable at the parcel level from the BID managers.

These files are not only useful for depicting the location, physical size, and shape of each commercial area, but also facilitate comparisons between the commercial areas with BID organizations and those without. For example, using these files, an analyst can determine whether a crime incident occurred within a commercial area. To code data, I imported crime-incident data into the customized GIS, then conducted a spatial selection whereby individual crime incidents were associated with BID or non-BID areas.

**Parcels, zoning, and census**

The parcel file, created under the supervision of the PCPC, represents property lines throughout the city. Commercial areas with BID organizations delineate their service

boundaries at the property level; therefore, the parcel file allowed me to create the commercial area file (BID and non-BID) with a reasonable degree of accuracy. The zoning file, also created under the supervision of PCPC, represents the city zoning districts and classifications. The zoning information corresponds with the parcel file and allows the analyst to group parcels into three basic zoning categories: commercial, residential, and industrial. I used this file to create an important contextual variable: zoned residential use. Finally, the PCPC's census block group file is critical because it delineates block-group boundaries, allowing the GIS to spatially enable tabular census data. With it I created additional contextual variables that measure socioeconomic neighborhood characteristics corresponding to individual crime events. Such contextual variables as median household income are a valuable part of the regression equation because they allow the analyst to test the relationship between BID services and crime while holding neighborhood conditions and other factors constant.

### Do BIDs decrease crime?

To gain some insight into whether BID services impact crime, let us compare four years of crime incidents within BID areas with crimes committed in non-BID areas. As shown in figure 2, the percentage of property crimes reported in BID areas decreased at a rate of 5% from 1998 through 2001. Similarly, non-BID areas also witnessed a decrease in property crimes; however, the rate was only 2.3%.

Therefore, property crimes in BID areas decreased at a rate more than twice that of their non-BID counterparts. With some evidence that BID organizations have a deterrent effect on criminal activity, let us conduct a more rigorous examination. As BIDs focus on 'clean and safe', it is logical to proceed with an analysis of the relationship between the services that BID organizations provide and crime. This approach raises the following questions. Which BID services impact criminal activities? Do BID sanitation services decrease crime? Do BID security services decrease crime?

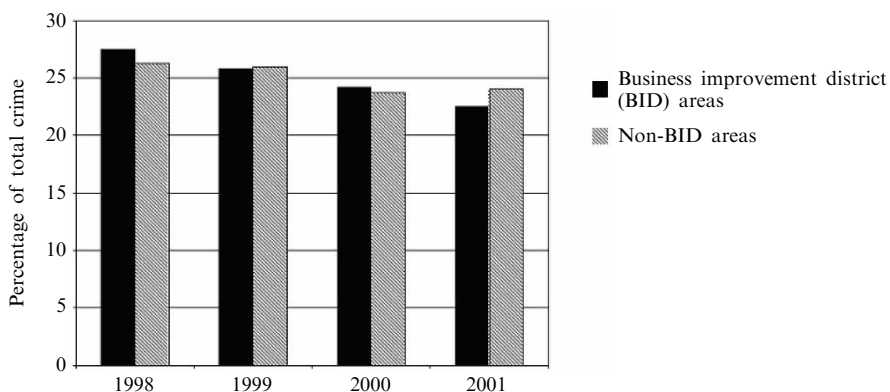


Figure 2. Trends in property crime, 1998–2001.

### Which BID services impact criminal activities?

For the purpose of this study, the dependent variables are crime clusters, or hot spots. A hot spot is an appropriate unit of analysis for this study for two reasons. First, crime does not occur evenly. Second, the community-policing approach—the dominant crime-deterrence paradigm in the City of Philadelphia—is largely preoccupied with the elimination of hot spots; law-enforcement experts throughout the country believe that identifying and responding to hot spots lower the level and the fear of crime.

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The unit of observation, for this study, is the individual crime occurrence. Although most studies that analyze the spatial distribution of crime use census-tract or block-group-level data, this study relies on a customized GIS to aggregate data at a finer level. A new spatiotemporal method of analysis allows the analyst to assign a cluster value to individual crime occurrences, thus identifying the location of hot spots.

### **Hot spots**

Research on the distribution of crime in urban contexts reveals that crime concentrates in hot spots that generate more than half of all crime events (Sherman et al, 1989). Although the definition of hot spot varies, generally they are described as a “crime pattern occurring in a relatively small area” (Canter, 2000), “small areas that facilitate victimization” (Skogan, 1999, pages 16–17), “some form of clustering in a spatial distribution” (Harries, 1999), “crime repeated in the same place” (Eck et al, 2000), and “areas where crimes cluster in space and time” (McLafferty et al, 2000).

Further, there is no one technique to identify hot spots, and no single technique works for all purposes (Harries, 1999). However, three components are common. They are: crime frequency, geography, and time (Canter, 2000). With respect to crime frequency, theorists agree that hot spots represent clusters of crime and that, therefore, “at least two criminal incidents of the same crime type” must be present (Canter, 2000). For geographical and temporal extents, there is little agreement. Hot-spot areas range from single locations to more than a square mile (Langworthy and Jefferis, 2000), and one-week to one-year periods (Canter, 2000; Sherman et al, 1989).

As for data aggregation, there are different units of measurement to identify hot spots from which analysts can choose. Area-based methods aggregate crime data into geographical areas, such as blocks, precincts, and census tracts. Typically, the analyst calculates a crime rate for the area by tallying the total number of crimes in relation to land area or population (McLafferty et al, 2000). However, area-based aggregation of crime events results in aggregation bias. For example, crime rates can be misleading when arbitrary area boundaries divide clusters (Brantingham and Brantingham, 1984). To mitigate the bias, grid analysis allows for the aggregation of crime events through a fine and regular grid. ‘Binning’ is a traditional approach where the analyst places the grid across the study area to count the number of events in each cell. More sophisticated techniques pass a circular window with a constant radius across the study area, centered at each grid point, to compute density values for each event (McLafferty et al, 2000). The limitation of grid analysis is that it is oblivious to the values in adjoining cells and it presupposes environmental homogeneity (Chakravorty and Pelfrey, 2000).

Although there are many techniques for identifying hot spots, point-based methods represent the finest level of aggregation. Using GIS technologies, the study relies on a new method of point-pattern analysis that measures the growth of hot spots by simultaneously considering both the spatial and the temporal characteristics of individual crime incidents. A brief introduction to the community-policing approach followed by a description of the commonly used prevention strategies in Philadelphia serves as a justification for the development and use of this new method.

### **Community policing in Philadelphia**

Grounded in ‘broken windows’ theory, a new and more proactive approach toward crime, commonly referred to as ‘community policing’, emerged in the past two decades. In broad terms, researchers label it as a “philosophical position” (McElroy, 1993), an “organizational strategy” (Trojanowicz and Bucqueroux, 1990), a “new style of policing” (Goldstein, 1990), a “new approach” (Greene and Taylor, 1988), and a “new movement”

(Riechers and Roberg, 2000). Under the leadership of Philadelphia Police Commissioner Tucker, the PPD announced a policy of community policing in January 1986 (Philadelphia Police Study Task Force, 1987). The writers of the policy describe the goals of community policing as maintenance of order, crime prevention, and community collaboration.

Having witnessed significant crime reduction in New York City from 1994 to 1997, Philadelphia Police Commissioner John Timoney instituted a managerial command and control system called Compstat in 1998 (Harries, 1999; McGuire, 2000). The system follows the most popular strategic planning model for the community policing philosophy, SARA, which stands for scanning–analysis–response–assessment. Under this model, Philadelphia’s policing strategies emphasize the elimination of hot spots. The PPD trains police at all ranks to ‘scan’ or identify problems, ‘analyze’ or collect and consider information about the problem, ‘respond’ or work with others to develop and implement solutions, and ‘assess’ or evaluate how well the strategies worked (Skogan, 1999). Compstat meetings<sup>(2)</sup> provide a forum where the highest ranking commanders meet weekly with subordinates. Using a sophisticated GIS to project crime statistics and maps onto a large screen, together they identify hot spots and devise deployment strategies to eliminate them.

Furthermore, when partnering with police, BIDs often incorporate community policing into their management approach (Briffault, 1999; Kelling et al, 1996). For example, in an effort to work hand-in-hand with community members and local groups to resolve problems, the PPD created a special deployment detail on South Street that later evolved into a BID-supported police ministration (Kelling and Moore, 2000; Weisel and Eck, 1994). Also, the PPD established ministrations and stationed officers in the Center City and University City Districts. Here, officers depend on computerized crime mapping to identify crime clusters and coordinate deployment strategies with BID security personnel.

## Methodology

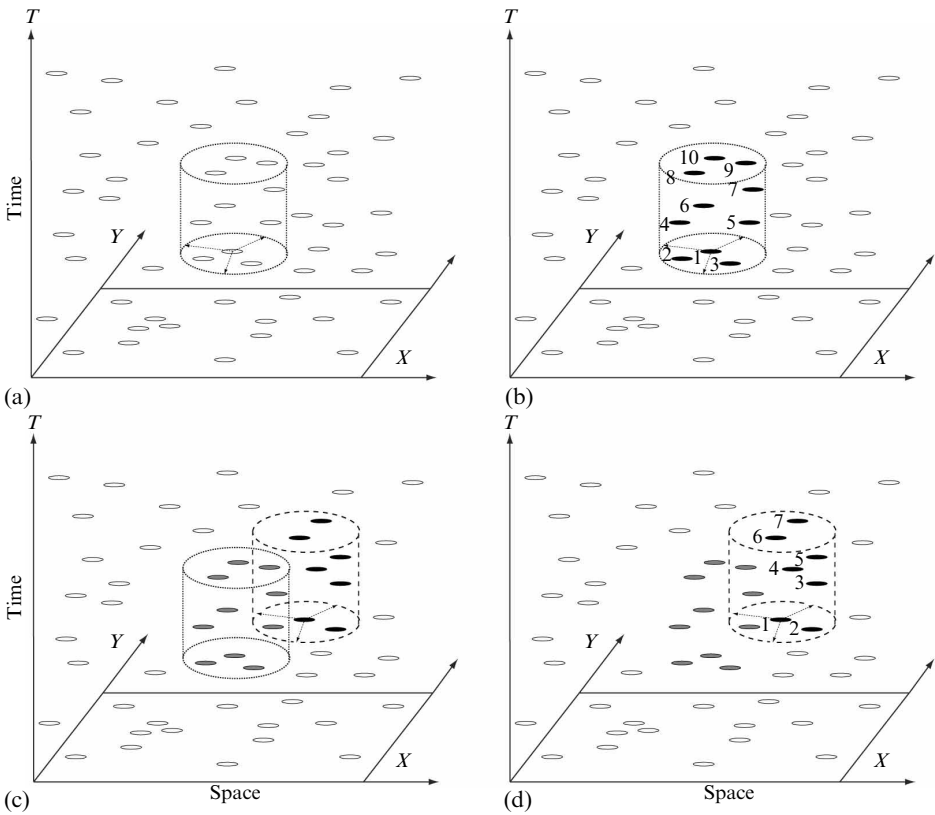
Because police and private security patrols that work to deter criminal activity within BID boundaries specifically aim to eliminate chronic crime clusters, this study introduces a method of analysis that simultaneously considers the spatial and temporal characteristics of individual crime incidents in order to capture information about how a pattern grows or changes. It builds on the epidemiological studies that produced the first tests for space–time interaction studies (Knox, 1964; Mantel, 1967), and provides functionality not available in contemporary commercial software packages (Williamson et al, 2000).

The instrument used for this study exists as a string of code written in Avenue, ArcView’s programming language. To begin, I input 21 276 records of property crime occurring within the City of Philadelphia, which is designated as  $R = \{r_i\}_{i=1}^{21,276}$  where each  $r_i$  has the following format.

$$r_i = \{\text{date of crime } t^i, \text{ location of crime } (x_1^i, x_2^i), \\ \text{type of crime (property or violent)}\}.$$

I examine all the records that fall within the perimeter of a BID or within 1000 ft of the perimeter (to account for edge effects), and call this set  $R_{\text{BID}}$ . From the set  $R_{\text{BID}}$ , we order the records according to the date of the crime, then cluster the records according to spatiotemporal criteria. As shown in figure 3 (over), for each record (for example, individual crime occurrence) we assemble a cluster,  $c_i$ , which is a count of the number

<sup>(2)</sup> Compstat (computer statistics) is a term coined by the New York Police Department to describe a new approach to crime reduction.



**Figure 3.** Spatiotemporal method.

of records within a  $\Delta x$  foot radius of the record  $r_i$  and which occur within  $\Delta t$  days of the date of the record and do not fall into a previous cluster.

$$c_i = \left\{ \begin{array}{l} \text{number of records } r_j \text{ in the ordered set } R_{\text{BID}} \text{ such that} \\ d_{ij} \leq \Delta x, \text{ and } t_{ij} \leq \Delta t, \text{ and } r_j \notin c_1, \dots, c_{i-1} \end{array} \right\},$$

where  $d_{ij}$  is the Euclidean distance between the location of records  $r_i$  and  $r_j$ ,

$$d_{ij} = [(x_1^i - x_1^j)^2 + (x_2^i - x_2^j)^2]^{1/2},$$

$t_{ij}$  is the time difference between the records,  $|t^j - t^i|$ , and  $r_j \notin c_1, \dots, c_{i-1}$  states that the record  $r_j$  was not included in a previous cluster  $c_{i-1}$ .

Last, we construct a set from the logarithm of all clusters that are nonzero,  $C = \{\ln(c_i)\}_{i=1}^p$ , where  $p$  is the number of clusters with nonzero values. In this paper, we use  $\Delta t = 30$  days and  $\Delta r = 500$  ft.

This set of property crimes is used as the dependent variable in a linear regression model

$$C = k + Bx,$$

where  $x$  is an independent or contextual variable, and  $C$  is the dependent variable. The variables  $k$  and  $B$  are estimated by minimizing least squares error. A brief description of the five variables used is provided below.

(1) Median household income, or MED\_HH\_INC, is measured at a block-group level for 1997 where the crime incident occurred. This is a contextual variable which allows the analyst to test the relationship between BID services and crime while holding neighborhood conditions and other factors constant.

(2) Zoning designation, or ZONED\_RES, is measured at the property level where the crime incident occurred and is 0 if nonresidential and 1 if residential. This is a contextual variable.

(3) Number of businesses, or NO\_OF\_BUSI, is measured at the block level for 1997 where the crime incident occurred and serves as a proxy for daytime population. This is a contextual variable.

(4) Number of security personnel, or SECURITY, is measured by the number of full-time BID security staff in 1999. This is an independent variable.

(5) Number of sanitation personnel, or SANITATION, is measured by the number of full-time BID sanitation staff in 1999. This is an independent variable.

## Results

Table 4 reports the correlation coefficient  $B$ , the standardized correlation coefficient  $\beta$ , its corresponding  $t$ -statistic, and significance  $p$  for each independent and contextual variable for property crimes. The model has considerable explanatory power and, on the surface, provides ample evidence to satisfy the research questions. First, the association between crime clusters and the presence of security services is negative and significant, suggesting that the presence of BID security may deter criminal activity. In contrast, the relationship between crime and sanitation services is positive and significant, implying that, as the number of full-time private sanitation personnel increases, crime also increases. One interpretation of these results is that BID security, dressed in bright and colorful uniforms, stand out among the blue and black business suits and send a clear message to potential offenders: there is a capable public space guardian present. Further, one could speculate that sanitation personnel are not perceived by criminals as public space wardens, and that they are typically deployed in the most ill-kept areas where there happens to be a lot of crime. Unlike the previous interpretation, it is likely that this is a correlative rather than a causative effect. Further, controlling for unmeasured factors, we could find that the correlation between crime clusters and BID sanitation services may no longer be significant.

It is equally realistic to conclude that the correlation between crime clusters and BID security services is spurious because of the presence of other factors. To test this challenge, we could introduce variables that are likely to have an impact on criminal activity, such as the coordination of security patrols with police patrols, the number of police assigned to the area, the presence of police ministrations, the use of GIS to make

**Table 4.** Property crime results.

Variable	$B$	$\beta$	$t$	$p$
Independent variable				
SECURITY	$-1.82 \times 10^{-2}$	-0.353	-15.67	0.000
SANITATION	$2.54 \times 10^{-2}$	0.696	32.76	0.000
Contextual variable				
ZONED_RES	$-2.20 \times 10^{-2}$	-0.011	-0.711	0.477
NO_OF_BUSI	$4.44 \times 10^{-5}$	0.041	2.82	0.005
MED_HH_INC	$4.10 \times 10^{-6}$	0.079	4.94	0.000

$R^2 = 0.297$ ,  $F(5, 3480) = 295.41$ ,  $p = 0.000$ .

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deployment decisions, the implementation of surveillance equipment such as closed circuit televisions, as well as loss-prevention training to retail managers and staff and outreach services to people living on the street.

### **Recommendations**

The BID is a new agent working to revitalize urban public spaces and setting higher standards for commercial areas around the globe. Thus, it is important to recognize that BID participants do more than announce the slogan 'clean and safe', they live it. For example, on average, Philadelphia's BIDs allocate two thirds of their annual operating budget to the provision of security and sanitation services. In fact, Philadelphia's BIDs spent more than \$8000 per city block to supplement public sanitation and security services in 1999. Surely, such efforts are not in vain.

BID organizations continue to emerge; therefore, it is imperative that we not only develop more sophisticated models for evaluating the impact of BID services, but also call into question their contribution to public life. Such models would build on the one described here by accounting for the omitted variables as well as a host of exogenous factors (for example, changes in unemployment and economic trends) when attempting to attribute desired outcomes (a reduction in crime) to interventions (employment of security and sanitation personnel). In addition, BID managers and membership organizations should consider the implementation of customized methods of analysis, like the spatiotemporal method for analyzing crime patterns described here, for monitoring organizational performance as well as day-to-day management decisions.

Second, the controversies associated with BID organizations are worthy of investigation. BIDs pay for supplemental sanitation and security services within clearly delineated geographical boundaries, and this raises the concern that BIDs cause wealth-based inequalities in the delivery of public services (Briffault, 1999). Based on a review of the literature, it is likely that BIDs form in wealthier communities, and that participants receive better services because they are not only willing to pay—but are able to pay. BID advocates refute this position, claiming that baseline service agreements with local government notwithstanding, once business and property owners pay for supplemental services, local governments decrease service to BID areas. Furthermore, they contend that, if BIDs allow the provision of public services to BID areas to decrease over time, municipalities can reallocate the unused services to poorer communities. In contrast, BID critics claim that BIDs participants are too organized and ambitious to allow the municipal service level to decline. With the wherewithal to provide advocacy services, critics claim that BIDs receive more municipal services than other commercial areas.

Often formed in response to an inadequate level of security and sanitation services, BIDs highlight the inability of municipal governments to meet local demand. In cities like New York, Los Angeles, Toronto, Vancouver, Cape Town, and Johannesburg, where most, if not all, of the large commercial areas form BID organizations, what will become of the smaller areas in low-income and moderate-income neighborhoods where merchants are simply unable to pay for additional services? Will the businesses with adequate means relocate to cleaner, safer, and more attractive environs? How will the flight of certain businesses impact those left behind? If businesses relocate, will residents follow?

Finally, public officials, practitioners, and scholars should question the operation of multiple BIDs in a single municipality. In cities where BIDs proliferate, interstitial areas—gaps between BID areas—materialize. For example, in about fifteen minutes, a tourist shopping in Philadelphia and headed north on Second Street would pass through the South Street Headhouse District, enter a commercial area that is not

managed by a BID, and stroll into the Old City District. These interstitial areas, like the one the tourist passed through, emerge because municipal governments seldom coordinate the authorization of BIDs. Are such areas problematic? For example, do criminal activities spill into these adjacent areas? If so, should local government provide additional services to interstitial areas in an effort to level the playing field? Should local governments require BID organizations to coordinate jurisdictional boundaries? Should BID organizations be held accountable when they detrimentally impact adjacent neighborhoods?

### Conclusions

The above questions are beyond the scope of this paper, and remain viable avenues for future BID research. In closing, BIDs are not janitorial or security companies. They are organizations designed to make commercial areas more competitive, and most BID managers begin by addressing cleanliness and safety because they are the chief obstacles to being competitive.<sup>(3)</sup>

When business and property owners support BIDs, their willingness to pay does not demonstrate an enduring civil commitment. Put simply, it represents a long-term investment in their businesses and properties. Motivations aside, they have resources—financial and human—that they use to improve the urban pedestrian experience. Hence, public officials, planning practitioners, and urban scholars should carefully consider the BID an important variable in any equation formulated to revitalize commercial areas.

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<sup>(3)</sup> Interview with Paul R Levy, 24 July 2000.

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