



# SPATIAL IS SPECIAL: A SOCIO-GEOGRAPHIC PROFILE OF OFFENDERS IN THE CITY OF TSWANE, SOUTH AFRICA

GREGORY D. BREETZKE

## ABSTRACT

The aim of this paper is to improve knowledge on the spatial origin and development of criminal offenders within the Tshwane municipality. A preliminary socio-demographic profile of offenders residing within Tshwane is compiled based on a written survey of a sample of 75 offenders. The importance of residential location in defining the socio-demographic profile of offenders is investigated through the use of location quotients (LQs). The study revealed that the sample of offenders tended to reside in suburbs that exhibited offender rates between 11-28% higher than the municipality as a whole. In the context of exposure to criminal elements, economic offenders were found to be more prone to the deleterious effects of suburbs than violent or sexual offenders. The study motivates that location is an important risk factor for criminal offending in South Africa.

## Introduction

Offender profiling is a universal criminological technique that has been utilised by law enforcement agents for well over a century. The technique revolves primarily around the need of investigators to identify an offender based on a set of circumstances surrounding the nature of an offence as well as the manner in which the offence was committed. Advocated more as an art rather than a science (Turvey, 1999), offender profiling has its contemporary roots in the infamous Jack the Ripper investigation where police surgeon, Dr Thomas Bond, outlined a profile of the offender based on the Ripper's behaviour at the crime scene. The opening of a profiling unit at the Federal Bureau of Investigations (FBI) academy in Virginia in the 1970s led to the formalisation of the 'science' which has subsequently become sensationalised, notably through the entertainment industry. In reality, offender profiling involves intense investigative procedures to identify personality and psychological traits, behavioural tendencies and demographic characteristics of offenders. Offender profiling is not new in South Africa. Labuschagne (2003) reports on the use of the technique since the creation of the Investigative Psychological Unit (IPU) of the South African Police Services (SAPS) in 1995. Individual profiles have also been compiled to profile the perpetrators of farm attacks in the country (Mistry and Dhlamini, 2001); young sex offenders (Wood, 2000), male sex offenders (Delpont and Vermeulen, 2004), offenders of firearm-related crimes (Hennop et al., 2001) as well as 'cop-killers' (Minnaar, 2000). In these instances, profilers rely considerably on the demographic characteristics of past or known offenders. For example, Mistry and Dhlamini (2001) based their offender profile on the demographic characteristics of a sample of 48 offenders of farm attacks in the country. The researchers profiled perpetrators as young, single, unemployed black South African males between the ages of 15 and 35 from an unstable family background. Similarly, Minnaar (2000) concluded that 'cop-killers' were most likely to be single, black males in their mid-20s with a low level of education, and having had a deprived childhood in a dysfunctional home.

The offender profiles outlined above, while useful in providing a socio-demographic description of offenders, neglects the deleterious impact that location or space has on influencing criminal behaviour. The idea that space can influence

or 'pre-empt' human behaviour draws from the related fields of environmental or spatial determinism as well as elements of behavioural geography. Spatial determinism dictates that spatial patterns cause social behaviour and that humans are strictly defined by stimulus-response or environment-behavior interactions from which they cannot deviate (Duncan, 1989). Behavioural geographers also recognise that humans and their environment are dynamically linked (Walmsley and Lewis, 1993), but the focus lies more specifically on the cognitive processes underlying spatial reasoning, decision-making, and behaviour (Gold, 1980). Moreover, the behaviour of individuals in space are seen as contributing to the development of places over time, and these place effects in turn, condition subsequent spatial behaviour – what Thrift and Williams (1981) has termed the 'active' and 'reactive' traditions, respectively, in behavioural geography (Longley and Batty, 1996). While the idea of space influencing human behaviour has generated much debate among researchers (see Sayer, 1992; Massey, 1995), the fact that space and its fragmentation has played an influential role in shaping the attitudes and culture of residents of South Africa is well supported in local literature (see Mabin, 2005; Ramutsindela, 2007). Indeed, researchers attribute much of the development of delinquency in South Africa on the so-called "culture of violence" that was inculcated on the youth in particular spatial locations under apartheid, most notably the townships (see Simpson, 1993; Bezuidenhout, 2003; Masango, 2004). Accordingly the youth are coerced into a criminal subculture as they grow up in a suburb in which crime and economic hardship has become internalised and part of their everyday lives. Schwabe (2000) speculates that offenders in South Africa are likely to be more prevalent in particular suburbs than in others while Kanbur (2003) argues that spatial units can develop special identities across geographical areas without the basis of ethnicity, race or religion. While numerous international studies have shown that residing within a high crime environment can influence offender development (Berman and Kurtines, 1996; Selner-O'Hagan et al., 1998; Galster and Santiago, 2006), locally no aggregate level empirical research has been done focussing on this linkage.

This article attempts to relate the influence of residential location in the context and origin of criminal offending. In

order to achieve this aim, the study has two main objectives. The first objective is to generate a preliminary socio-demographic profile of offenders residing within the Tshwane municipality. The second objective is to investigate the importance of location in the socio-demographic profiling of offenders through the use of location quotients (LQs). Rather than seeing wider criminal identities as arising out of socio-demographic variables, this study aims to examine their relationship to residential location.

## Method

### *Offender survey*

The socio-demographic profile for offenders residing within Tshwane was compiled with the aid of a written survey. A 28-item cross-sectional survey based on semi-structured questionnaires was undertaken in March 2006 on a random sample of 75 offenders (excluding parolees and awaiting trial detainees) incarcerated across five correctional centres within Tshwane. The five centres include Pretoria Central Correctional Centre (including Maximum and Medium), Pretoria Female Correctional Centre, Atteridgeville Correctional Centre and Odi Correctional Centre. The research population ( $n = 1004$ ) was identified as those offenders residing within Tshwane during their apprehension and who had complete docket information captured in the Management Information System (MIS) of the South African Department of Correctional Services (DCS). Stratified random samples according to predominant crime type were taken across the correctional centres with 37 economic (49%), 22 violent (29%) and 16 sexual (22%) offenders included. According to the DCS, violent crimes include murder, attempted murder, serious and common assault; economic crimes typically include common theft, burglary, robbery and fraud and forgery; and sexual crimes include rape, attempted rape, indecent assault, and incest. Based on previous profiling research (see Minnaar, 2000; Mistry and Dhlamini, 2001) the sample size of offenders ( $n = 75$ ) was deemed the minimum necessary to describe the broad socio-demographic characteristics of criminal offenders within the municipality.

The survey was structured into three sections focusing on first, the socio-demographic background of the offender, second, the social and physical characteristics of the household of the offender, and third, the type of crime for which the offender is currently incarcerated. Structured face-to-face interviews were utilised to supplement the survey in instances where offenders were unable to read or understand the content of the questionnaire. In the event of an offender being incarcerated for more than one type of crime, the crime for which he or she was serving the longest sentence was selected in the analysis. While it is readily acknowledged that certain crimes can occur simultaneously i.e., economic crime can be violent in nature, the aim of the study is to gain a broad socio-demographic perspective of offenders within the municipality. The following profile is based on the sample of 75 offenders.

### *A socio-demographic profile of offenders residing in Tshwane*

A criminal offender residing within Tshwane is most likely to be a single (68%), black African male (81%) in his mid-to late 20s (mean = 30). The individual is probably employed (58%) but is restricted in job prospects through a lack of tertiary education (62%). Minimum wage (i.e. less than R1600 per month, 62%) is being earned in a non-skilled occupation

(33%). There is a 40% chance that the offender either has a deceased parent or is unaware of their parents' mortality status. In terms of residential mobility, the individual is most likely to be born in South Africa (96%) but outside the Gauteng province (43%) and has recently moved into the Tshwane municipality (67%) from outside Gauteng (30%).

### *A social and physical profile of the household of offenders residing in Tshwane*

A criminal offender residing within Tshwane is most likely to be living in a formal house or townhouse (73%) comprising 4 or more rooms (80%) with more than 5 people sharing the dwelling (56%). The household will probably experience a relatively decent provision of basic amenities such as piped water inside the dwelling (56%); refuse removal by authorities (76%) and the availability of either a cellphone or telephone (72%). In terms of the provision of electricity and sanitation, the household would probably have electricity for cooking (76%), heating (68%) and lighting (88%), while 84% of the households will have flush toilets.

### *Locational profile of violent, economic and sexual offenders*

The socio-demographic profile outlined above, while useful in providing a non-spatial socio-demographic description of offenders within the municipality, conceals the importance of location in influencing criminal behaviour. In this study, location quotients (LQ) are used to not only illustrate the importance of location in the context of offending but to also investigate the socio-geographic differences between different types of offenders. The LQ, or excess risk ratio (Ratcliffe, 2004), is a measure that indicates how different an individual census unit is relative to the overall municipality (Mayer and Pleeter 1975; Hoover and Giarratani, 1984). This index shows the extent to which each census unit departs from the overall proportion in the municipality. If a suburb in Tshwane has a LQ of 1, then that suburb has exactly the same relative frequency for the category being considered i.e., rate of violent offenders, as is found across the entire municipality. If a suburb has a LQ of 0.5 then that suburb has for example, a violent offender rate that is half the municipal rate, and perhaps a less risky suburb. Conversely, if a suburb has a violent offender rate greater than 1, then the violent offender rate is over-represented in the suburb and hence there is a relative concentration of violent offenders in that suburb.

LQs have their historical antecedents in regional economics where the measure is typically used to identify basic industries such as those in which production exceeds the national average (Brantingham and Brantingham, 1998; Virtanen et al., 2001). Despite being relatively new in criminological research (Carcach, 2000; Yang and Schneider, 2005), the measure brings immense value to computerised crime mapping analysis in terms of examining the spatial structure and distribution of criminal aspects not available using crime counts and crime rates (Brantingham and Brantingham, 1998). For example, while certain suburbs of the Tshwane municipality may dominate in terms of total counts of violent offenders, there may be a disproportional representation of different types of offenders in certain suburbs compared to their surrounding areas. Being a relative measure and without dimension (Brantingham and Brantingham, 1998), LQs also provide a more vivid measure of risk than for example the high and low indicators of offender rates (Ratcliffe, 2004).

This knowledge has implications not only in terms of gaining a better understanding of offender development but also in terms of future policing and public policy formation. In criminological form, the LQ formula is expressed as follows:

$$LQCi = (Cij/Ai)/(\sum Cij/\sum Ai)$$

Where:

$Cij$  = crime frequency in suburb  $i$

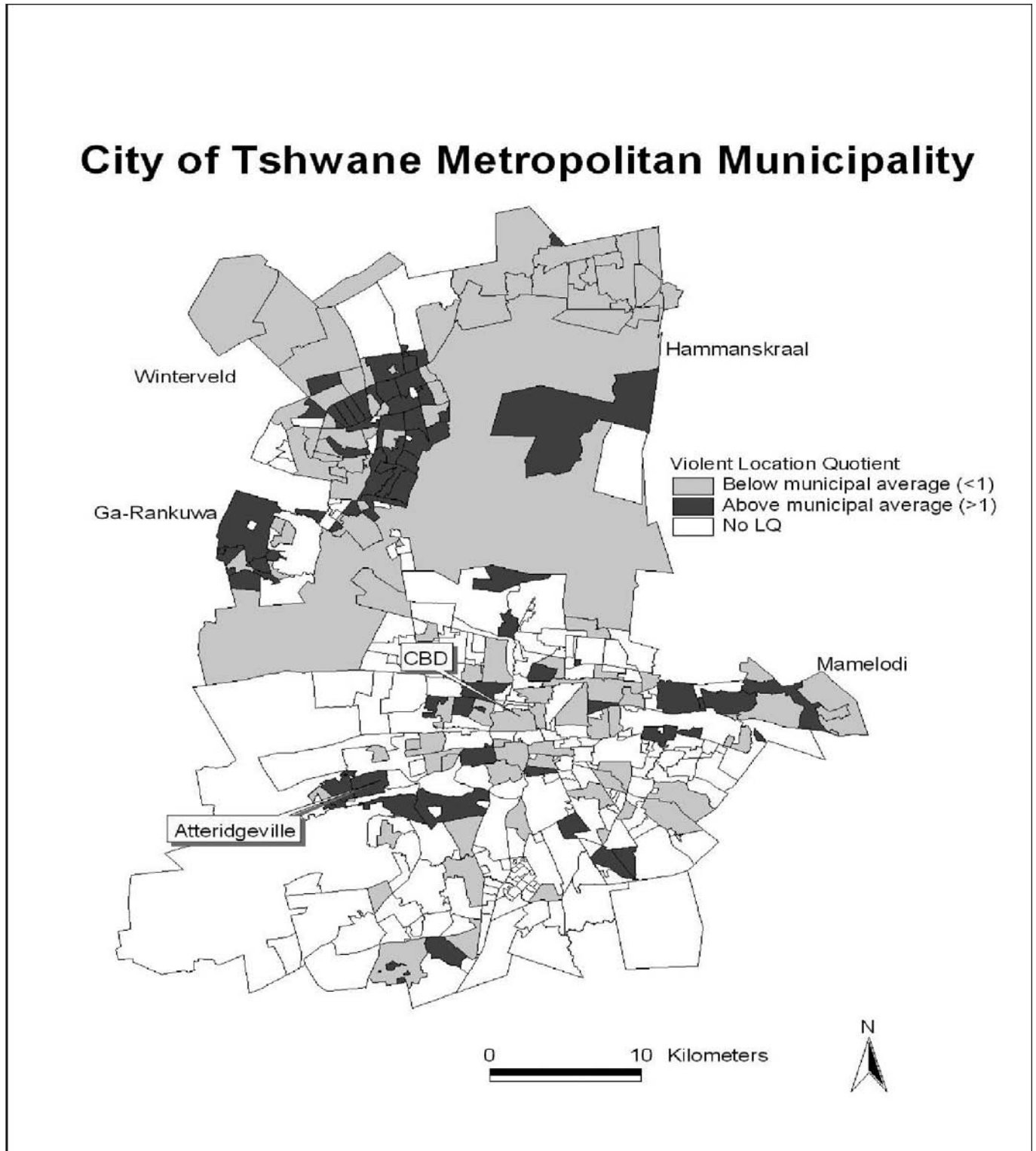
$Ai$  = area measure like population at risk, total crime count in suburb  $i$

$\sum Cij$  = crime frequency in the whole area

$\sum Ai$  = total area measure in the whole area

The LQC measure is used to map the spatial distribution of the population of violent ( $n = 294$ ), economic ( $n = 501$ ) and sexual ( $n = 209$ ) offenders residing within the Tshwane municipality. The area based measures selected for this analysis is the number of offenders (numerator) per 1000 population above the age of 18 years (denominator). LQs were calculated and mapped for each suburb within the Tshwane municipality and are displayed in Figure 1a.

Figure 1a: Location quotients of violent offender rates by suburbs in the Tshwane municipality



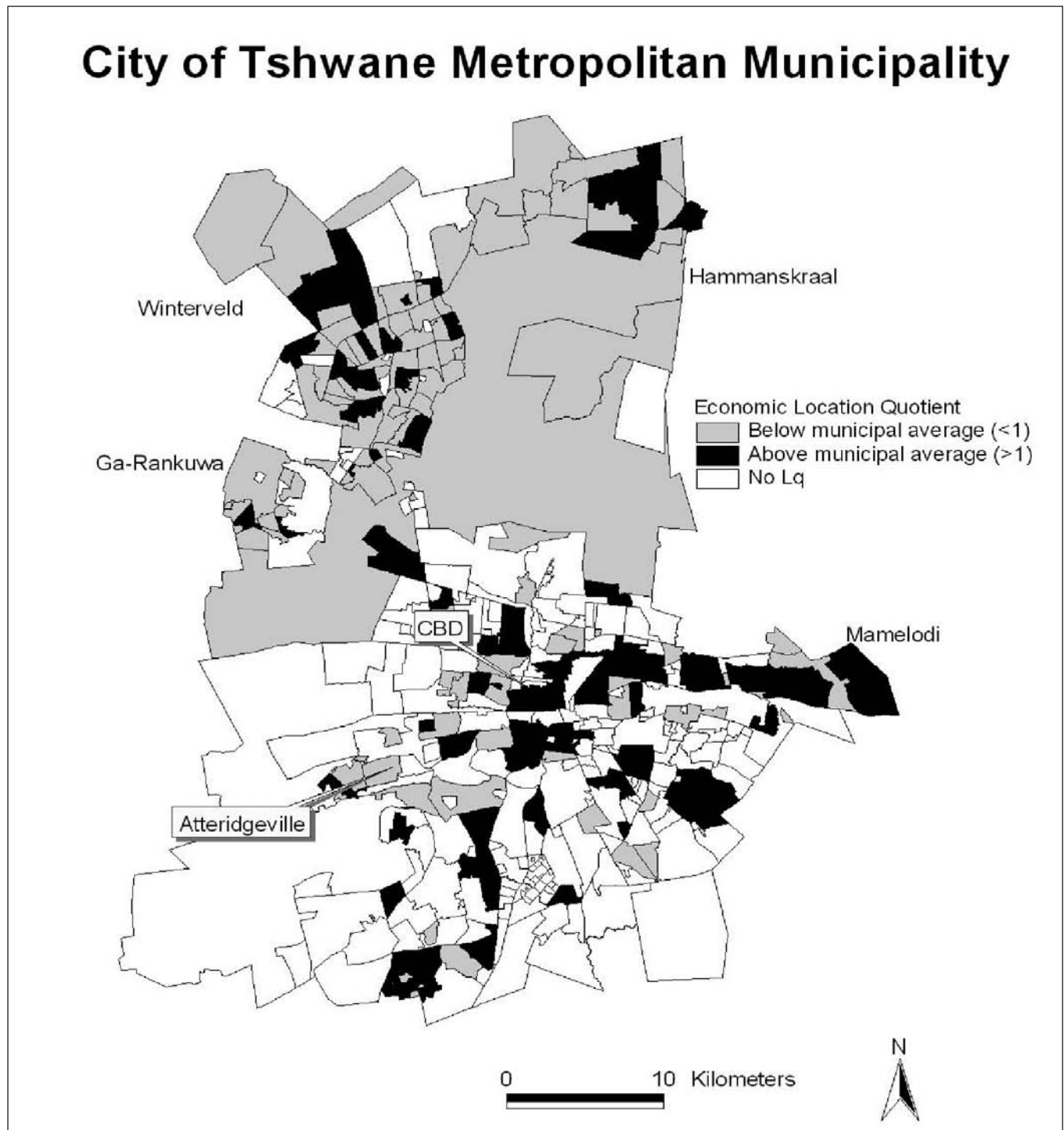
Source: Author

LQCs calculated at the suburb level of aggregation for the Tshwane municipality reveal a considerable imbalance in the rate of offenders across all crime categories. The LQC for violent offenders across the Tshwane municipality (Figure 1a) displays a clear regional concentration in the northern and western regions of the municipality. These clusters of suburbs stand out as having a substantially higher share of violent offenders in relation to the municipal average. The violent offender rate is quite widely dispersed among the more affluent eastern and southern regions of the municipality with many suburbs experiencing below average numbers. A number

of suburbs within Tshwane also exhibit no LQC, which is indicative of the lack of offenders emanating from such areas.

LQCs for economic offenders (Figure 1b) display a more randomised spatial structure. Suburbs with economic offender rates above the municipal trend are heavily concentrated throughout the northern, eastern and central regions of the municipality. An explanation for this result is partially embedded in the differential historical development of the Tshwane municipality with economic policies being traditionally beneficial of the white-occupied major urban centres with few provisions for the outlying traditionally black townships.

Figure 1b: Location quotients of economic offender rates by suburbs in the Tshwane municipality



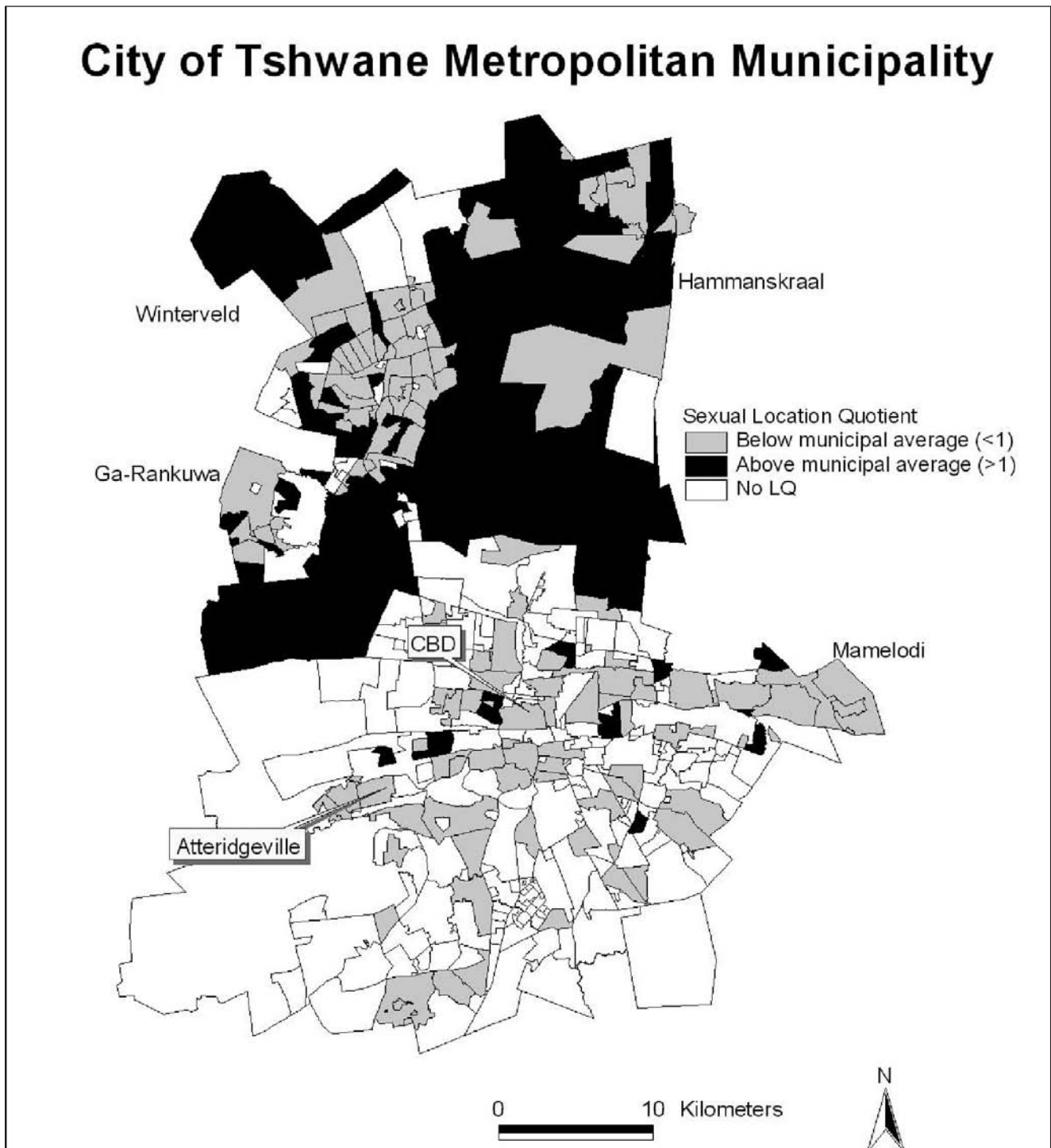
Source: Author

Clear evidence of the inequitable distribution of wealth and the lack of service provision has also been shown to exist in these regional concentrations of suburbs (Erasmus, 2004; McIntyre et al., 2000). These suburbs are however often adjacent to suburbs displaying economic offender rates which are below the municipal average and provides a first empirical clue that economic offending within Tshwane may not solely be driven by financial need.

The sexual offending LQCs (Figure 1c) are more widely dispersed throughout the municipality. The northern region of the municipality once again stands out as containing an exceptionally large proportion of sexual offenders in number

as well as in area. Similar to the LQCs for economic and violent offenders, a regional concentration of below average suburbs exists in the affluent eastern and southern regions of the municipality. Yet again a number of ‘high risk’ suburbs specifically in the northern regions of Tshwane lie adjacent to suburbs with below average rates of sexual offending. This cannot be explained solely by socio-demographic differences between suburbs or as an effect of regional specialisation alone since these areas are known to exhibit similar levels of social and economic deprivation (Erasmus, 2004; McIntyre et al., 2000). A more thorough investigation is required to determine the individual differences between the profile of violent, economic and sexual offenders.

Figure 1c: Location quotients of sexual offender rates by suburbs in the Tshwane municipality



Source: Author

At this initial juncture it appears as though while space does display an overarching effect on rates of violent, economic and sexual offending, localised discrepancies within concentrations of high risk locations suggest that offending in a local context may be caused by factors other than levels of economic and social wealth.

*The locational profile of the sample of 75 offenders*

The locational effect of the LQCs is further investigated within the context of the sample of 75 offenders. The LQC for each suburb where an offender in the sample resided upon their apprehension was calculated and averaged according to crime type. The result is displayed in Table 1 below which indicates that for example, the sample of 22 violent offenders emanate from a total of 17 suburbs within the Tshwane municipality and the average violent, economic and sexual LQCs for those 17 suburbs based on the spatial distribution of the total population of offenders (n = 1004) are 1.14, 0.96 and 1.07 respectively. Table 1 shows that the sample of 75 offenders reside in a total of 42 suburbs in the municipality which have a combined violent LQC value of 1.28, meaning that these suburbs have violent offender rates that are 28% higher than the municipal trend for violent offending.

suggests that in the context of the sample of offenders, location is a lesser determinant for sexual offending than for violent and economic offending, and that perhaps alternate individualised motivations exist for sexual offenders within the municipality.

**Discussion**

A number of theories have been postulated to explain high offender and crime rates occurring within certain neighbourhoods. Past international research summarised by Oh (2005) highlight poverty (Parker, 1989; Lee, 2000), unemployment (Grant and Martinez, 1997; Miethe et al., 1991), income inequality (Blau and Blau, 1982; Shihadeh and Ousey, 1996), family disruption (Sampson and Groves, 1989; Shihadeh and Steffensmeier, 1994), and population mobility as the key ecological determinants of urban crime rates (Crutchfield et al., 1982; Sampson and Groves, 1989; Shaw and McKay, 1942). Locally, Breetzke and Horn (2006) have shown that offender rates are associated with the spatial incidence of four broad factors – low social status and income, a large and young family, unskilled workers and high residential mobility. While it is readily acknowledged that all of the above factors hold some explanatory power in understanding the profile of an offender, this study has shown that it is not only these

Table 1: Average Location Quotients (LQs) for the suburbs of the sample of 75 offenders

Type of offenders	No of offenders in sample	No of suburbs	Average Violent LQ	Average Economic LQ	Average Sexual LQ
Violent	22	17	1.14	0.96	1.07
Economic	37	26	1.38	1.31	0.94
Sexual	16	14	0.81	1.30	1.12
Total offenders	75	42*	1.28	1.17	1.11

\* The number of suburbs containing the 75 offenders do not sum to the total (n = 42) since a suburb can contain more than one type of offender  
Source: Author

In terms of differentiating between the three types of offenders the results display interesting findings with violent offenders tending to emanate from suburbs that have violent, economic and sexual offender rates that are similar to the municipal rates. However, an examination of the economic LQCs indicates that economic offenders tend to emanate from suburbs that have violent offender rates that are 38% higher than the municipal trend and economic offender rates that are 31% higher than the municipal trend. This finding implies that in the context of exposure to criminal elements, economic offenders are more prone to the locational effects of suburbs than violent or sexual offenders. With both violent and economic LQCs higher than the municipal trends for economic offenders the implication is that these offenders not only emanate from suburbs with similar demographic characteristics but also from suburbs in which there is a significant exposure to violence or economic hardships than for instance violent or sexual offenders. In contrast, the sexual LQC indicates that sexual offenders tend to emanate from suburbs that are near the municipal rate for sexual offending, but 30% above the municipal trend for economic offending and 19% below the municipal trend for rates of violent offending. This result

socio-demographic variables that play a role in criminality but rather possible individualistic motivations coupled with the desensitising and disinhibiting effect of residing within a high crime environment.

The fact that offenders in this study tended to cluster together within certain suburbs of the municipality and also resided in suburbs that exhibited offender rates between 11-28% higher than the municipality as a whole reinforces the spatial deterministic viewpoint expressed earlier in the article. The geographical assumption underlying this finding is that it could be that suburbs communicate signals of neighbourhood dissonance to the criminally minded. Implicit in this assumption, and key to the processes espoused by behavioural geographers, is that a criminal is alert to such messages and under the concomitant influence of social and economic hardships resorts to criminality. The issue of why suburbs have, or could, develop criminogenic identities is beyond the scope of this study but in a South African context it would be pertinent to suggest that the role of the apartheid space-economy should not be underestimated.

### *Location vs violent offenders*

In terms of violent offending, the study has shown that the sample of violent offenders tends to emanate from suburbs that exhibit violent, economic and sexual offender rates similar to the municipal rates. A possible explanation for this finding can be found in the nature of violent crime in the municipality. According to Barolsky (2007: 25) a substantial proportion of violent crime in South Africa occurs “in the heat of the moment in the context of interpersonal relations between people who know each other.” In this context, the ‘enemy lies within’ and being exposed to high crime environments plays less of a role. This finding is contrasted by Collings and Magojo (2003) who found that exposure to community violence was positively associated with the severity and incidence of individual and group aggressive behaviour. Although the researchers did contend that other environmental factors such as socio-economic status did not constitute as a risk factor for violence.

According to Louw (2004) information and understanding about violent offenders in South Africa is lacking. The researcher argues that theoretical frameworks for understanding violence are required together with a more thorough understanding of the factors that facilitate violent behaviour in the country. Currently local researchers seek psychological (Welman, 2004), sociological (Seekings, 2004) and political (Taylor, 2004) explanations for the violence in South Africa, while Barolsky (2007) highlights the need to recover the value of life in the country. Whereas various risk factors no doubt do create an environment conducive for violence, the study has additionally shown that individualised motivations, which arguably differ from individual to individual, play a more significant role.

### *Location vs economic offenders*

The study has shown that location, in the form of a high crime environment, plays a more significant role for economic offenders than for violent or sexual offenders. While social and economic deprivation are common ecological determinants of economic offending both internationally (Sampson, 1985; Miethe et al., 1991) and locally (Brown, 2001; Demombynes and Özler, 2005), the study finds that suburbs which exhibit similar levels of social and economic wealth contain varying measures of risk for economic offending. This finding dispels the notion of economic need rather than greed motivating economic offenders in the municipality and rather highlights the self-satisfying motivations behind these offenders. While exposure to economic and social hardships are likely to be of aetiological significance in the development of criminal behaviour, economic crime is often seen as a means to obtain instant wealth among the youth of South Africa (Stephen, 2007) and the results of this study supports this contention.

### *Location vs sexual offenders*

From a sexual offending standpoint the linkage between locational effects, in the context of exposure to a high crime environment, and offending is less clear. The sample of sexual offenders tended to emanate from suburbs with below average rates for violent offending but from suburbs that have economic offender rates that are 38% higher than the municipal trend. Linkages between economic and social deprivation and sexual

offending are blurred and it is rather individual internalised motivators such as exposure to pornography (van Niekerk, 2005), cognitive distortions (Meys, 2003), psychopathy (Gretton et al., 2001), parental attachment (Davis, 2002), prior victimization and abuse (Wedge et al., 2000), deviant sexual interests as well as the need for power and control (Hesselink-Louw, 2004) that have been proposed as influencing the propensity to commit sexual offences. These risk factors are difficult, if not impossible, to represent using census-based variables in an aggregated form across a geographical area. This places certain limitations on the findings of this research pertaining specifically to sexual offending.

## **Conclusion**

The aim of this study was to improve knowledge on the spatial development of offenders in the Tshwane municipality. An initial socio-demographic profile of a sample of 75 offenders residing within the Tshwane municipality revealed that an offender is typically a young, black South African male with a modest income in a non-skilled occupation residing in a formal house with a relatively decent provision of basic services and amenities. While such socio-demographic profiles provide valuable insight into offender development, the geographic element inherent in offender development is lost. With the aid of location quotients, the spatial distribution of the population of violent, economic and sexual offenders residing within Tshwane were calculated and mapped. Violent, economic and sexual rates of offending are scattered over most suburbs of the municipality, but concentrated patterns of suburbs exhibiting rates of violent, economic and sexual offenders above the municipal trend were found in regions predominantly in the northern, eastern and western of the municipality. The spatial incidence of the population of offenders was subsequently investigated in the context of the sample of 75 offenders. Investigations revealed that the sample of offenders tended to reside in suburbs that exhibited offender rates that are between 11-28% higher than the municipality as a whole. The greatest influence on location was found for economic offenders who tended to emanate from suburbs whose exhibited violent offender rates 38% higher than the municipal rate, and economic offender rates 31% higher than the municipal trend. This finding suggests that in the context of Tshwane, location is an effective predictor of criminal behaviour. Insofar as behaviours are socially influenced it could well be the case that individuals residing in suburbs of similar social and economic stature adopt the behavioural characteristics of their neighbours, even if that behaviour is criminogenic. Rather than seeing wider criminal identities as arising out of socio-demographic variables it should be more promising to examine their relationship to location. It is through this spatial watch glass that a more thorough understanding of criminal offending can be obtained in South Africa.

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GREGORY D. BREETZKE  
 Department of Geography, Geoinformatics & Meteorology  
 University of Pretoria  
 Pretoria 0002, South Africa  
 E-mail: gbreetzke@postino.up.ac.za