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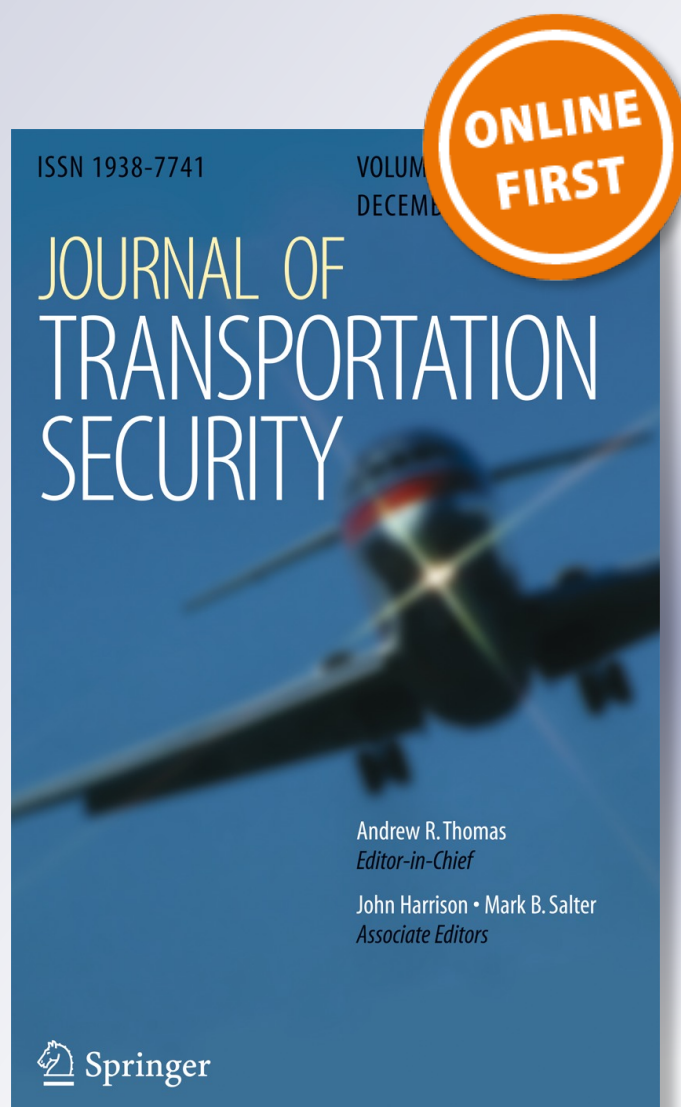
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Areal differentiation in crime in public transit terminals in Ibadan metropolis

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Abstract The unprecedented rate of urbanization in the twentieth and twenty- first century in most less developed countries (LDC) is coming at a huge cost to cities in these countries chief among which are distorted morphologies, dysfunctional infrastructural system and ever-increasing crime rate, In Ibadan metropolis one of the infrastructure that has been subject of this systemic abuse are the public transit terminals, this study analyses the incidences of crime, the spatial pattern of their occurrences and the nature of crime which are prevalent in and around major road transit terminals, statistical records of crime incidences and data on crime experiences of two hundred and fifty respondents were analyzed statistically and descriptively, the findings revealed that crime rate, the nature and pattern of occurrence varied spatially within the metropolitan parks, recommendations on how best to safe-guard the parks are subsequently made.

Keywords Crime incidence · Spatial pattern · Transit terminals · Metropolis · Infrastructural decay

Introduction

Trips on public transport system in major cities across the world are daily becoming associated with fear and concern for passenger's safety (World Bank 2002; Newton 2004; Ajayi 2010). Rather than being an occasional occurrence urban crime has grown monstrously in contemporary times to assume world wide relational indices with urbanization (Pain 2000). Urban public transit facilities and infrastructures (buses, loading points, motor-parks) are becoming significant platforms for perpetuation of these ignoble acts. The socio-economic role that efficient, affordable and functional transport system plays is simply incomparable. In most developing

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societies, cities like Ibadan are the major sources of the nation's development; their growth is highly incidental and impactful on the national economic growth. It is a truism that inefficient, poorly designed and planned transport system inhibits the growth of cities and makes poverty reduction a herculean task (World Bank 2002). Personal security on and off transport infrastructures is becoming a crisis in many developing countries, the risk to life and properties that are becoming regular features on transport routes and terminals in Ibadan and this in conjunction with other transportation problems can lead to social exclusion especially among the poor and impede accessibilities to job, health, education, and social integration and bonding among the residents.

In Ibadan, the locations of these parks are also part of the complex arrangement of the public transit system. In 1984 specific locations within the cities were delineated as bus stops/terminals (Filani 1994). These were Agodi-Gate, Dugbe, Beere, Molete and Challenge bus-stops. Their positioning were part of the measures to improve the flow of traffic and was meant to discourage the indiscriminate picking and dropping of commuters both on intra-city and inter-city routes. It is observable that most of these parks and terminals which were initially sited at the city outskirts are now part of the built up areas. Filani (1994) observed that "it is difficult to secure well defined areas for the construction of lay-bys to serve as stops for buses". In recent years developers have encroached into lands designated mostly as parks in Ibadan. The resultant effects are seedier environment which are acting as a breeding ground for criminal activities both within and around such parks.

Apart from the problem of space, most parks in Ibadan do not enjoy electricity supply in the evening and night. Studies have shown that crime rates are disproportionately high on the public transit system at evenings when criminals hide under darkness to perpetuate their nefarious acts (Newton 2004; Pain 2000). Empirical research (Loukaitou-Sideris 1999) indicates that environmental attributes and site conditions at bus stops do have an impact on crime levels. Incidences of crime on road transport terminals and route networks are neglected topics in Nigeria literature. There is a general paucity of information and statistics on this social menace. Therefore, the need to have reliable information about the nature and extent of crime and disorder on public transit terminals in Ibadan city cannot be over-emphasized.

The growing rate of crime in most cities in less developed countries have been fueled significantly by the quantum leap in population sizes of these countries, unprecedented rate of urbanization and poverty (Ajayi 2010; Fabiyi 2004; Agboola 1997) researches have however shown that urbanization in Nigeria like most countries in sub-Saharan Africa predates contacts with the western world (Egunjobi 1999; Mabogunje 1968). Mabogunje (1968) observed that cities like Sokoto, Ibadan and Abeokuta were inhabited by human populations of over one hundred thousand (100,000) before the advent of colonisation. The development of these cities was tied mainly to the major functions they performed, which ranged from religious to defence, trading and administrative functions.

Nigeria experienced unprecedented pace of urbanization in the post independence era. The post colonial administration employed the growth pole model of regional development which led to the concentration of public investments on the already urbanized and fast-growing regional and national capitals respectively (Ibadan, Kaduna, Enugu, Benin City and Lagos). The resultant effect of this was the excessive migratory rural-urban population drift.

The growth of urban center has two dimensions: population growth and spatial expansion or territorial growth. Mabogunje (1968) notes that the engine of this growth arguably has been transportation. In Nigeria, of all the modes of transportation, the most important in terms of inter-city and intra-city traffic movement is the road transportation (Ominu and Onokerhoraye 1995). The automobile has evolved over the years to become the ubiquitous transportation medium within cities. Daniels and Warnes (1980) observed that “Cities were not possible until transportation allowed the movement of people and goods. Cities function through complex network of transport system”.

The public transit system (Newton 2004), notes is a multifaceted arena with a complex interaction of settings (transit buses and taxicabs), facilities (motor parks/bus stops) and users (union of road transport workers, passengers and traders). Research in spatial tendencies of crime has revealed strong regional differentials over urbanised environment, the effects of contextual variable such as anomie, deprivation, unemployment and poverty on urban location are critical determinant of the level of criminality of a location. (Loukaitou-Sideris 1999).

Investment in motor parks by successive governments in Nigeria is debatable. The design of this facility and the internal environment of most parks may influence the level of crime experienced within the urban public transit system. The environments in most motor parks in Nigeria are suitable breeding grounds for criminal activities. The array of unemployed and underemployed youths lazing around most motor parks are often than not, willing recruits into criminal groups which mostly use such parks either as base or launching pads. The activities of illicit drug peddlers and alcohol sellers who openly display their wares in most parks often acts as catalyst to these criminal activities. The design of public transit terminals/bus-stops in Nigeria is mainly as boarding and alighting points for travelers. Its design and functionality is geared towards the satisfaction of the attribute of the economy of time, in the technical characteristics of transport mode (Filani 1994). Rising wave of crime has not only altered the characterization of living conditions in most cities in Nigeria, the issue of insecurity has also influenced the morphology, accessibility and utility of public infrastructures. The advent of gated neighbourhoods in Ibadan metropolis (Fabiye 2004) where urbanites secured access links roads to their neighbourhoods with manned gates is a reflection of this.

Criminal activities are playing pivotal role in both the accessibility and functionality of public infrastructure within the Nigerian urban's landscape. The functionality of road transport terminals are being undermined by the real and imaginary fear of crime incidences within and around these parks. Agboola (1997) noted that the fear of crime has become a factor in the architectural designs of most buildings in Nigeria's cities. The huge cost dedicated to buildings fences in Nigeria around some private and public structures in various cities attests to this assertion.

This study examined and analysed the spatial pattern in the incidence of crime in and around major motor parks/bus stops in Ibadan metropolis. The research specifically examined the nature of criminal activities prevalent in these parks, analyzed the spatial pattern of crime occurrence among the identified motor parks in Ibadan metropolis and made comparative analyses between the incidences and the nature of criminal activities in and around these parks.

This paper is divided into five sections the first section is the introductory part: section two reviewed conceptual issues and relevant literature on the subject, section three examined the materials (the instruments used in conducting the research) and methodology employed, section four discussed the results of the findings and analyses, while in section five recommendations were made.

Review of related literature

Environmental criminology theories hold that convergences of a number of factors are important for the occurrence of crime. These are location, environment, the potential opportunity to commit a crime, the absence of capable law enforcement agents, the presence of offenders and targets and right timing (Clarke and Eck 2003). There are three major theories of environmental criminology. These are routine activities theory (Cohen and Felson 1979) which states that for crime event to occur there must be convergence in space and time of three factors. These are:

- (a) The availability of a motivated offender;
- (b) The absence of a crime preventing officer/guardian and
- (c) The availability of suitable target.

In Ibadan metropolis motor parks and the environment in which they are sited arguably satisfied these conditions. The second theory is the rational choice theory (Cornish and Clarke 1986). This theory suggests that offenders will choose their targets and goals in a manner which is explainable. Crime is generally assumed to be purposive to the availability of information. The presence of teeming able-bodied loiterers in motor parks around the city who have no defined source of livelihood, and who of necessity are desirous of meeting life basic needs, (feeding, clothing, shelter etc.) surely have purposive needs which can lure them to commit criminal acts. Crime Pattern Theory (Barintingham and Barintingham 1995), suggests that “crime is an event that occurs when an individual with some criminal readiness level encounters a suitable target in a situation sufficient to activate that readiness potential”. The environment in and around major motor parks in Ibadan are conducive for criminal activities. Among other factors, the parks provide abodes for touts, urchin and unemployed youths. One of the early studies on the prevalence of crime in public transport study of the public transit system was carried out by Pearlstein and Wachs (1982). They found out through an intensive study of the public transit system in California that there is a high crime rate when buses stopped at terminals located in areas of high crime rates. The study further revealed that crime occurred mostly when passengers volume were highest and usually during late evening. Based on the foregoing they asserted that they are both spatial and temporal dimension to crime on public transit system .

Block and Davis (1996) revealed that the distribution of street crime in four districts of Chicago were incidental to areas designated as rapid transit bus stations. The locations of these stations acted as crime generators in the districts studied. Loukaitou-Sideris (1999) studied the connection between criminal activity at bus-stops and environmental factors which included the location of liquor stores, bars,

movie theatres, vacant lots/buildings etc. within 300 ft of bus-stops. They were found to have direct influence on the prevalence of crime rates in such locations.

Liggert et al. (2001) discovered that by using a series of regression models it is possible to predict the level of criminality of an area. He identified that the putting of bus terminals/stops in locations can lead to upsurge in the level of crime experienced in such areas. Hebert (1982) found that high crime rates in certain locations are attributable to the economic and social history of such places. In a related manner Pain (1996) reported that crime rate prevalence are discovered to be incidental on social geographical processes at any given location. Pain (2000) identified that social structural problems like urban clustering, high rate of unemployment, drug abuse, poor housing, poor policing and surveillance have direct influence on the level of crime experienced at any location.

Researches in urban transport problem in Nigeria are inexhaustive, Tranpoconsults (1976) observed that forty-four percent of the designated parking lots/bus-stops in Lagos hinders free flow of traffic. And Ogunsanya (1983) have shown that these problems are of three broad types, these are empirical, theoretical and conceptual. These studies overtime identified the major road transportation problems in the contemporary Nigerian cities to include among others: traffic congestion, movement delay, dangerous and reckless driving, environmental pollution, on street trading, inordinate use of parking lots, location and management of bus stops etc. Ogunsanya (1985) found that on-street parking and illegal 'bus stops' accounts for 30 % of hold-ups and traffic congestion in some location within Lagos metropolis.

The misuse or under utilization of most designated bus-stops/terminals are partly responsible for the springing up of illegal terminals in most Nigeria cities. Most of these terminals are either abodes to touts or traders who deal in illicit drugs. Transit policy makers and planners in Nigeria have not helped matters because it is debatable if any of the three urban transportation planning (UTP) models and location model were used in locating these parks, indeed Babalola (1993) opined that locations of public transits terminals in Nigeria have both been subjective and informed by human judgment.

The functionality of cities is doubtlessly dependent on how efficient its transport network system is (Daniels and Warnes 1980). Thus they are of the view that a deficient transport system can lead to distortion of a city's morphology. (Filani 2000; Rae 1968) are of the view that 'modern metropolis, in both its good and bad features, is peculiarly a product of transportation technology' and to underscore the indispensability of efficient and safe urban transport system within Nigerian cities, Ogunsanya (1993) concluded that 'transport is considered as a catalyst that can lead to the development, growth or demise of these cities' The gradual emergence of the burgeoning problem of crime incidences in and around road transport terminals in Nigeria's cities can in relation with other unresolved problems increase the daunting mobility crisis being experienced by most of these cities.

Study method

Data were collected from both primary and secondary sources. Data from the primary source involved the use of questionnaire. The questionnaire was administered to two

hundred and fifty respondents (passengers, drivers and traders) fifty respondents were randomly selected from each of the five selected motor parks. The selected bus terminus are those in Ojoo, Sango, Iwo Road, Challenge and Dugbe. The selected parks are sited at different sections of the city, this was done to achieve a wide spread coverage. It must be stated that the selected parks are major interstate parks that are usually beehive of activities. The questionnaire elicited information on the socio-economic characteristics of the respondents; age, sex and occupational status of the respondents. It equally elicited information on the crime experiences of the respondents, the nature of crime they have both witnessed and fallen victim of, data on what the respondents believed is attributable for the high incidences of crime were also collected from the users of these parks. Secondary data collected were from crime statistics from 2003 to 2008 in and around the parks studied. These were collected from the Oyo State Headquarters of the Nigerian Police, Eleyele, Ibadan.

Result and discussion

In this section the result of the analyses are discussed.

Analysis of crime incidence in and around the studied parks

Based on available crime statistics there is a relatively high level of homogeneity in the nature of criminal acts prevalent across all the parks even if there are comparative differences in the reported figures for each park, the analysis revealed that particular crime types are common occurrences across all the parks in all the years under consideration (Tables 1, 2, 3, 4, 5, 6 and 7; Fig. 1).

There were noticeable differences in the rate of occurrence of each of this crime type although breach of public peace and possession and consumption of hard drugs recorded the highest incidences across the parks.

Table 1 Crime incidences and their percentages across each of the studied parks

Park	Grievous wounding/ Mugging		Indecent assault, sexual assault, rape		Theft, pick pocket and stealing		Burglary and store breaking		Gambling, obtaining by trick		Breach of public peace and possession of hard drugs	
	No	%	No	%	No	%	No	%	No	%	No	%
Challenge	69	18.1	56	14.44	95	26.46	192	32.32	138	27.6	288	24.16
Dugbe	82	21.40	72	20.86	92	25.62	94	15.82	92	18.40	128	10.73
Sango	50	13.05	73	21.15	12	3.34	75	12.62	25	5.00	46	12.24
Iwo road	119	31.07	98	20.40	128	35.65	138	23.23	110	22.10	482	0.43
Ojoo	63	14.44	52	15.01	32	8.19	95	15.99	135	27.00	148	12.41
Total	385	100	345	100	359	100	594	100	594	100	1192	100

Author's fieldwork 2009

Table 2 Total incidence of each crime type and their percentages

Crime type	Incidence rate	%
Grievous wounding/Mugging	385	11.36
Indecent assault and rape	345	10.24
Theft, stealing and pick pocket	359	10.65
Burglary and store breaking	594	17.61
Gambling/Obtaining by tricks.	500	14.82
Being in possession of hard drugs and Breach of public peace.	1192	35.33
Total	3373	100

Author's fieldwork 2009

There were 1192(35.33 %) reported cases for the period considered and this was followed by the incidence rate reported for burglary and store breaking, a total of 594 (17.61 %) cases was reported while the crime type with the lowest incidence rate reported was indecent assault and rape it had a total of 345(10.24 %) cases for the period under consideration.

The application of multivariate statistics of analysis of variance to examine if there was a significant variation in the incidence of occurrence of these crimes among the parks for the period under consideration, show that in 2003 an F-statistics value of 2.890 was obtained at a significance level of 0.005, which thus revealed a significant

Table 3 Analysis of Variance (Anova) of crime incidences in the studied parks for the the period reviewed (between 2003 and 2008)

		Sum of squares	df	Mean square	F	Sig.
2003	Between Groups	738.183	11	67.108	2.890	.005
	Within Groups	1114.400	48	23.217		
	Total	1852.583	59			
2004	Between Groups	1375.533	11	125.048	3.516	.001
	Within Groups	1707.200	48	35.567		
	Total	3082.733	59			
2005	Between Groups	1212.200	11	110.200	2.446	.016
	Within Groups	2162.800	48	45.058		
	Total	3375.000	59			
2006	Between Groups	1228.733	11	111.703	1.798	.081
	Within Groups	2982.000	48	62.125		
	Total	4210.733	59			
2007	Between Groups	1354.333	11	123.121	2.715	.008
	Within Groups	2176.400	48	45.342		
	Total	3530.733	59			
2008	Between Groups	1745.250	11	158.659	2.177	.032
	Within Groups	3498.400	48	72.883		
	Total	5243.650	59			

Table 4 Sex of respondents

Sex	Responses	Percentages
Male	124	49.4
Female	126	50.6
Total	250	100

Author's field work 2009

variation in the dependent variable(crime incidences) as explained by the independent variable (the different parks and the years under consideration). The test was repeated for the remaining years under consideration and similar results were obtained which incidentally is consistent with findings by crime spatial analysts that crime incidence over large urbanized landscape shows strong regional differentials (Newton 2004; Loukaitou-Sideris 1999),

This findings show that crime incidences in and around the parks studied in the city do differs significantly for the period considered, two hundred and fifty questionnaire were also randomly administered to respondents in around the park, Analyses carried out based on the responses elicited from the questionnaires are below:

Socio-economics characteristics of the respondents

Out of the two hundred and fifty sampled population, 124 of them are male which represents 49.6 % while 126 (50.6 %) of the respondents were female. The sex ratio of the sampled population reflect some degrees of equilibrium between the two sex types, the implication of this fact is that the analysis done from the from the questionnaires will likely be bias free when the sex of the respondents are considered.

The breakdown of the occupational status of the respondents revealed that 64 (25.6 %) of the respondents were students, while drivers and allied employees engaged in provision of public transit services were 50(20 %) out of the total number of respondents, 31(12.4 %) of the respondents admitted that they are unemployed as at the time the survey was conducted this is a pointer to the general prevailing trend in the country, The National Bureau of Statistics (2006) revealed that the unemployment rate nationally for urban areas for 2006 was 61.3 % for the adult male and 38.7 % for the female (NBS fact book 2007), researches have shown that crime rates increases significantly whenever there is a rise in unemployment rate,(Pain 2000).

Table 5 Occupation of respondents

Responses	Frequency	Percentages
Schooling	64	25.6
Driving	50	20.0
Trading	48	19.2
Civil servant	32	12.8
Artisans	14	5.6
Unemployed	31	12.4
Others	11	4.4

Author's fieldwork 2009

Table 6 Crime experience of the respondents across the studied parks

Observation	Responses	Frequency	Percentage
Ever witnessed any crime in this park?	Have witnessed	161	64.4
	Not witnessed	89	35.6
	Total	250	100
Type of crime witnessed	Fighting/Affray/Breach of Public peace.	80	49.68
	Smoking of Indian Hemp	19	11.80
	Gambling	9	5.59
	Sexual Harassment	5	3.10
	Stealing/Theft	40	24.84
	Police Battery	2	1.24
	Kidnapping	6	3.72
	Total	161	99.93
Ever a victim of criminal act?	Yes	95	38
	No	156	62
	Total	250	100
Type of crime of which you were a victim?	Fighting/Affray/Mugging	43	45.26
	Smoking of Indian Hemp	10	10.52
	Gambling	1	1.05
	Stealing/Theft and Robbery	30	31.27
	Sexual Harassment	5	5.26
	Kidnapping	6	6.31
	Total	95	99.68
Time of the day attacked?	Morning	13	13.68
	Noon	23	24.21
	Evening	25	26.31
	Night	34	35.78
	Total	95	99.98
Sex of the victim of criminal act	Male	38	40
	Female	57	60
	Total	95	100

Author's fieldwork 2009

The table above depict the analysis of the crime experiences of the respondents across the five parks, 161 (64.4 %) of the respondents admitted that they have witnessed one crime or another being committed, this implies that a larger proportion of the respondents admitted that they have witnessed occurrence of criminal acts within and around the parks, 80 (49.68 %) of the respondents opined that they have witnessed fighting/affray and breach of public peace, this represented the largest proportion of all crime types witnessed, this figure is in sync with the crime statistics collected from the State Police Command which recorded that fighting/affray and breach of public peace was the crime type with highest incident rate for the period

Table 7 Identified factor responsible for crime prevalence in the studied parks

Factors	Frequency	Percentage
Unemployment/Poverty	101	40.4
Consumption of hard drugs	23	9.2
Inadequate security	20	8
Bad elements among the drivers and transporters	30	12
Lack of perimeter fencing	11	4.4
Menace of area boys/politicization of union of road transport workers	5	2
Lack of lighting/electricity in the parks at night	12	4.8
Illiteracy	8	3.2
Overpopulation	8	3.2
No response	30	12
Total	250	100

Author's fieldwork 2009

considered; 1192(35.22 %) cases were reported across the parks for the 5 years considered.

A larger proportion of the respondents; 156 (62 %) admitted that they have never been victim of criminal attack in and around the parks while 95 (38 %) of the respondents reported that they had been at the receiving end of one criminal act or the other, when asked of the nature of the criminal acts they have fallen victim of, 43 (45.26 %) of the respondents posited that they have been victim of mugging, affray and fighting while the second highest proportion 30(31.27) claimed that they have fallen victim of theft and robbery, when asked of the time of the day they were attacked 34(35.7 %) of the respondents admitted that the were attacked in the night, this is consistent with the findings of Newton (2004) which posited that crime rates increase significantly in the night when criminals hide under the dark to perpetuate their nefarious activities.

The findings revealed that female sex were the most vulnerable and susceptible as targets of the criminals in and around these parks, this is consistent with crime rational theory by Cohen and Felson (1979) which states that 'criminals will choose

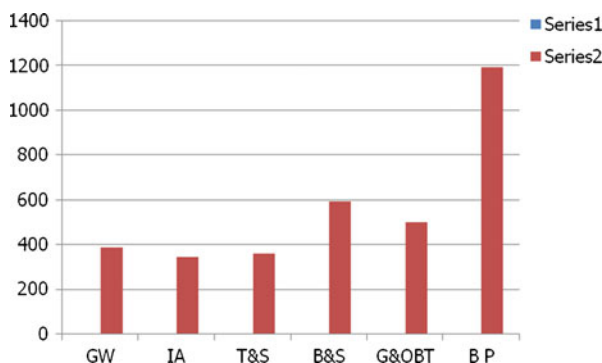


Fig. 1 Showing the statistics of crime incidence in the parks

their targets in a most reasonable and logical manner' it holds that the most vulnerable group among which are the female sex, aged and children, strangers, solitary figure, those who displays opulence etc. are more likely to be victim of criminal acts than the male sex, young and virile people who are in groups (Pain 2000).

A total figure of 101 (40.4 %) of respondents believed that unemployment and poverty are the leading causes of high incidence of crime occurrence in the environment around motor parks in the city. 30 (12 %) of the respondents believed that the high numbers of bad elements among the members of road transport workers is another strong factor that is causing high incidences of crime within and around the parks. 12 (4.8 %) and 11 (4.4 %) believed that the physical state of the parks (lack of perimeter fencing and electricity at night) are also leading causes of crime occurrence within the identified parks.

Twenty (9.2 %) of the respondents believed that lack of provision of adequate security measures in the identified parks is a factor in the high rate of crime within and around these parks.

Conclusion and recommendations

This study examined the spatial pattern of crime incidence in five selected motor parks in Ibadan. It revealed the areal dimensions in the pattern of occurrence of crime. The main aim has been to identify some distinctive spatial pattern of crime occurrence in selected motor parks in Ibadan and to test whether there are significant variations in the nature of these crimes across the parks, pattern of their occurrence and socio-demographic factors associated with the incidences of these crimes.

The study showed that there is homogeneity in the nature of crime type prevalent across the parks while it is equally discovered that there is significant areal differentiation in the incidences of crime in these parks, the study also revealed that the risk of becoming a crime victim are heightened as a female, minor, aged and as a solitary figure, moreover it is found that the risks of attack are higher at night than at any other time this is consistent with findings from previous studies (Loukaitou-Sideris 1999; Barintingham and Barintingham 1995).

The findings of this study offer insight into problems associated with the location, maintenance and management of bus stops/motor parks in Ibadan, it also provide scientific analysis into the burgeoning problem of increasing wave of crime in and around these parks. There is a need to evolve the combination of 'home grown' and industry based best practices from other clime; [for example changing the design and construction of these parks to help in parks to in 'designing crime out'(Pain 2000)] in maintaining public transit infrastructure, Government should allow public/private/participation (PPP) in the construction and management of these facilities, it is equally important to improve security surveillance in and around these parks while there is need to create enabling environment for business growth and job creation to reduce the unemployment figure.

Limitations

As with any other research there are some limitations encountered during the study. First this study was based on information collected both from the State Nigeria Police

Command and through survey, crime statistics based on police records in Nigeria is difficult to access and sometime can prove unreliable. The data collected from the survey was from five selected parks, it may not provide the general picture of the situation in and around all the parks in the city. Nonetheless the findings gotten from this research will prove useful in further research in this field of study.

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