

RESIDENTS' PERCEPTION OF THE EFFECT OF DUMP SITE ON RESIDENTIAL RENTAL VALUE IN OLUYOLE LOCAL GOVERNMENT, OYO STATE, NIGERIA

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Abstract

The rental value of individual properties does not only depend on the physical characteristics but also on the environment that surrounds a building. Meanwhile, improper solid waste disposal reduced of rental value of properties. This study, therefore, examined the effect of dumpsite on residential rental value in Oluyole LGA Oyo state, Nigeria. A cross-sectional survey research design was adopted, relying mainly on primary and secondary sources of data. Using systematic random sampling technique, questionnaires were administered to 251 households in the selected houses within 200 meters radius of five (5) purposively selected dump sites – Olomi, Podo, Odo-Ona, Ile-Eja, and Dalute – all in Oluyole LGA. The selection of the dumpsites was based on the magnitude and its nearness to residential houses in the study area. Data were analysed using both descriptive and inferential (Pearson's Chi Squared distribution) statistics at p value ≤ 0.05 , while the qualitative data were content analysed. The study revealed that 46.6% of the respondents were males and 53.4% females. Majority (59.4%) of the households were tenants, while 29.5% were owner-occupiers. There was a negative relationship between annual rents paid by tenants of similar apartments with increasing distance from dumpsite. The observed variation in annual rent is significant at 5% significant level for all residential housing types ($p < 0.05$ for single room, room and parlour, 2-bedroom flat and 3-bedroom flat). The paper recommended a more proactive enforcement of sanitary laws and regulations of locating a dumpsite of 500 meter away from the residential environments.

Key Words: *Rental value, Dump site, Waste management, Residential building, Oluyole estate*

Introduction

Domestic solid waste generation continues to increase world-wide in tandem with increasing level of consumption. As such, solid waste management, which involves a systematic control of generation, storage, collection, transportation, separation, processing,

recovery and disposal of solid wastes (Rogdgers, 2011) has become increasingly difficult. The complexities of waste which modern civilization produce is directly related to the living standards, socio-economic and cultural attributes of that particular environment (Hoornweg, 1999).

In Africa, particularly in Nigeria, rapid urbanization owing to economic growth and industrial activities has put pressure on the land within the cities and their neighbourhoods. There are increasing cases of indiscriminate dumping of solid waste resulting from the increasing urban population with an overwhelming influence on the ability of the municipal authorities to manage such wastes (Ajadike, 2001). In most urban centres in Nigeria, solid wastes are disposed of by dumping in open areas, which encourages the growth of organisms that can transmit diseases to people living around that vicinity (Peter *et al.*, 2016; Igbara *et al.*, 2016). This situation is worsened as these wastes in open dumps are sometimes burnt, which in turn, produces a form of air pollution.

Generation of dumps in Ibadan is increasing rapidly, as the amount of waste generated each year in Ibadan is increasing (Nest, 2001). Illegal dumping of waste and the concomitant environmental concerns continue in several areas of the city of Ibadan (Nest, 2001). The amount of resources invested in solid waste management in Oyo State is dwarfed by the population it caters for (Akintola, 2005). The location of dumpsite is usually at the edge or the peripheral area of the city or some few kilometres away from the city. According to Ontario environmental protection act of 1990, each operating landfill shall have an on-site operational maintenance buffer zone or set-back of 500 to 600 meters identified on the certificate of approval. However, Smith (2007) argues that some dumpsites earlier located far away from the main settlement have been taken over by development. It is not uncommon to find dumpsite enclosed by residential and or commercial buildings. This can create

unsanitary conditions, environmental pollution and outbreaks of vector-borne disease that is capable of discouraging individuals from residing in affected areas.

Meanwhile, there is a link between the waste generation and property rental value as the value of individual properties usually depends on the property's unique attributes, each of which creates utilities or disutility to individuals (Igbara *et al.*, 2016). As rightly opined by Oloke *et al.* (2013), rental value does not only depend on the physical characteristics of a building but also the environment that surrounds the building. Njoku (2005) notes that the impact of improper solid waste disposal ranges from depreciation of aesthetic value, loss of economic value, change of property use, development of slum, and reduction of rental value among others. While research efforts have concentrated more in the area of sanitary landfills, stigma and industrial land values (Guntermann, 1995), assessing the impacts of environmental contamination on Commercial and industrial properties (Ihlanfeldt, and Taylor, 2002), the effect of hazardous waste on property value in Lagos metropolis (Bello, 2007), that of the property rental value have not been adequately taken care of in the literature..

Against this backdrop, this study therefore examines the effect of dumpsite on residential rental value in Oluyole LGA of Oyo state, Nigeria, focusing on individual housing types in order to proffer solution to the prevailing housing market value challenges.

Theoretical Framework

This article is anchored on the Theory of Distance Decay, which states that the interaction between two locales declines as the distance between them increases. Once the distance is outside of the two

locales' activity space, their interactions begin to decrease (Nekola and White, 1999). Distance decay refers to the decrease or loss of similarity between two observations as the distance between them increases. A negative relationship between distance and similarity is implicit in several ecological and evolutionary phenomena. Distance decay is a phenomenon observed between locations, activities or ethnic groups – the further apart they are, the less likely it is that they will interact very much. Geographically speaking, distance decay can be explained by Waldo Tobler's First Law of Geography (1970). This is the assertion that "everything is related to everything else, but near things are more related than distant things," and can be applied to a range of different geographical concepts, from human settlements, to geolinguistics, to ecology. Distance decay is also evident in town/city centres. It can refer to: the number of pedestrians getting further from the centre of the Central Business District (CBD); the street quality decreasing as distance from the centre increases as well; the quality of shops decreasing as distance from the centre also increases; the height of buildings decreasing as distance from the centre increases; and the price of land decreasing as distance from the centre increases, as well as the land value decreasing as distance from the dumping sites.

In the centre of the city, there are likely to be more businesses, better public transit, better sanitation services, and better quality roads. At the same time, there are not likely to be dumping sites or landfills. As you move further from the city centre, these services begin to break down – businesses give way to residential areas, public transit runs less frequently, septic tanks and wells replace sewage

systems and municipal water, and roads aren't as well-maintained. The further you move away from the urban area, the more evidence this decay becomes. By application, the study uses the theory to evaluate the effect a dumpsite will have on rental value.

Literature Review

The factors affecting property values are not necessarily inherent in the commodity, good, or service to which it is ascribed; rather, it is created in the minds of the individuals who make up the property market (Appraisal Institute, 2008). The literature contains numerous studies on factors affecting property values. Among the factors identified are, age (Ihlanfeldt and Taylor, 2002), location (Ihlanfeldt and Taylor, 2002; Kauko, 2003; Oyebanji, 2003; Peter *et al.*, 2016), neighbourhood characteristics (Oloke *et al.*, 2013), economic activity (Megbolugbe, 1989; Joslin, 2005), population and transport (Goldberg, 1970; Gwande and Jenkins-Smith, 2001; Oloke *et al.*, 2013).

Quality of the environment is a factor that affects rental value. Previous studies have investigated the related issue of the effects of a dumpsite on surrounding property values (Bleich *et al.*, 1991; Reichert *et al.*, 1991; Nelson *et al.*, 1992; Guntermann, 1995; Ogban and Akujuru, 2016; Peter *et al.*, 2016). Similar studies have also found that badly contaminated properties reduce the values of nearby single-family homes (Michaels and Smith, 1990; Kohlhase, 1991; Kiel, 1995). Oloke *et al.* (2013) examine the effects of locational characteristics on residential property value in Magodo, Lagos State and concluded that property value does not only depend on the physical characteristics of a building but also the environment that surrounds the building.

Ihlanfeldt and Taylor (2002) estimated hedonic property value models for commercial and industrial properties to assess the possible externality effects arising from sites known to have had hazardous waste releases. They suggest that properties surrounding these sites experience nontrivial reductions in property value as significant price-distance gradients were found for all five of the commercial and industrial land-uses that were considered. More recently, Peter *et al.* (2016) identify factors that influence changes in rental values of residential properties in close proximity to refuse dumpsite. They revealed that majority of the residents selected location as the major factor that influenced changes in rental values of their properties ranking it as the highest.

Adewusi and Onifade (2006) examined the effect of urban solid waste on physical environment and property transaction in Surulere using descriptive statistics. They discovered that rent paid on properties adjoining dumpsite were low compared to similar properties located farther away from dumpsite. They concluded that property transaction rates become very low toward the dumpsite. However, their study focused on the general property transaction and not rental value. In the same vein, investigating the effect of dumpsite on property values in Olusosun neighbourhood at Ojota, Lagos state, Bello (2007) found that property values increased with distance away from dumpsites.

Similarly, Ogedengbe and Oyedele (2006) show a relationship between the closeness of dump sites and the value of rental properties in Ibadan. Amietsenwu and Ajayi (2010) examine occupants' satisfaction and rent paid for residential properties within three neighbourhoods

(Olusosun, Abule-Egba, and Solous) close to waste dump sites and Ketu neighbourhood (not close to dump site) in Lagos Metropolis. The Relative Satisfaction Index of the occupants living close to the dump sites (Olusosun, Abule-Egba and Solus) showed lower level of satisfaction. A comparison of the three neighbourhoods with Ketu, a neighbourhood far away from any dumpsite in its vicinity showed that the three neighbourhoods close to waste dump sites are significantly different from it (Amietsenwu and Ajayi, 2010). They concluded that the closer the property to the dumpsite, the lower the satisfaction derived.

Bello (2008) used a two-staged hedonic model to examine the residents' willingness to pay for better environmental services at two neighbourhoods in Akure, Nigeria. He identified household income, distance from the refuse dumpsite and regularity of electricity supply as the major factors that influenced households' willingness to pay for better environmental services. The study recommended economic empowerment of the people, diligent consideration in the location of dumpsite and adoption of public-private initiative in the provision of public infrastructure. However, Bello (2008) did not relate property values with distance from the waste dumpsite as an environmental disamenity.

Conversely, Ready's (2005) study showed a small or non-existent property value impacts from a landfill. The results of three land fill studied showed that, while two of the three landfills had statistically significant negative impacts on nearby property values, the smallest, least prominent landfill did not. Also, in their study of the impact of landfill on

homes near landfill using hedonic regression for houses located near six landfills in Central and Western Massachusetts, Bouvier *et al.* (2000) estimated the effect of each landfill using multiple regression models. No statistically significant relationship was found between landfill and house value in five of the landfills. Focussing on stigmatization with respect to residential properties based on proximity to waste dump site, Ogban and Akujuru (2016) revealed that out of all the attribute associated with waste dump, environmental stigma is the least that affect the value of residential properties close to waste dump.

Most of the previous works, as illustrated in this section, either focused generally on land value or holistically examined the effect of dumpsites on amount of rents paid for specific land use, such as residential housing. However, this study examined the variations in rents for different categories of residential housing types.

Study Area

Ibadan city is situated approximately between Longitude 7°2' and 7°4'E and latitude 3°35' and 4°10'N of Greenwich Meridian. It is at an altitude of 237.3 metres above the sea level and distance of about 145km north-east of Lagos and 659km south-west of Abuja. The general land use pattern of the Ibadan metropolitan area shows a pure residential use of urban Ibadan and agricultural use for rural Ibadan. According to Ayeni (2007), residential land use is the most predominant among all land uses in the built up part of Ibadan. In his analysis, the metropolitan area refers to the urban areas only and some parts of the rural area. Ayeni (2007) noted that the total land area

devoted to residential use amounted to 22,187.5 hectares (221.875km²).

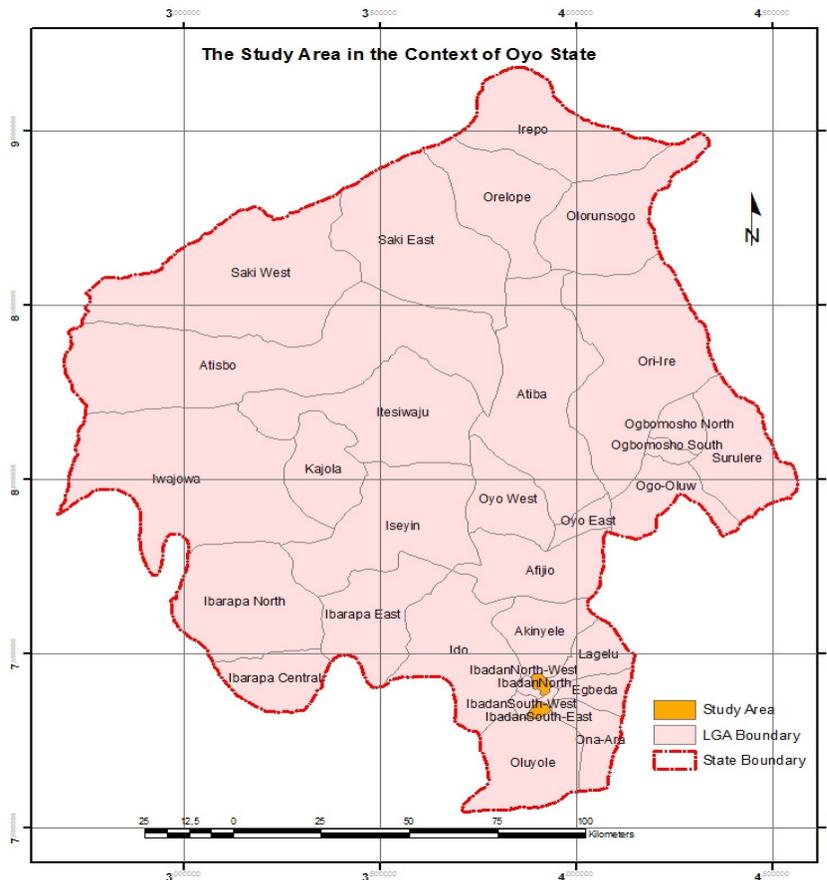
Generally, housing in Ibadan, whether formal and or informal, has spatial dimensions. This is apparent in housing attributes which vary according to observed locations of houses within the city. Housing in Ibadan may be divided into three residential districts according to location and age of buildings and the availability of housing amenities. These are the traditional or core area, the transitional and the modern areas (Agbola, 1994).

Ibadan, just like most cities in Nigeria, is faced with the twin problems of population increase and rapid expansion. These phenomena have brought increasing strain on urban infrastructure facilities. One area in which this strain has become most obvious is in waste management where the existing system appears to be incapable of coping with the mountain load of waste generated and heaped on the surface (Afonja, 2016). As the metropolitan area of Ibadan continues to witness series of developmental activities, environmental risks arise from a wider array of sources which include air pollution from vehicles; household energy use; industrial and power plants; indiscriminate dumping of solid waste; water pollution from solid wastes and untreated sewage; and traffic congestion. These problems have more direct and immediate negative impacts on human health, safety and rental value.

Currently, government agencies manage the dump sites in Ibadan, none of which is sanitary (Oluwarore, 2016). These sites get overfilled from time to time and can be exceptionally difficult to manage during the rainy season. Trucks get stuck and the roads inside the disposal sites become impassable. There is,

however, talks of franchising the management of the disposal sites to

private contractors for greater efficiency (Oluwarore, 2016).



Methodology

This study adopted a cross-sectional survey research design, relying mainly on primary and secondary sources of data. A purposive sampling technique was used to select five dump sites – Olomi, Podo, Odo-Ona, Ile-Eja, and Dalute - all in Oluyole LGA within 200 meters radius, though not necessarily approved by the local government. The selection was based on the magnitude of the dumpsites as well as nearness to residential houses in the study area. A copy of pretested questionnaire containing the socio economic characteristics of the people, housing characteristics, household solid waste disposal profile and the effect of dumpsite on housing was

comprehensively administered on 256 households' resident within buffer zone. Global Positioning System (GPS) was used to take the coordinate of the dumpsites with respect to the location of the buildings. A section of Focus group discussion was also held. Data were analysed using both descriptive and inferential (Pearson's Chi Squared distribution) statistics was used to analyse the data at p value ≤ 0.05 , while the qualitative data were content analysed.

Results and Discussion

Socio-economic and Demographic Characteristics of Households

The study revealed that 46.6% of the respondents were male and 53.4%

females. Age distribution shows that people within the age brackets of 21 and 30 years, and those between 31 and 40 years dominated the area with 29.5% and 30.3%, respectively while those within the age bracket 41-50 years accounted for 22% (Table 1). This shows that larger percentage of the respondents were in the working age group. Religion distribution showed that 44.2% of the sampled households were Christians and 45.8% were Muslims.

On account of the educational status of the respondents, majority (37.5%) had tertiary education at either the polytechnic or the university. The study also revealed

that those respondents that had primary and secondary accounted for 15.1% and 12% while 28.3% had informal education. The result which indicated a high positive response with understanding on the part of the (Table 1). Occupational status of the respondents revealed majority (26%) of the respondents were traders, 24.3% were self-employed and 12% were civil servants, with 17.5% of the respondents being students. About 13.9% 1.2% and 4.4% were artisan, unemployed and retired respectively. This further implied that the respondents would be favourably dispose to answer any question posted them.

Table 1: Socio-Economic Characteristics of Households Living Close to Dump Site

Variables	Frequency	Percentage
A. Sex		
Male	117	46.6
Female	134	53.4
B. Age		
Less than 20 Years	16	6.4
21-30 Years	74	29.5
31-40 years	76	30.3
41-50 years	55	21.9
51-60 years	15	6.0
60 and above	15	6.0
C. Religion		
Christianity	111	44.2
Islam	115	45.8
Traditional	18	7.2
D. Educational Attainment		
Informal Education	71	28.3
Primary Education	38	15.1
Secondary Education	30	12.0
Tertiary Education	94	37.5
Not Applicable	18	7.2
E. Occupation		
Student	44	17.5
Civil Servant	30	12.0
Self employed	61	24.3
Trader	66	26.3
Artisan	35	13.9
Unemployed	3	1.2
Retired	11	4.4

Note: N = 251

Housing Characteristics of Households Living Close to Dump Site

A succinct summary of basic attributes of the sampled buildings is illustrated in Table 2. Investigation revealed that, majority (59.4%) of the households was tenants while over one quarter (29.5%) were owner-occupiers. This shows that households who were tenants were predominantly higher than that of landlords in the study area. About 40.2% of the respondents had a household size (HHS) of more than 5 persons, 32.7% had exactly 5 persons. Those respondents with HHS of 4 and 2 persons accounted for 12.7% and 8% respectively. By implication, the larger number of households has a higher tendency for waste generation.

Furthermore, study were conducted on the attributes of buildings in the study

area, it revealed that 60% were of Brazilian style (face to face), with only 7.2% being built as self-contained. Flats constituted about 30% of the building out of which 16.7% were 2-bedroom and 13.1% were 3-bedroom flats. It implied that the area will be dominated by people with low and medium income (Table 2). On the period of residency of the respondents, it was observed that those respondents who have stayed less than 5 years accounted for 22.3 %. More than one quarter (27.9%) and the largest in the study area had stayed there between 5 and 10 years. Those who have stayed between 11 and 15 years and 20 years above accounted for 23.5% and 25.5% respectively. The longer stay of the respondents may be a significant factor in a clue on variables pertaining to waste generation profile in the study area.

Table 2: Housing Characteristics of Households Living Close to Dump Site

Variables	Frequency	Percentage
A. Tenure Status		
Owner Occupier	74	29.5
Tenants	149	59.4
Others	28	11.2
B. Household Size		
1	7	2.8
2	20	8.0
3	9	3.6
4	32	12.7
5	82	32.7
Above 5	101	40.2
C. Type of Housing		
Face to face	152	60.6
Self-contained	18	7.2
Two bedroom flat	42	16.7
Three Bedroom flat	33	13.1
D. Period of Residency		
less than 5 years	56	22.3
5-10 years	70	27.9
11-15 years	59	23.5
20 years above	64	25.5

Note: N = 251

Household Solid Waste Disposal Profile

Investigation on the household waste disposal profile revealed that 41.0% of buildings were located within 20 metres of the nearest dumpsite, while 13% were located between 21 and 40 metres radius from the dumpsite. Other buildings located within 41 and 60, 61 and 80, 81 and 100 and 100to 200 accounted for 41.1%, 10.8%, 9.6% and 9.2% respectively (Table 3). With respect to method used by the respondents in disposing of their waste, most (56.2%) of the respondents did not have a defined place or method of disposing of their waste, while 38.6% disposed of their wastes in specific sites within their community in the study area. This reveals that, despite the fact that the surveyed residents were living within the 100 metres distance from the nearest dumpsite, the majority (56.2) of them still engaged in indiscriminate refuse dump. As a result, over three quarter (78.9%) of respondents

did not found the designated site for waste disposal convenient while only few (11.6%) found it convenient.

Referring to waste disposal methods, 61.4% of the respondents simply dumped their waste in the open dumpsites, 27.9% of the respondents made use of refuse buckets, while 7.2% of the respondents patronised government waste collectors. This reveals that most of the residents still practice traditional methods of waste disposal, which, most often, are illegal dumping on nearby open ground. This situation can be linked to the fact that most (78%) of the residents claimed not to have access to government waste bin in close proximity. Even those that had access to government waste bins at designated sites had to cover a particular distance to empty their wastes. Investigation on the distance of the public refuse bin to the building ranges from 0-5 metres (12%) to more than 20 metres (6.0%).

Table 3: Household Solid Waste Disposal Profile

Variables	Frequency	Percentage
A. Distance of building to dumpsite		
0-20	104	41.4
21-40	33	13.1
41-60	36	14.4
61-80	27	10.8
81-100	24	9.6
100-200	23	9.2
B. Mode of Waste Disposal		
Irregular/indiscriminate disposal	97	38.6
Disposal in regulated site	141	56.2
No response	13	5.2
C. Perception on the location of dumpsite		
Not convenient	198	78.9
Convenient	29	11.6
Very convenient	5	2.0
No response	19	7.6
D. Distance of the public refuse bin to the building		
0-5 metre	30	12.0
6-10 metre	9	3.6
11-15 metre	6	2.4
20 metre above	15	6.0

Note: N = 251

Effects of Dumpsite on Housing/Rental Value

With respect to the effects of dumpsites on housing or rental value in which respondents were asked to select more than one option, the study revealed areas of negative impact include: unhealthy visual impression (20.3%); traffic congestion (58.2%); air pollution and offensive odour (78%); breeding

ground for insects and rodents (71%); outbreak of diseases and epidemics (68%); and depreciation of rental value (77%). The most negative impact were pollution and offensive odour. Residents believed that location of dumping sites in relation to residential areas affects housing, directly and indirectly, in many ways. All of these have implication for good health of the respondents.

Table 4: Effects of Dumpsite on Housing

Effects	Frequency	Percent
Decrease in rental value	193	77
Outbreak of diseases and epidemics	170	68
Breeding ground for insects and rodents	178	71
Air pollution and offensive odour	196	78
Traffic congestion	146	58.2
Unhealthy visual impression	51	20.3

Variation of Annual Rental Value against Distance of the Building from the Dumpsite

Rental values vary according to: (1) the types of housing, and (2) the distance of the building from the dumpsite. Table 5 gives the summary of the variation and distribution. A cursory look at the table shows that annual rent for single-room apartment ranged from N24, 000 to N40, 000, while that of self-contained apartment were between N60, 000 and N150, 000. The annual rent for 2-bedroom and 3-bedroom flats were from N80, 000 to N200, 000, and N150, 000 to N350, 000 respectively.

Cross-tabulation revealed that annual rents increase as the distance of the buildings from the dumpsite increases (table 5). For example, while the annual rent of N24, 000 each was recorded at 32% for single-room apartments located within 10 metres of the dumpsite, rent for single-room apartments of N40, 000 were found in locations above 30 metres from the

dumpsite increase. In the same vein, no 3-bedroom apartment that was located between 0m and 10m valued above N200, 000, while as much as N350, 000 annual rents was recorded at locations above 60 metres. This situation can be observed for all the residential housing types surveyed.

Despite these observations, Pearson's Chi Squared distribution was consequently used to test the level of its statistical significance which is presented in the last two roles of Table 5. Annual rent for all the housing types (apart from self-contained) varies significantly according to the distance of the building from the dumpsite at 5% significant level. With the *p-value* of .000, .000, .000 and .008 for single room, room and parlour, 2-bedroom flat and 3-bedroom flat, respectively, it can be concluded that the observed variation in the distribution is significant and cannot just be attributed to chance. Hence, it can be concluded that rental value depreciates as one approaches the dumpsite and vice versa.

Table 5: Variation of Annual Rental Value against Distance of the Building from the Dumpsite

Annual Rent (Naira)	Distance of the building from the dumpsite (Metres)							Total	Chi-Square Tests	
	0-10	11-20	21-30	31-40	41-50	51-60	Above 60		df	Asymp. Sig.
Single Room										
24000	17 (32)	1 (2)	0	0	0	0	0	18 (34)	18	.000
30000	5 (9.4)	6	2 (4)	0	0	0	0	13 (25)		
36000	0	2 (4)	2 (4)	5 (9.4)	2 (4)	0	0	11 (21)		
40000	0	0	1 (2)	2 (4)	4 (7.5)	3 (6)	1 (2)	11 (21)		
Total	22 (42)	9 (17)	5 (9.4)	7 (13)	6 (11)	3 (6)	1 (2)	53 (100)		
Room & Parlor										
N48000	24 (33)	2 (3)	0	1 (1.4)	0	0	0	27 (37)	24	.000
N60000	17 (23)	4 (5.5)	1 (1.4)	0	0	0	0	22 (30)		
N72000	1 (1.4)	4 (5.5)	2 (3)	0	2 (3)	0	0	9 (12)		
N80000	0	0	2 (3)	2 (3)	3 (4)	3 (4)	1 (1.4)	11 (15)		
N96000	0	0	0	0	0	0	4 (5.5)	4 (5.5)		
Total	42 (58)	10 (14)	5 (7)	3 (4)	5 (7)	3 (4)	5 (7)	73 (100)		
Self-contained										
N60000	1 (5.6)	0	0	0	0	0	0	1 (5.6)	24	.129
N80000	2 (11)	0	0	0	0	0	0	2 (11)		
N90000	3 (17)	2 (11)	2 (11)	0	0	0	0	7 (39)		
N120000	0	0	1 (5.6)	2 (11)	0	1 (5.6)	0	4 (22)		
N150000	0	0	0	0	2 (11)	1 (5.6)	1 (5.6)	4 (22)		
Total	6 (33)	2 (11)	3 (17)	2 (11)	2 (11)	2 (11)	1 (5.6)	18 (100)		
2-Bedroom Flat										
N80000	12 (28)	0	0	0	2 (4.7)	0	0	14 (33.6)	24	.000
N100000	9 (21)	4 (9.3)	0	0	0	0	0	13 (30)		
N120000	1 (2.3)	1 (2.3)	2 (4.7)	1 (2.3)	1 (2.3)	0	0	6 (14)		
N150000	0	0	0	2 (4.7)	2 (4.7)	3 (7)	0	7 (16.3)		
N200000	0	0	0	0	0	0	3 (7)	3 (7)		
Total	22 (51)	5 (12)	2 (4.7)	3 (7)	5 (12)	3 (7)	3 (7)	43 (100)		
3-Bedroom Flat										
N150000	4 (18)	0	0	0	0	0	0	4 (18)	24	.008
N200000	3 (14)	0	0	0	0	0	0	3 (14)		
N250000	4 (18)	1 (4.5)	0	0	1 (4.5)	0	0	6 (28)		
N300000	0	0	1 (4.5)	0	2 (9)	3 (14)	0	6 (28)		
N350000	0	0	0	1 (4.5)	0	0	2 (9)	3 (14)		
Total	11	1 (4.5)	1 (4.5)	1 (4.5)	3 (14)	3 (14)	2 (9)	22 (100)		

Note: Percentage in parenthesis

Conclusion and Recommendations

There was a general agreement among the residents that location of dumpsites affects the value of rents in residential environments in many ways. Indeed, this paper has established that an annual rent in all categories of residential apartments depreciates as distance to dumpsites reduces. This finding corroborates Peter et al. (2016) submission that the relationship between the mean property rental values and distances away from dumpsite location is a statistically significant relationship indicating that rental values of the various property types increases as distance to the dumpsite location increases in the study area increases.

Based on the foregoing, this paper recommends a more proactive enforcement of sanitary laws and regulations in residential environments. No matter how adequate solid waste collection and disposal facilities are, there will always be the need for enforcement and regulations. This paper also recommends a policy that will prohibit physical development (especially, residential developments) from locations of 100 metres radius from the dumpsites. Once residential developments are not found in such unhealthy areas, people, either poor or rich, will not have to end up in such areas. Efforts should also be made to relocate households living within 50 metres radius of the dumpsite in line with the international standards.

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