

Effect of Neighbourhood Security on Property Value in Bida, Niger State

Umar, A. S.

Department of Estate Management and Valuation, School of Environmental Studies, Federal Polytechnic, Bida, Niger State
saidumadakikamala@gmail.com

It is a known fact that, crime prevents all types of investments from thriving including real property investment. This paper seeks to examine the effect of neighbourhood security on property values in Bida, Niger state. The total number of houses in the nine neighbourhoods chosen for the study is estimated to be 6478 out of which 378 were sampled at random. Descriptive and inferential statistics was used in analysing the data. The result of chi-square statistics shows that the types of crime committed across the study area statistically deferred. The mean ranking of crimes commonly committed across the study areas, suggests rape and theft as the most prevalent crimes. The rental trend shows variation on the average rent of properties across the study areas. The result of correlation analysis between crimes and rental value shows that theft and rape maintain strong negative correlation with rental value. The result of regression analysis shows that crimes significantly influenced rental value of properties. The study recommends; establishment of community effort in combating crime, establishment of neighbourhood security operatives, development of an efficient security mechanism among other things.

Keywords: Security, Neighbourhood, Neighbourhood security, Property, Rental value.

Introduction

Security is described according to United Nations (UN – Habitat, 2007) as being centred on communities and assets that are free from crime, violence and related fear of destruction. It involves the act of protecting life and property of a country, against attack, insurgent or any form of danger. Blunkett (2004) described security as the key which involves building a safe environment by way of protecting communities and by making the communities more confident of being free from attack or insurgent for the wellbeing of people.

Security in Nigeria, like other nations of the world, is seen as a gateway to peace, stability and development. The security of life and property as well as the wellbeing of the people being primary responsibility of authority in any society, hence, most government throughout the world invest heavily on security. The constitution of Federal Republic of Nigeria, stated in

Section 14 (1)(b) of the 1999 constitution that “*security and welfare of the people shall be the primary purpose of government*”. Apparently, security transcends beyond mere maintaining social order and security forces matter (Alobi, 2009).

Neighbourhood on the other hand, can be seen as the vicinity in which people live. Onibokun (1973) cited in Oladapo and Adebayo (2014) defined neighbourhood as the psychological, physical and social nature which are associated with the house-dwelling and the tenant occupancy. Schuck and Dennis (2006) opined that, neighbourhood is a spatial unit which allow personal, social interactions to occur.

Neighbourhood security is concerned with human-induced danger that threatens the safety, conveniences and wellbeing of a neighbourhood or community at large. It therefore, requires the application of safety measures and rudiments that promote

secured and safe environment. Neighbourhoods with good living conditions are liveable neighbourhoods or communities. Jarvis (2001) stated that liveability encompasses elements of a home, neighbourhood and metropolitan area that contribute to safety of lives and properties, economic opportunities and so on. Conversely, the economic satisfaction of getting value for the rent paid on a property may be in jeopardy if substantial satisfaction, which includes security against crime, is not to be found. Thus, the quality of environment in terms of the social, security and physical attributes is a strong determinant of the degree of utility derivable for the use of residential property in a neighbourhood which is reflected in the rental value. Consistently, neighbourhood security has a significant influence on the value of property in any location.

The study areas are handy examples of the atrocious conditions of most neighbourhoods in Nigerian cities, where municipal service such as security is absent. This scenario does not only pose a threat, but its rippled economic and social consequences manifesting in; drop in occupancy rates, low rent, vulnerability to trespass and prolonged turn over. It is against this backdrop the study seeks to examine the effect of neighbourhood security on property value in selected neighbourhoods of Bida, Niger State.

Study Area

Bida is the capital city of the *Nupe* kingdom. It is located on the heart of the basin that forms the valley of River Niger and Kaduna. Bida lies on latitude 90⁰N and longitude 60⁰E. It is in Niger state formerly Niger province in Northern Nigeria. Bida usually experience an average low and high temperature of between 26⁰C and 33⁰C respectively. It has a self-sufficient agricultural economy; hence, agriculture is the dominant occupation of the people in the area. The town has been experiencing growth over the years like every other urban settlement in Nigeria with enormous challenges of inadequate urban infrastructure, neighbourhood insecurity

and unemployment. It is presumed that; these environmental conditions could be an impediment to rental value of residential properties in the selected neighbourhoods.

Neighbourhood Security and Property Value: The Empirical Review.

Several factors such as structural, location and neighbourhood factors have been recognized as factor influencing the property value; among which crime is one of the neighborhood factors that affects the rental value. Globally, several studies have identified vandalism, graffiti, arson, theft and burglary as form of neighbourhood crime that influences property value (Skogan, 1990; Gibbons 2004; James *et al.*, 2003; Petras, 2007; Bowes & Ihlanfeldt, 2001). Locally the existing studies have therefore identified armed robbery, raping, burglary, trespass, vandalism, politically motivated killing as major insecurity or crime that have influence on the property value (Aluyor, 2005; Bello, 2011).

Petras (2007) on the result of study carried out in Europe discovered that fear of crime create insecurity to property and inhabitants, therefore people are not satisfied with high crime neighbourhood and there is negative relationship between property value and crime. Skogan (1990) found that crime such as vandalism, graffiti and arson have a greater deleterious impact on house prices in London than burglaries. Perception of neighbourhood safety may be very important since crimes such as vandalism and graffiti are very visible signals of community disorder. Property value can be reduced by the perception that an environmental or neighbourhood hazard exist whether the market perception is rational or not (Patchin, 1991).

Bowes and Ihlanfeldt (2001) analysed the effect of crime per acre on property value in both Atlanta and Boston. The result of regression analysis suggest that crime impacted on the value of urban residential property value and it is further discovered that at every level of reduction in urban crime per acre, the residential property value increases in Boston, vice versa, and

while additional crime per acre in Atlanta decreases property value by approximately 3%.

Gibbons (2004) in the study carried out in London found out that 3.8% decrease in property value whenever additional five crimes per year is committed in London. The study found out that crime in London has significant negative influence on property value. Sampson and Raudenbush *et al.* (2004) in the study of analysis of factors underlying perception of neighbourhood crime or disorder, the result of regression analysis showed that race and poverty is stronger predictor of perceived neighbourhood disorder than the observed indicator of true neighbourhood disorder such as litter, rug paraphernalia, graffiti and security fencing.

Islam (2012) examined the impact of neighbourhood characteristics on property price in Canada. Several multiple regression models were estimated using average assessed house prices of 2008 as the dependent variable and a set of neighbourhood characteristics including crime incidences of 2007 as independent variables. Although adjacency to ravines and household income are positively correlated, they both independently contribute to house prices. Crime variables, in general, have negative impact on house prices but their impacts were negligible, and a model without these variables did not reduce the efficacy of the estimated model.

James *et al.* (2003) studied the cross-sectional relation between property value and proximity to sex offender in Ohio. Adopting a single year data, the study finds out the significant difference in property value up to 3rd mile from sex offender location. They conclude that the differences reflect that sex offender tend to live in neighborhood where property price is lower.

Devin and Jaren (2001) examined the crime influence on the property value in US. The study focus solely within the metropolitan

area and a cross sectional analysis was employed for the study. The study analyzed the information on changes crime rate and property value through correlation analysis, the study discovered statistically significant association between crime rate and property value. Therefore, the estimated degree of elasticity of property value to change in crime rate thereby ranges between 15%-35%, and therefore decreasing in crime leads to increase in property value.

Locally, in Nigeria most of the crimes committed includes professional crimes such as business and white-collar crimes such as financial fraud, others include armed robbery, burglary, trespass, vandalism, politically motivated killing (Aluyor, 2005). Bello (2011) studied the impact of urban crime on property value in Akure, the study used both descriptive and multiple regression analysis to model the impact of crime on property value. The result of mean descriptive analysis showed that the residents in the neighborhood have negative perception living in crime vulnerable areas and the rate of crime is negatively related to property value. The study identifies crime, number of toilets, and area of property as most explanatory influence on rental value. This study will present the influence of crime on property value in low income urban neighbourhoods and also reveal the variation in crimes and property values across the study areas.

Methodology

Data on property rental value for a period of 2007 - 2016 was sought directly from occupants and the Estate Surveyors practising in the study area. Property attributes and neighbourhood data as identified in the literature were sought directly through observation. Number of households in Bida (6478) was directly sought from National Population Commission and National Bureau of Statistics. Data on crimes committed between the periods of 2007 - 2016 in the study area were obtained from the Nigeria Police Force, Bida Area Command.

Table 1: Number of Required Population

Neighborhood	Projected Population	Household Size in Bida	Household Population
Dokoza	9146	9	1016
Masaga	10230	9	1136
Low cost	6730	9	748
GRA	4923	9	547
Umaru Majigi	2312	9	257
Poly junction	3291	9	366
Gbaji	8231	9	915
Masaba	9231	9	1025
Ndazabo	4213	9	468
Total	58302	9	6478

Source: National Population Commission (2006) and National Bureau of Statistics (2016 Projection)

Based on the sample size model applied to the study population of 6,478 households, the sample size of 378 approximately was derived and sampled at random. The method of data analysis required for the study is both descriptive and inferential methods. Descriptive analysis comprised of mean to examine the condition of neighbourhood security attributes and linear graph is used to establish the linear trends in rental value of properties. Inferential statistic is used in chi square, correlation and regression to examine; the types of crimes committed, strength of relationship and the effect of the security on rental value.

Results and Discussion

Socio-Economic Characteristics of Respondents in Bida.

The survey shows that the major occupation of the respondents is civil service and agriculture. The income level of

respondents, shows 62% in Dokoza, 51% in Low cost, and 60% in Ndazabo received monthly income of N41,000-N60,000, the study further shows that 68% in Masaga, 60% in Umaru Majigi and 69% in Masaba are receiving monthly income of N18,000-N40,000. 69% and 66% in Poly junction and Gbaji also receiving monthly income of N61,000-N80,000. 88% in GRA are receiving monthly income of N81,000 and above.

The state of neighbourhood security in Bida shows that 40.07% of crime committed is rape and 36.58% is theft. Burglary and arson accounted for 10.90% and 7.20% crimes committed across the study areas. Vandalism and thurgery accounted for the lowest types of crime committed at 2.53% and 2.72% respectively. This therefore indicates that rape and theft are the common types of crimes committed in Bida.

Table 2: State of Neighbourhood Security in Bida

Neighborhood	Theft	Burglary	Rape	Arson	Vandalism	Thuggery	Total
Dokoza	23	5	30	5	2	1	66
Masaga	22	3	31	2	1	1	60
Low cost	24	8	23	2	1	1	59
GRA	34	6	16	1	-	-	57
Umaru Majigi	23	2	15	5	2	3	50
Poly junction	14	3	27	7	2	1	54
Gbaji	19	6	29	3	2	3	62
Masaba	10	8	19	10	2	2	51
Ndazabo	19	15	16	2	1	2	55
Total	188	56	206	37	13	14	514
%	36.58	10.90	40.07	7.20	2.53	2.72	100

Chi-Square Test of Significant Difference in the Types of Crime Committed across the Study Areas

X^2 -calculated	=	82.52
Degree of freedom		40
X^2 -tabulated	=	55.758

The result of chi-square statistics shows that the types of crime committed across the study area statistically deferred as the calculated chi-square at 82.52 is greater than tabulated chi-square (55.76) at 40 degree of freedom and 0.05 level of significance. This suggests that there is significant difference in the types of crime committed across the study areas.

Trend in Rental Value of Residential Properties across the Study Areas

The average rental trend shows annual increase in rental value of tenement property. Rental value in Masaga and Gbaji are very low due to poor neighbourhood security condition. While, rental value in Poly junction shows a very high trend, as a result of increase in demand for accommodation by federal polytechnic staff and students. The annual average rental value in poly junction is far higher than any other at N49,600. This is followed by Ndazabo at N47,100. The least average rental value is found in Masaga and Gbaji at N12,000 and N14,650 respectively. Similarly, the annual average rental value of 1 B/R properties in poly junction is far higher than any other at N74,000. Followed

by Low cost at N72,500 and Ndazabo at N72,000. The least average rental value is recorded at Masaga and Umaru Majigi at N38,900 and N40,800 respectively. Regarding 2B/R properties rent information could not be established adequately in Masaba, Masaga, Umaru Majigi and Gbaji. However, there is evidence of high rental trend in GRA, such that its annual average rental value is far higher than any other at N105,500 this is closely followed by Low cost and Poly junction at N98,000 and N92,500 respectively. The least average rental value is found in Dokozda at N71,500.

The result of analysis of variance for tenement properties shows that the F-statistics at 46.9835 is statistically significant as the p-value at 0.00002 is less than 0.05level of significance. For 1B/R properties, the result shows that the F-statistics at 12.1257 is statistically significant as the p-value at 0.0004 is less than 0.05level of significance. For 2B/R properties, the result of analysis of variance shows that the F-statistics at 4.97478 is statistically significant as the p-value at 0.0021 is less than 0.05level of significance. These results suggest that there is statistically significant difference in rental value of tenement, 1B/R and 2B/R properties across the study areas.

Table 3: Analysis of Variance in Rental Value across the Study Areas

	Source of Variation	SS	Df	MS	F	P-value	F crit
Tenement	Between Groups	1.69E+10	6	2.82E+09	46.9835Hi	0.00002	2.2464
	Within Groups	3.78E+09	63	59930952			
	Total	2.07E+10	69				
1B/R	Between Groups	1747595	7	2496564286	12.1257	0.0004	2.1396
	Within Groups	1482400	72	205888888.9			
	Total	3229995	79				
2B/R	Between Groups	716700	4	1791750000	4.97478	0.0021	2.5787
	Within Groups	1620750	45	360166666.7			
	Total	2337450	49				

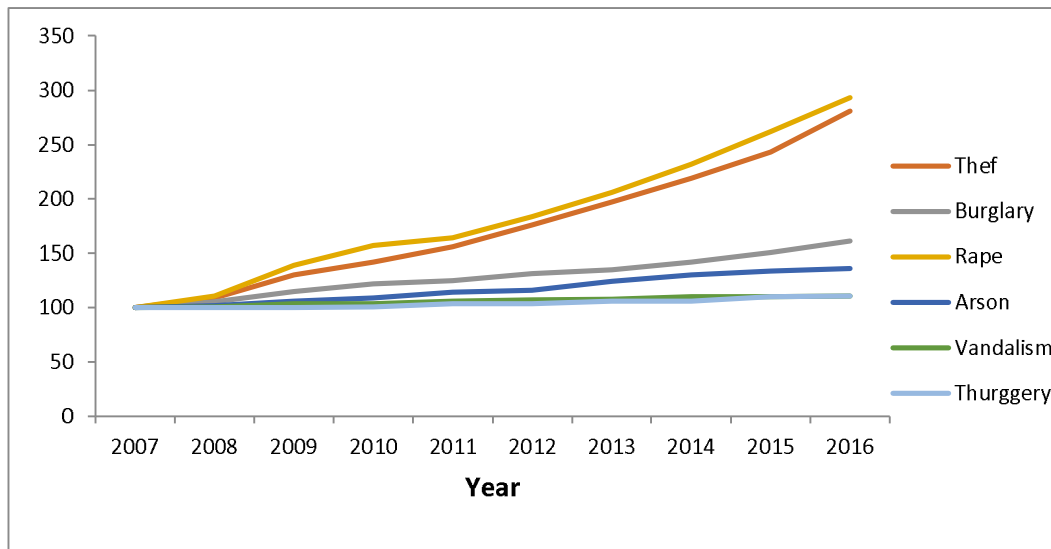


Figure 1: Neighborhood Security Index in Bida

The neighbourhood security index in Bida is presented in Figure 1. The trend shows that rape and theft are the most prevalence form of crime experienced in Bida. Residence attributed this progressive increase of rape and theft to influx of population, idleness and poor economic condition. The number of cases related to burglary and arson are increasing gradually, increase in burglary is as a result of high-level theft since, advanced form of theft is burglary.

Result of Correlation Analysis between Crime and Rental Value of Residential Properties across the Study Areas.

The result of correlation analysis between crimes and rental value of tenement shows that theft and rape maintain strong negative correlation with rental value at -0.856 and -0.621 respectively. This shows that theft and rape negatively relates to rental values. All other forms of crimes also maintained negative insignificant relationship with rental value. Similarly, the result of correlation analysis between crimes and rental value of 1B/R property revealed that theft and rape maintain strong negative correlation with rental value at -0.756 and -0.821 respectively. This also shows that there is negative significant relationship between rent and theft and between rent and rape. All other forms of crimes also maintained negative insignificant relationship with rental value and, the result of correlation analysis between crimes and

rental value of 2B/R shows that theft and rape maintained strong negative correlation with rental value at -0.766 and -0.871 respectively. An indication that theft and rape negatively related to rental values. All other forms of crimes maintained negative insignificant relationship with rental value.

Result of Regression Analysis between Crimes and Rental Value of Tenement Properties across the Study Area

The result shows that, 81.1% variation in rental value can be explained by the occurrence of crime. Theft, rape and thuggery significantly influenced rental value, such that an increase in level of theft, rape and thuggery by 1% significantly reduces the rental value of tenement properties by 2.4% 12.1% and 82.8% respectively. Vandalism and arson showed a negative insignificant influence on rental value such that an increase in level of vandalism or arson by 1% reduces the rental value of tenement property by 4.6% and 34.1% respectively. For 1 B/R, the result indicated that 66.4% variation in rental value can be explained by the incidence of crimes. Theft, rape and arson significantly influenced rental value, such that an increase in level of theft, rape and arson by 1% significantly reduces the rental value of 1B/R property by 96.2%, 11.4% and 32.3% respectively. Burglary, Vandalism and thuggery showed a negative insignificant influence on rental value such that an

increase in level of vandalism, burglary and thuggery by 1% reduces the rental value of IB/R property by 1.7%, 19.9% and 0.1% respectively. Lastly, result for 2B/R properties revealed that 77.5% variation in rental value can be explained by the incidence of crimes. Theft, rape and thuggery significantly influenced rental value, such that an increase in level of theft, rape and thuggery by 1% significantly reduces the rental value of 2B/R properties by 2%, 34.4% and 77.5% respectively. Burglary, vandalism and arson showed a negative insignificant influence on rental value such that an increase in level of burglary, vandalism and arson by 1% reduces the rental value of 2B/R properties by 7.4%, 11% and 29.8% respectively.

The regression model for rental value of tenement, 1 B/R and 2 B/R properties are significant as the p-values at 0.022, 0.016 and 0.007 are respectively less than level of significance at 0.05. The models are therefore fit for purpose of prediction and can be used to predict the effect of crime on the property value in the study area.

Summary of Findings

The study revealed that property value in Bida expressed negative relationship with level of crime and there is high crime index on theft and rape thus; supersede other forms of crime in the study area. The ranking opinion of respondents also identified and ranked, theft and rape as first

and second most prevalent crimes across the study areas except in Ndazabo, Masaba and Low cost where level of thuggery, arson and burglary respectively came second. The glaring effect of the security situation on rental values confirms that crimes significantly influenced the rental value of tenement, 1B/R and 2B/R by 81.1%, 66.4% and 77.5% respectively across the study areas. Though, despite the peculiar security situation in Bida, there is steady increase in the rental value of 1B/R and 2B/R apartment progressively in Poly junction and GRA, overlapping other locations. Other complimentary factors of neighbourhood security situation identified in the study areas include; over population of higher institutions of learning particularly federal polytechnic Bida, poor economic condition, idleness, low level of education among others.

Conclusion

The state of security of a community is determined by the level of crimes committed within the neighbourhoods. The rental values of properties are affected by the risk of crimes in the neighbourhood, because security of the neighbourhood is an important requirement for letting to take place. The study inferred that the negative relationship observed between rental value and level of crimes affect residential property investment. Thus, there is soaring pressure of insecurity on property values.

Table 4: Test of Significance of the Regression Model

Model		Sum of Squares	Df	Mean Square	F	Sig.
Tenement	Regression	.142	3	.047	7.005	.022 ^b
	Residual	.041	6	.007		
	Total	.183	9			
1B/R	Regression	.118	3	.039	8.121	.016 ^b
	Residual	.029	6	.005		
	Total	.147	9			
2B/R	Regression	.058	3	.019	11.209	.007 ^b
	Residual	.010	6	.002		
	Total	.069	9			

Recommendations

1. Establishment of community effort in combating crime will to a great extent improve the level of security in the study area and provide an enabling environment for property investment. Community effort will provide opportunity for youths and students in Bida to give information and help track criminals within their mix who are members of illicit groups and perpetrators of crimes particularly rape and theft.
2. Investors in the study areas should be encouraged to have neighborhood security operatives for combating crime. They could also incorporate personal security devices in their properties at the conceptual and development stage, so as to create a form of alarm during attack by the criminals. This will add to building cost though, but no doubt will be an effective tool in combating crime, guarantee user satisfaction, increased demand and rental value.
3. There is need for urban rehabilitation in the study area to prevent activities of hoodlums. This can be achieved by developing a good renewal scheme that will accommodate safety, aesthetic, coherent and unity in physical development.
4. The Federal Polytechnic, Bida and other sister institutions in the study area who are the basis of influx of students into the community should ensure proper scrutiny of potential candidates for admission into the institutions to avoid a situation where our institutions will become a common ground for breeding criminals.

References

- Alobi, L. (2009). Security Surveillance; Preparing Cities to Face Security Challenges. Paper Presented at the 40th Annual Conference of the Nigerian Institute of Town Planners (NITP) on *Planning Nigerian Cities for Increased Communication and Security*. Awka, Anambra, Nigeria
- Aluyor, G. B. (2005). Performance Evaluation of the Nigeria Police Crime Prevention in Urban Centres. *Journal of Land Use and Development Studies*, 1(1) 84-89.
- Bello, V. A. (2011). The Impact of Urban Crime on Property Value in Akure, Nigeria. FIG working week 2011.
- Blunkett, D. (2004). Confident Communities in a Secure Britain, *Home Office Press Release* (237/2004).
- Bowes, A. & Ihlanfeld, K. (2001). Identifying the Impacts of Police Station on Property Value. *Journal of Urban Economics*, (50) 1-25.
- Devin, G. P. & Jaren, C. P. (2001). Crime and Property Values: Evidence from the 1990s Crime Drop. *Journal of Regional Science and Urban Economics*, (42), 177-188.
- Gibbons, S. (2004). The Cost of Urban Property Crime. *The Economics Journal*, 114, 441 – 463.
- Islam, S. (2012). Impact of Neighbourhood Characteristics on House Price. *Conference Proceeding of ASBBS*. 19(1), 443-451.
- James, L. E., Keneaeth, J. & Joseph, W. (2003). The Effect of Proximity to a Registered Sex Offender's Neighbourhood Residence on Single-Family House Selling Price. *The Appraisal Journal*, 71(3) 253-265.
- Jarvis, H. (2001). How Urban Dwellers Live and Work the Social-Environment Interface. Paper Presented at the *Housing Studies Association Spring Conference University of York*. 18–19 April, 2001. <http://www.york.ac.uk/inst/chp/hsa/papers/jarvis.pdf> (accessed 25 July 2006).
- Oladapo, R. A., & Adebayo, M. A. (2014). Effect of Housing Facilities on Residents' Satisfaction in Oshogbo, Osun State, Nigeria. *Covenant Journal of Research in the Built Environment*, 2(2), 2-14.
- Petras, T. L. (2007). *Measuring the Effects of Perceptions of Crime on Neighbourhood Quality and Housing*

- Markets*. PhD Thesis, Graduate School of Ohio State University.
- Raudenbush, S. W., & Sampson, R. J. (2004). Seeing Disorder, Neighbourhood Stigma and the Social Construction of Broken Windows. *Journal of Social Psychology*, 67(4), 319-342.
- Schuck, A. & Dennis, R. (2006). *Promoting Safe and Healthy Neighbourhoods: What Research Tells Us About Intervention?* The Aspen Institute.
- Skogan, W. G. (1990). *Disorder and Decline: Crime and Spiral Decay in American Neighbourhood*, New York: Free Press.
- UN - HABITAT (2007). *Enhancing Urban Safety and Security: Global Report on Human Settlement 2007*. New York: United Nations Publication.